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Kikai, Akio, Ph.D.

City University of New York, 1990

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A

PHILOSOPHICAL FOUNDATIONS

FOR

A HUMANISTIC ONTOLOGY OF LANGUAGE

by

AKIO KIKAI

VOLUME I

A dissertation submitted to the Graduate Faculty in Philosophy in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York.

1990

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Abstract

PHILOSOPHICAL FOUNDATIONS
FOR A HUMANISTIC ONTOLOGY OF LANGUAGE

by

Akio Kikai

Adviser: Professor Marx Wartofsky

Concerning the ontological nature of language, there are three different views: naturalism, platonism, and the view we here call humanism. The purpose of this work is to give rigorous philosophical foundations for this third view.

The basic tenet of linguistic humanism is that language is different from both natural objects and abstract objects since it is a product of a human activity (i.e. speaking) that is essential for our identity as human beings. This view has been a philosophically weak one, in that it usually expresses its ideas through such concepts as "society", "community", and "norm" without explaining what they are. An ontological analysis of language from a humanistic point of view that can serve as a foundation for the ontology of these entities is given in this work.

We call an entity normative if its existence and

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knowledge of it cannot be separated. If an entity is normative, both naturalism and platonism are likely to be inadequate account of it since they usually assume that the existence of an object is independent of knowledge of it. If native speakers' knowledge of language is as genuinely knowledge as is scientific knowledge, then language is normative in this sense. A detailed investigation of the nature of knowledge as well as a criticism of the traditional view of knowledge (knowledge as representation) is given to support this normativity thesis about language.

Then, a new ontological analysis of language is given to show why language exhibits this normativity. In this analysis, we investigate how a language, its speech community, its native speakers, their knowledge of language, and their activity of speaking are interrelated. The difference between language and game is also clarified.

A criticism of Chomsky's thought on language is offered as an application of our view of linguistics. It is shown that there is a internal conflict between his concept of language and his recent naturalism on the basis of the analysis of his concept of "knowledge of language" ("competence").

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To Chieko and my parents.

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INTRODUCTION: HUMANISM AND NATURALISM IN THE ONTOLOGY OF LANGUAGE

What is language? - This is the question we try to answer in this work. This obscure but intriguing question has two settings in which we can think about it.

First, "language" in this context has to be understood as or, at least, be related to our own language, the language we speak everyday, if we are to understand the question at all.

We can hardly separate any aspect of our life from our activity of speaking a language in which we have grown up. Language in this sense is an "object" with which we always have an intimate relationship. We already know what it is to speak it. All of us have concrete experiences of speaking it in numerous types of situations in our life. In a sense, we "know" what language is through these experiences. The question, "What is language?", must be a question directed or related to these experiences with language if it is to have any sense at all. Any satisfactory answer to this question has to account for this experience with our own language. After all, if we separate the concept of "language" from this experience, we

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have no way even to understand this question. Thus the life with our own language constitutes the first sphere to which this question belongs.

However, these experiences with our own language alone don't constitute a self-complete sphere in which this question can be understood and answered properly. We cannot answer this question simply by thinking about our experience with language in everyday life. For one thing, language as experienced by us in our life is too close to us even to be thought about. We certainly "know" our language in speaking it, but we don't have to think about or reflect on our language to "know" and speak it. To speak it is simply our way of existing. However, we need some kind of "mirror" by means of which we keep distance from our language in order to "see" and know it as an "object". We have to leave the original sphere in which we are intimately related with our language in order to know what language is.

Moreover, our departure from this original sphere is also motivated by the necessity and the usefulness of talking with other people who are interested in this question. For we are by no means the first generation to ask the question, "What is language?" There have been generations of people who have asked and answered this question in various ways. We shouldn't ignore what they thought if we take this question seriously.

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These points naturally lead us to another sphere to which this question belongs; that is linguistics as a science of language. When we really want to answer the question, "What is language?", we have to objectify our own language as well as other people's languages. When we thus take a more reflective attitude to language and consult other people for answers to this question, we already start becoming scientists who not only speak but also reflect on language. In such a process, we are becoming linguists, at least in spirit. Linguistics is a historical process of the activity of those people who have studied language by taking such an attitude. If we take our question seriously, we cannot ignore linguistics as such a practice. If our inquiry is to satisfy ourselves as well as others, it has to attend to and account for the results of linguistics.

Thus, to understand our question and to answer it, we have to live in the original sphere in which we are almost one with our language, but we also have to move to the sphere of linguistics without forgetting our original life with language. In a word, we have to belong to these two spheres at the same time to give any satisfactory answer to our original question. This is the approach we take in the course of our discussion.

If we take such an approach, linguistics offers us a proper

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place to start, though it may not give us the final answer. Throughout the history of modern linguistics, there has always been a serious discussion among linguists concerning the nature of its subject-matter; they have always been occupied with a fundamental question, "What kind of entity is language as the object of linguistics?" For example, F. de Saussure, who is widely regarded as the founder of modern linguistics, says, at beginning of his philosophical discussion concerning the nature of language in Cours de Linguistique Générale:

> What is both the integral and concrete object of linguistics? The question is especially difficult; later we shall see why; here I wish merely to point up the difficulty.
>
> Other sciences work with objects that are given in advance and that can then be considered from different viewpoints; but not linguistics. ... Far from it being the object that antedates the viewpoint, it would seem that it is the viewpoint that creates the object; besides, nothing tells us in advance that one way of considering the fact in question takes precedence over the others or is in any way superior to them. (Saussure 1916, pp.7-8 in English translation by Wade Baskin.)

This is an expression of the way our question is posed in the mind of a linguist. As Saussure remarks, how a linguist sees the basic nature of language crucially influences all aspects of his/her investigation, and there are not the one but many views about the nature of language. The situation described by Saussure has repeated itself throughout the history of linguistics so that these

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different views have given birth to various "Schools" of linguistics such as the Prague School, Bloomfieldian linguistics, and Chomskyan generative grammar.

These various views that are explicitly formulated by linguists can be used by us to demarcate the basic geography of our question. In the roughest terms, we can enumerate three different types of view concerning the nature of language.

The first view sees language and linguistic phenomena as a part of Nature, just as stars, trees, and animals are parts of Nature. Linguistics, according to this view, eventually becomes a part of natural science. We may call this type of view naturalism or the naturalistic view of language.

The second view sees language as something analogous to various mathematical objects such as natural numbers, functions, and equations. Language, according to this view, is a species of abstract objects, which should be studied in the same way a mathematician studies calculus. This type of view is usually called platonism.

The third view, on the other hand, sees language as belonging to a special type of objects called human objects. Human objects in this sense are "products of a special kind of human activities", whose exact sense is yet to be specified. Language and all other human objects, according to this view, require a special approach if we

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want to know them. In a word, according to this view, the inquiry into these human objects is nothing but our self-inquiry, and linguistics as a science of language constitutes a part of this self-inquiry of human beings. We may call this type of view humanism or the humanistic view of language in a special meaning of the word "humanism".

Though, logically speaking, these three views thus presented do not exclude each other or collectively exhaust all possible views, they certainly represent three most prominent ways of looking at language that are radically different from each other.

The purpose of our work is to answer our basic question through the development of an adequate humanistic view of language.

From one point of view, humanism in this sense enters a special relationship with naturalism so that these two views define each other's content through their sharp opposition. The origin of this special relationship between humanism and naturalism is the opposition of two ways of looking at the relationship between Nature and human beings. Naturalism and humanism represent two radically different ways of seeing this relationship. On the one hand, the fundamental idea that lies behind

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naturalism is that we can know ourselves in the same way we know the rest of the universe, while humanism asserts that we cannot know ourselves in the same way.

The difference as formulated this way is certainly a methodological one about how we can know the nature of various things. However, we can find the real roots of this difference only in the opposition of two ontologies, namely the opposition of two different views about what things are. For, after all, if human beings and the rest of the universe have a uniform nature, there cannot be any reason to think that we cannot investigate them in the same way. This difference cannot be a moral one, either. Humanism in our sense doesn't imply an ethical doctrine that only human beings have an intrinsic moral value while the rest of the universe lacks such a value, though there clearly exists such a type of humanism. We ourselves think that such a view is deeply wrong and that all natural objects have their own dignity and ask of us a respect due it. Therefore, if we think that naturalism is wrong, our criticism of it cannot be that naturalism is morally impermissible since it treats human beings as if we were worthless natural objects. For such a criticism has to presuppose the worthlessness of the rest of the universe, which we think is a wrong view. Even if we suspend our judgment about the moral value of human beings and the rest of the universe, such a view is not only unnecessary but

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also harmful for our inquiry because it conceals the real source of the difference between naturalism and humanism. Humanism in our sense is not such a moral doctrine.

It is not morality that gives a ground to humanism, but it is rather humanism as a special type of ontology of human objects that gives a ground to a moral thesis that human beings have a specific moral value because of the way we actually exist.

Therefore, if naturalistic views of language are wrong at all, it must be because they mistake the nature of language so that they are doomed to fail to achieve their goal, i.e. the goal of coming to know the nature of language as an essential feature of human beings. Thus, the opposition between naturalism and humanism has to be understood as one of ontology. They are two radically opposing views about what human beings are and what language is as our "essence".

Considering these things, it becomes necessary to criticize naturalism at its most essential point without pointing out any accidental shortcomings of particular versions of naturalism, if we are to develop an adequate humanistic view of language. Thus the criticism of naturalism becomes our second theme which interplays with the first one -- the development of a humanistic view of language -- throughout our work.

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Within such a general framework, we proceed with our inquiry according to the following plan.

In the first chapter, we present the basic ideas of humanism as well as a humanistic view of language by taking the work of Esa Itkonen as our basic materials. The purpose of this chapter is not to argue for a humanistic view of language, but to clarify what elements are involved in it and how they are related with each other so that we may find a path along which our view has to be deepened and critically examined. The most important outcome of this chapter will be that the investigation of knowledge as an independent topic is a necessary preliminary task for the development of a humanistic view of language.

This independent topic -- knowledge -- is dealt with in chapter two, whose main question is what it is to know something. The opposition between two views of knowledge (knowledge as a representation and knowledge as an activity) constitutes the focus of our discussion there, and the criticism of the representational view of knowledge offers us a point of view from which we can see the most essential problem of naturalism as well as an important ground for a humanistic view of language.

The third chapter will be devoted to the criticism of the naturalistic views of knowledge ("externalism" or "naturalistic epistemology") as well as that of more

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traditional epistemology ("internalism"). In this chapter, we also offer a more comprehensive characterization of naturalism in terms of its relationship with modern natural science.

The fourth chapter is the heart of our inquiry, in which we develop our own view of language on the basis of our inquiry in chapter two. Language will be characterized as a normative entity, which is deeply related to the concepts of "community" and "communal knowledge". Our investigation will offer a notion of "communal self" which gives the most basic meaning of "we". In this chapter we also present what we think is wrong with platonistic views of language.

The final chapter is devoted to the critical examination of the significance of Chomskyan linguistics, which no doubt represents the linguistics of our age. This chapter consists of two parts. In the first part, we examine the real historical significance of Chomskyan linguistics. We try to clarify to what extent this school of linguistics has captured the essence of language to which its predecessors failed to do justice.

In the second part, we criticize Chomsky's naturalism that is now giving a fundamental philosophical direction to contemporary linguistics. The fundamental idea of our criticism is that this school now falls into the very position, by criticizing which it had attained a historical

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significance as a school of linguistics.

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CHAPTER 1 A HUMANISTIC VIEW OF LANGUAGE

1.1. Introduction

In this chapter we present the basic idea of humanism as well as a humanistic view of language through critical exposition of a Finnish linguist Esa Itkonen's philosophy of language developed in his Grammatical Theory and Metascience (1978). The reason we chose the work of this linguist, who is virtually unknown among philosophers[1], as the starting point of our long discussion is that in his work we find the most sophisticated (both philosophically and linguistically) and extensive discussion on the ontology of language from a point of view which is loosely called "humanism" or "hermeneutics" in the literature.

As will be seen in the discussion of this chapter, this view can be given its full content only through its fundamental opposition to another view concerning the same

---

[1]. This is by no means the case for linguists. His works attract the attention of linguists who are concerned with the foundation and methodology of linguistics. For reviews of his works, see Ringen 1977 and Kac 1987. Also see Perry 1980.

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topic which is also loosely called "naturalism" or "positivism". The development of our own humanistic view of language and the criticism of "naturalism" function as two complementary themes throughout our work.

Since these terms ("humanism", "hermeneutics", "naturalism", and "positivism") are highly ambiguous and we can find under the current philosophical environment no common and fixed background against which we can give the definite contents to them, we cannot presuppose anything as the accepted meanings of them. What we mean by "humanism" and "naturalism" is determined only through the discussions in this work and the reference to various authors made at each place. While the basic idea of humanism is given in this chapter, the clarification of the concept of "naturalism" is made at 3.3.2. and 3.3.3. when we start our criticism of it.

1.2. The Dilthey Thesis: The Fundamental Difference between the Natural and the Human

The most fundamental element of Itkonen's humanistic view of language is the idea that human languages belong to a special class of entities whose nature cannot be known by

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us through the methods of natural sciences, which can be successfully applied to the natural objects. Consequently, it asserts, linguistics cannot be a branch of natural science. These entities may be called human objects in comparison with natural objects.

This concept of human objects as an ontologically special class of entities is by no means unique to Itkonen. Itkonen himself draws this idea from the thesis of a nineteenth century German philosopher Wilhelm Dilthey, who sharply distinguishes Nature and the world of human beings that consists of the products of our activities. Though the real significance and the scope of this thesis becomes clear only after we go through the discussions in the whole of this work, the following passages of Dilthey quoted by Itkonen convey an idea of the basic concept of human-natural distinction that is rough but serves as a good starting point for our critical exposition of Itkonen's humanistic view of language:[2]

> Die Natur ist uns fremd. Denn sie ist uns nur ein Aussen, kein Inneres. Die Gesellschaft ist unsere Welt. Das Spiel der Wechselwirkungen in ihr erleben wir mit in aller Kraft unseres ganzen Wesens, da wir in uns selber von innen, in lebendigster Unruhe, die Zustände und Kräfte gewahren, aus denen ihr System sich aufbaut. (Dilthey 1927 p.148)

[Nature is alien to us. For it is not internal but

---

2. Itkonen 1978, p.40. Itkonen quotes German. Translations are ours.

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only external to us. Society is our world. We experience the play of interactions in it with all the force of our total being. For we notice within ourselves, in the liveliest restless activity, the conditions and forces from which the social system constructs itself.]

Nur was der Geist geschaffen hat, versteht er. Die Natur, der Gegenstand der Naturwissenschaft, umfasst die unabhängig vom Wirken des Geistes hervorgebrachte Wirklichkeit. Alles, dem der Mensch wirkend sein Gepräge aufgedrückt hat, bildet den Gegenstand der Geistes Wissenschaften.
(Dilthey 1927 p.148.)

[The spirit understands only what it has created. Nature, the object of natural science, embraces the actuality brought about independently of the act of the spirit. Everything on which mankind has left its mark by its activity constitutes the object of the spiritual sciences.]

Das Subject des Wissens ist hier eins mit seinem Gegenstand, und dieser ist auf allen Stufen seiner Objectivation derselbe. (Dilthey 1927 p.191)

[The subject of the science is here the same as its object, and this object is at all levels the objectification of the subject itself.]

Here the validity and the necessity of human sciences ("Geisteswissenschaften") as an area independent of natural sciences is clearly declared. Dilthey's thesis is about both the ontology and the methodology of this special area called "human sciences".

First, according to this thesis, all objects that are products of a human activity constitute a special class. While Nature as the object of natural science is given prior to and independent of any activities of the human

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being and has no internal connection with the human beings, human objects are marked by the activity of human beings and this markedness constitutes the essence of human objects. The fundamental idea of humanistic views of language is that it is the essence of languages that they are the product of human activities, or that a language is a language only insofar as it is the products of human activities. Thus, humanistic ontology of language is deeply rooted in the concept of human activity.

Secondly, this ontological characterization of human objects determines the fundamental character of the method for the human sciences that is quite different from that of the natural sciences. Whether natural or human, the purpose of a science is to know the nature of its object (subject-matter). We cannot use an arbitrary method to know the nature of a chosen subject-matter; we have to select a method that fits the nature of the object to achieve the goal of a science. If human objects and natural objects are fundamentally different type of objects, the method of the human sciences should be different from that of natural sciences. This is the basic idea lying behind the methodological aspect of Dilthey's thesis.

The object of natural science is an object in the sense that it exists independent of the activity of the human being as the subject of natural science. They are related

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with each other as the subject and the object in the sense that the subject is unilaterally knowing the object in natural science. The typical method used for knowing a thing in such a relation is observation. On the other hand, according to Dilthey's thesis, human objects are really not "objects" in this sense. They are said to be "the objectification of the subject itself". Thus, the relationship between the subject and the object in human sciences always, in a sense, contains a relationship between two subjects, namely, a subject who investigates a human objects and another subject who produces that object through its activity. To know a human object, the investigating subject has to know it as the product of another human subject, and to do this, the former has to know the latter as an entity belonging to the same type as himself, namely a human being. In a word, these two subjects have to enter to a relationship in which they can know each other as a human subject. This is a type of relation we experience in our every day conversation. The mode of knowing in this relation is not observation, but understanding, which is the basic methodological concept of the humanistic view of language.[3]

In other words, we know an object of natural science

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3. Itkonen 1978, pp.21-23. This process of understanding is by no means a mysterious one, but the one we experience in an everyday conversation. See ibid., pp.204-205.

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as and only as an observer, while we know an object of human science as one of two agents who know each other by interacting with the other as in a conversation. Thus, it is also said that the knowledge in human science is agent's knowledge while the knowledge in natural science is observer's knowledge.[4]

We call this general ontological and methodological view that underlies Dilthey's sharp distinction between the natural and the human humanism in our specific sense. When applied to the question, "What is language?", humanism is called the humanistic view of language.

Humanism in this sense is always characterized by a thesis that a certain class of objects (e.g. language) are not a part of Nature. This means that humanism is virtually always in a sharp opposition to a view that asserts that the same class of objects are a part of Nature and that the method of natural science can and should apply to them. We call this latter view naturalism.

This opposition of humanism and naturalism becomes the central axis around which the whole of our discussion will evolve. In Grammatical Theory and Metascience (1978), Itkonen calls what we call humanism and naturalism

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4. Itkonen 1978, pp.40, 197.

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hermeneutics and positivism, respectively.[5] However, the difference between Itkonen and us is mostly terminological as far as the basic idea of this opposition is concerned. Nevertheless, this terminological difference has its "ground" in the nature of problem itself. As discussed above, the opposition between humanism and naturalism has both ontological and methodological aspects. One set of terms referring to this opposition ("humanism" and "naturalism") focuses more on the ontological question (what is the ground of this opposition?) while the other set ("hermeneutics" and "positivism") focuses more on the methodological question (how can we know the nature of each class of objects?). One reason why we don't adopt the more popular terminology of "hermeneutics" and "positivism" is that we are strongly opposed to the idea implied by the word "hermeneutics", that the human sciences are sciences of "interpretation". For example, we think that we can never understand the nature of "communication" -- the most important process in the human world-- if we take such a view.[6]

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5. The places where Itkonen develops the basic idea of his "hermeneutics" (humanism in our term), which we critically reconstruct in this chapter, are chapters 2, 6, 7, and 8 of Itkonen 1978.

6. For the exposition of our own view of communication and the criticism of the "hermeneutic" view of communication, see 4.2.6.

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Humanism and naturalism thus characterized have a special relationship: each one of them establishes itself only by negating the other. When one takes a humanist view, he holds that it is deeply wrong to treat human objects in the same way in which we deal with natural objects. On the other hand, if one tales a naturalistic view, he holds that it is deeply wrong to treat something differently only because it is a product of human beings. This means that we can adequately develop a humanistic view of language only through extensive criticism of the naturalistic view of language. This is why we follow two roads to our central question -- "What is language?"-- simultaneously.

1.3. The Schutz-Thesis: Human Objects' Special Relationship with Knowledge

Though our exposition of humanism above gives us a general idea about what humanism is and what a humanistic view of language can be, the concept of humanism characterized so far is, at best, extremely vague. This vagueness consists in the vagueness of the concept of "human objects as the products of human activities". That this concept as it

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stands now is hopelessly inadequate becomes clear if we think about the facts that many products of technology are the products of human activities but can be hardly considered as the objects of the human sciences. For example, industrial wastes are the products of human activities. Nevertheless, we donot think that industrial wastes are the proper objects of human sciences, provided that such sciences exist.

However, this doesn't mean that the concept of human objects or human science itself is a groundless vague concept. It rather means that this concept calls for further characterization. In a sense, we now grasp this concept, but we can express it only in very vague and inadequate terms. This concept requires us to think about its nature more extensively. This further clarification constitutes one of major tasks for a humanistic view of language.

Itkonen himself offers two important characterizations of the concept of human objects: one in terms of "knowledge" and the other in terms of "normativity". We call the fundamental ideas that support these two characterizations the Schutz thesis, which we call after the name of another German philosopher --Alfred Schutz-- used by Itkonen as an important referential point, and the normativity thesis. We discuss them in 1.3. and 1.4.

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1.3.1. Theoretical Knowledge and Atheoretical Knowledge.

Itkonen's Schutz thesis is based on a fundamental distinction between two types of knowledge: theoretical knowledge and atheoretical knowledge. In very rough terms, what Itkonen calls 'atheoretical knowledge' is the kind of knowledge we attain in everyday life whatever type of life we have, and theoretical knowledge is the kind of knowledge we attain through sophisticated scientific activity.[7]

Thus, what we come to know about our own environment, small-scale social relationship surrounding us, or our own language we speak every day is a typical example of atheoretical knowledge. On the other hand, what we come to know as scientific theories or scientific discoveries is a typical example of theoretical knowledge.

Though we have to more extensively discuss the nature of this distinction in chapter 2, this general characterization suffices for our present purpose: the understanding of the basic idea of the Schutz thesis.

1.3.2. Atheoretical Knowledge as Prior Knowledge in Human Sciences.

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7. Itkonen 1978, pp.103-104.

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Given this distinction of two types of knowledge as a fundamental one, a natural question that comes to mind is, "What is the relationship between them?" This question cannot be answered by listing the objects or contents of each type of knowledge, since we can have both types of knowledge about the same subject-matter. For example, we come to know many things about water just by living. This is our atheoretical knowledge of water. However, if we choose chemistry as our vocation, we will know more things about water as theoretical knowledge. Thus, we can have two types of knowledge on the same subject - water. Similarly, everyone knows one's own language, but if we study linguistics, we will attain a different type of knowledge --theoretical knowledge-- about the same object. How are these two types of knowledge about the same subject-matter related? Different answers to this basic question deeply determine our general view about the world and ourselves.

We may enumerate three different views that answer this question. We call them the Husserl thesis, the Sellars thesis, and the Schutz thesis.

The fundamental tenet of Husserl's thesis about the relationship between theoretical knowledge and atheoretical knowledge is that our theoretical knowledge is ultimately based on our atheoretical knowledge whichever the subject

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matter is human or natural. We can find the clearest expression of this thesis in Husserl's last major work The Crisis of European Sciences and Transcendental Phenomenology, especially section 34 of Part III-A.[8] In a word, Husserl asserts that what we know in our everyday life ("Lebenswelt") through our non-scientific activity is prior to and gives ground to what we know about the same subject-matter through our reflective scientific activity.[9] According to this view, the distinction between natural objects and human objects has only a secondary meaning, if any. The fundamental idea is the priority of atheoretical

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8. Husserl 1954, pp.123-137 in English translation. Though this part was first published in 1954, the manuscript itself was written in the later 1930's.

9. The idea is clearly expressed by passages like the following:

> If the contrast has been purified, we must now do justice to the essential interrelatedness: objective theory in its logical sense (taken universally: science as the totality of predicative theory, of the system of statements meant "logically" as "propositions in themselves," "truths in themselves," and in this sense logically joined) is rooted, grounded in the life-world, in the original self-evidences belonging to it. Thanks to this rootedness objective science has a constant reference of meaning to the world in which we always live, even as scientists and also in the total community of scientists.... (Husserl 1954, pp.129-130 in English translation.)

For our own discussion about the relationship between the life-world and the world of natural science and the analysis of the Galilean method of modern natural science to which Husserl calls our special attention, see 3.3.2. and 3.3.3.

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knowledge to theoretical knowledge across the board.

On the other hand, Sellars' thesis on this matter, whose clear expression we can find in Sellars' "Philosophy and the Scientific Image of Man"[10], can be considered as a diametrically opposite to the Husserl thesis. According to this view, once science, which is virtually synonymous with natural science for Sellars, has been started and developed on the ground of original knowledge of everyday life, which Sellars calls "a manifest image" in comparison to "a scientific image", the results of science replace the original atheoretical knowledge so that there can be no fixed ground or soil to which we can always refer back as the ultimate source of the meaning of theories. For such a view, the only valid knowledge is scientific knowledge, and "science" for such a view means exclusively sciences modeled after modern natural science. Thus, this view rejects the validity of any fundamental, either ontological or methodological, difference between human objects and natural objects. Though the most direct offspring of Sellars' idea is so-called eliminative materialism, which has been developed and held by such contemporary philosophers as R.Rorty, Paul Churchland[11], or S.Stich, the idea behind Sellars' thesis represents the thinking not

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10. Sellars 1962, in Sellars 1963, pp.1-40.

11. The most explicit form of this position can be found in Churchland 1979.

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only of eliminative materialism as a specific school in contemporary Anglo-American philosophy, but also a wider spectrum of naturalism in the modern age.

Against the background formed by these two views, the Schutz thesis that Itkonen develops in Grammatical Theory and Metascience can be characterized by an idea that the type of priority of atheoretical knowledge Husserl sees for all kinds of subject-matters holds in a very special way only for human objects. According to this view, the ultimate factual source in human sciences is not the nature of objects as something that exists independent of any cognitive agents, but atheoretical knowledge about them possessed by certain people. This idea is well conveyed by the following passage of Alfred Schutz quoted by Itkonen:[12]

> The facts, data, and events with which the natural scientist has to deal are just facts, data, and events within his observational field but his field does not "mean" anything to the molecules, atoms, and electrons therein. But the facts, events, and data before the social scientist are of an entirely different structure. His observational field, the social world, is not essentially structureless. It has a particular meaning and relevance structure for the human being living, thinking, and acting therein. They have preselected and preinterpreted this world by a series of common-sense constructs of the reality of daily life, and it is these thought objects which determine their behavior, define the goal of their action, the means available for attaining them - in brief, which help them to find their bearings within their natural and sociocultural environment and to come to terms with it. The thought of man living his

12. Itkonen 1978, p.199.

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> everyday life among his fellow-men. Thus, the constructs used by the social scientist are, so to speak, constructs of the second degree, namely constructs of the constructs made by the actors on the social scene, whose behavior the scientist observed and tries to explain in accordance with the procedural rules of his science.
> (Schutz 1962, pp.5-6)

As is suggested in this passage, the Schutz thesis reveals a new and important feature of the subject-object relation in the human sciences. In the natural sciences, what is sought by the scientist is the nature of natural objects in themselves, and what matters in the natural sciences is how these objects react or behave in a particular environment, and what they (the objects) know is irrelevant even if they happen to know something about their own nature as is the case in the medical sciences. Thus, in the natural sciences, the type of knowledge that ultimately counts as valid knowledge is only the scientist's reflective knowledge of his/her objects, which is attained through the established method of natural science[13], and this is why our atheoretical knowledge about natural objects can ,at best, play only a heuristic role and is eventually replaced by theoretical knowledge.

Of course, in a different sense, our atheoretical knowledge is ineliminably involved in the practice of the

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13. For the nature of the method of modern natural science, see 3.3.2. and 3.3.3.

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natural sciences. For example, when a physicist who investigates the nature of elementary particles reads a particular measuring device, his/her atheoretical knowledge of what the meter in the experiment reads is ineliminably involved in this process, and we cannot think of the possibility of replacing such atheoretical knowledge by any type of theoretical knowledge without circularity.[14]

In this sense, the activity of all kinds of sciences is based on our atheoretical knowledge of everyday life; all sciences are rooted in our life-world. The Schutz thesis does not deny this fact. What it assets is the more specific dependency of theoretical knowledge on atheoretical knowledge in human sciences. In the general dependency of theoretical knowledge on atheoretical knowledge we can find even in the natural sciences, atheoretical knowledge about e.g. the measurement is not the knowledge about the very subject matter of the scientist (elementary particles, in our example), but about the instruments involved in their investigation, and there is no atheoretical knowledge about the nature of the subject matter of investigation, i.e. about natural objects on which theoretical knowledge has to depend. The scientist cannot consider his or anybody's atheoretical

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14. Such knowledge, which is involved in every kind of theoretical activity, is what M.Polanyi calls personal knowledge. See Polanyi 1958, Part One. For some important concepts of Polanyi's theory of knowledge, see our 2.2.

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knowledge about the natural object he is studying as the ultimate factual source of his investigation.

However, according to the Schutz thesis, the situation in human sciences is radically different from such a situation in natural science. In human sciences, according to this thesis, there is a type of atheoretical knowledge about its subject-matter on which the theoretical knowledge about this same subject-matter has to be based. Therefore theoretical knowledge about human objects as the subject-matter of human sciences is partly the knowledge about knowledge, and there are involved two levels of knowledge concerning the same subject-matter in human sciences.[15]

The first and basic level of knowledge is called prior atheoretical knowledge[16], and is possessed by the very objects of the investigation,i.e. the human beings who or whose products the researcher investigates. The second-level and formalized knowledge is theoretical knowledge possessed by the researchers. For the researcher to attain this theoretical knowledge about the subject-matter in human sciences, according to the Schutz thesis, he in the first place has to share this prior atheoretical knowledge with his objects or the producers of his objects; if he does not, he first has to acquire or learn it from

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15. See Itkonen 1978, p.199.

16. This prior knowledge is also called pre-understanding (Vorverständnis) by Itkonen. Itkonen 1978, pp.26,30

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the people who already possess it. In such a case, researchers in human sciences have to be students or disciples of the "objects" they investigate.

Thus, the relationship between the researcher and his "object" or its producer in the human sciences cannot be exhausted as one of observing, but has to contain the elements of sharing knowledge with and learning from, which cannot be taken seriously to exist in natural sciences.

Thus, the potential mutuality or the identity of the subject and the object in human science, which is stated only in the most abstract terms by the Dilthey thesis, is given more concrete contents in terms of knowledge by the Schutz thesis. These two theses combined together give us a picture of humanism concrete enough to apply it to language as our specific subject-matter.

1.3.3. An Initial Picture of the Humanistic View of Language and Native Speaker's Knowledge of Language

When applied to language as a particular subject-matter, the humanism that we have so far characterized through our reconstruction of Itkonen's thesis give us a fairly concrete picture of what a humanistic view of language looks like.

Above all, according to this view, linguistics is a

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branch of human sciences which shares methodological and ontological premises with all other branches of human sciences. The corner- stone of this view of linguistics is the concept of a native speaker's knowledge of his own language as prior knowledge, whose existence and validity is claimed by the Schutz thesis. According to this view, the most basic facts about a language that should serve as the factual ground for linguistics as a science about language (basic linguistic facts) have their ultimate source or ground in this atheoretical knowledge of language that we possess as native speakers of our own language. To correctly understand this thesis (the humanistic view of language), we have to distinguish it from a similar but completely different view about linguistics. The humanistic view of language, when correctly understood, does not assert that linguists have to accept almost always all the judgments native speakers make about their own language, or that all the facts in linguistics are those facts based on native speaker's atheoretical knowledge. Such a thesis or attitude which is based on a kind of "worship" of native speakers obviously contradicts any reasonable activity of linguists, and we have no reason to think that we can successfully know the nature of languages by following such an approach since as a matter of fact we as native speakers of our language make many wrong judgments about our own language: we have many prejudices

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or "myths" about our own language, which linguists shouldn't accept as "basic facts".

The humanistic view of language doesn't imply such a view of linguistics: such a view is, at best, a caricature of the former. What the humanistic view of language asserts about linguistics is that the linguists' theoretical activity has to be based on a certain class of facts whose factual ground is native speaker's knowledge of language. This thesis so far says nothing about what these basic linguistic facts are or how linguists can have theoretical knowledge about native speaker's atheoretical knowledge of their own language.[17] Here we take a brief look at reality concerning language and linguistics to see how the humanistic view of language is possible.

Actual practice in linguistics seems to support the Schutz thesis under an appropriate interpretation, and so-called grammatical facts or rules of language provide the proper range of these basic linguistic facts, whose only ground is native speakers' atheoretical knowledge of language. In short, they are the facts about what are the sounds of a particular language, what are the sentences of a particular language, what are the words of a particular langauge, what are the meanings of those words, and how those words are

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17. These topics are extensively discussed in 4.2.

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used in each type of linguistic environment. They are basic phonological, syntactical, semantic, and pragmatic facts about a particular language. Whichever sub-field of linguistics a linguist works in, he cannot do his investigation without taking, at least, a part of these facts as basic linguistic facts about a language he is studying. They may basic phonological facts, syntactic facts, semantic facts, and pragmatical facts about a particular language, but the linguist cannot define the object of his investigation (e.g. Japanese syntax) without taking them as basic facts. Itkonen calls the branches of linguistics that study these basic linguistic facts sciences of grammar or autonomous linguistics.[18]

They are the primary factual ground for all branches of linguistics. As Itkonen remarks[19], even if we work in sociolinguistics, which seems to be quite remote from grammar or a grammatical theory, we cannot cease to take these facts as the factual ground for our study. For what makes sociolinguistics sociolinguistics is that it deals with particular sound waves or patterns of ink on paper not as sound waves or patterns of ink, but as instantiations of sentences of a particular language, say, the New York dialect of American English, and it has to presuppose the

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18. Itkonen 1978, p.311, and Itkonen 1983, pp.1, 7-8.

19. Itkonen 1977.

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basic linguistic facts about this dialect in grammatical sciences such as phonology, syntax, or semantics (e.g. facts about which acoustic objects are sounds of this dialect and which are not); otherwise it cannot distinguish, for example, the blowing out of a candle from the initial sound of the word "what" when each of them are produced equally as results of social interactions.[20] The

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20. This is an example used by Sapir in Sapir 1925 to make a point similar to ours. His view of language expressed in Sapir 1925 and Sapir 1933 is unmistakably humanistic in our specific sense. He sees linguistic facts involving linguistic categories like "speech sound" or "word" as irreducible to the description of natural objects. Sapir finds the ground or source of linguistic facts not in the nature of natural objects in themselves, but in the 'recognition' or 'perception' of native speakers. See Sapir 1933 in Katz (ed.) 1985 pp.66-67.

A similar humanistic or non-naturalistic view of language is expressed by Saussure in Saussure 1916, Part Two, Chapter 3. He says the following:

> Let us contrast the preceding examples [examples of the identity of a street and a train] with the completely different case of a suit which has been stolen from me and which I find in the window of a second-hand store. Here we have a material entity that consists solely of the inert substance -- the cloth, its lining, its trimming, etc. Another suit would not be mine regardless of its similarity to it. But linguistic identity is not that of the garment; it is that of the train and the street. Each time I say the word <u>Gentlemen!</u> I renew its substance; each utterance is a new phonic act and a new psychological act. The bond between the two uses of the same word depends neither on material identity nor on sameness in meaning but on elements which must be sought after and which will point up the true nature of linguistic units. (Saussure 1913, p.109 in English translation.)

For the further discussion of humanism of Sapir and Saussure and their relationship with Bloomfieldian

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sociolinguist cannot demarcate the phenmena belonguing to the language he investigates without these basic linguistic facts.

Thus, in the actual practice, the sociolinguist (e.g. W.Labov) identifies the value of a linguistic (phonological) variable (e.g. the presence or absence of the /r/ sound) for each of actual linguistic products (e.g. shop girls' utterances in New York City's department stores with different social prestige like Saks and Macy's) to determine the social function of linguistic categories (e.g. that of the /r/ sound in New York English).[21] In such an investigation, the sociolinguist has to presuppose basic linguistic facts about what constitutes the American English /r/ (or more specifically the New York /r/) as a necessary ground for his study. He has to determine which actual data he collected are the instanciations of the New York /r/ according to how the native New Yorkers judge about the identity of their /r/ sounds under appropriate conditions like a natural conversation. Insofar as these basic linguistic facts are ultimately based on native speaker's atheoretical knowledge of language, sociolinguistics, as well as every other branch of linguistics, is ultimately based on native speaker's

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linguistics and Chomskyan linguistics, see 5.1.2.2. and 5.1.2.3.

21. This is one of the now legendary early studies of William Labov. See Labov 1972, pp.43-70.

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knowledge as prior knowledge.

Are, then, the basic linguistic facts really based on native speaker's atheoretical knowledge of their own language as the humanistic view of language claims? Reality seems to support this view fairly well. Let's take basic phonological facts as an example.

The phonology of each language, or of each dialect, is a science about the nature of legitimate sounds and sound combinations in that language. For example, English phonology is a science about English sounds and English sound patterns. It is a science about what constitutes the property of 'sounding like English'. In a sense, it is concerned with the purely 'musical' aspect of the English language, which gives this language a specific "musical" identity that distinguishes this language from other languages such as German or French with respect to sounds, tonality, sound-pattern and stresses. It tells us what distinguishes the sounds that sound like English from the sounds that don't sound like English. Therefore, the facts about what sounds and sound-patterns belong to the English-sound-system are the most basic facts for phonology.

Now, it is one of these basic linguistic facts about English sounds that /spal/ is a legitimate English sound pattern while /mpal/ is not though both in themselves do not constitute any meaningful English words. A phonologist

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may explain this fact by saying that the English sound system has the consonant cluster /sp-/ but not /mp-/ at the word initial position. Such an explanation expresses elementary theoretical knowledge about English sound possessed by a phonologist. Native speakers of English usually cannot give such an explanation about this phonological fact, but they unmistakably recognize that /spal/ sounds like an Englsih word while /mpal/ doen't when they direct attention to this pair of sound sequences. They don't have theoretical knowledge about English phonology, and they know English phonology only as speaker's knowledge,i.e. atheoretical knowledge. However, such a linguist's explanation based on his theoretical knowledge about English cannot itself give any factual grounds for the basic linguistic facts they are supposed to explain.

Let's take this the other way around. A phonologist's theory of English sound can be a theory of English sound only because it gives an account of the basic phonological facts that are recognized as such by native speakers. The fact that English speakers hear and recognize /spal/ as sounding like English, while they hear /mpal/ as foreign, is the only ground of this linguistic fact that /spal/, but not /mpal/, is an English sound-pattern, and it is absurd for a linguist whose subject is English phonology to deny such a fact on the basis of other kinds of facts or

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theories. If he/she did this, what the linguist would be studying would no longer be English.[22] Facts about English as seen or perceived by native speakers are the only and ultimate factual ground in phonology, and phonological theory's success can be measured only against these facts. The situation surrounding linguists' actual practice in phonology, as well as in other grammatical sciences, indicates that the Schutz thesis holds well for language and linguistics.

1.4 Normativity of Human Objects.

Thus, the Schutz thesis quite accuraletly captures the nature of the actual theoretical practice of linguists. However, we cannot conclude from this fact the validity of the humanistic view of language. For all the Schutz thesis tells us about language is that native speaker's knowledge of language serves as the ultimate factual source in linguistics, but it doesn't tell us why there exists such prior knowledge in the case of language but not in the case of natural objects. Thus, a naturalist may reply to a

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22. For the same point, see Itkonen 1978, pp.202-203.

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humanist by saying that such a situation of the current practice in linguistics reflects not the nature of language (i.e., that it is a human object as humanism claims), but the accidental historical situation that the technology necessary for the objective measurement of language has not yet developed far enough. Actually, this argument is often heard when Chomskyan linguists try to defend their extensive use of native speakers' "intuition" as a part of admissible methodology of natural science.[23]

This means that the Schutz thesis itself cannot serve as a philosophical ground either for humanism or for the humanistic view of language. What we need is something that tells us why human objects like language exhibit a special feature described by the Schutz thesis that we cannot find in natural objects. We have to know certain features of human objects in themselves by virtue of which the Schutz thesis holds for them. We need an ontology of human objects.

It is the concept of normativity that Itkonen proposes as the key concept for the ontology of language as a human object. We agree with him that normativity is the essence of human objects by virtue of which they exhibits various features we have discussed so far. However, when we move our inquiry one step further and ask, "What makes something

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23. For an extensive criticism of such a view, see 5.2.2.

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normative?", we find his answer unsatisfactory, though by no means is his answer a trivial one. At this point, we have to radically depart from Itkonen, and take the investigation of the essence of the normativity of human objects as one of our major tasks, to which the entire chapter 4 will be devoted. Here we examine and criticize several ways in which Itkonen tries to capture this concept, in order to determine the direction we have to take.

1.4.1. Normativity as the Essence of Human Objects

The whole of Itkonen's humanistic view of language is based on the concept of normativity of language. It is, he claims, this normativity of language that makes linguistics essentially different form any branch of natural science. His concept of normativity, in its turn, is crucially based on the concept of rule. His basic idea, in short, is that the human sciences like the grammatical sciences deal with norms or rules while the natural sciences deal with empirical regularities of natural phenomena. Thus, the human sciences are called normative sciences. It is, according to him, because linguistics, especially grammatical sciences such as phonology or syntax, deal with rules of language that linguistics is essentially a human

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science. Itkonen says the following about the nature of linguistics:

> In this book I have analyzed the nature of the science of grammar. ... The end result of my analysis is that, as a science investigating (the knowledge of) rules, the science of grammar is not an empirical, but a normative science comparable to logic and philosophy. (Itkonen 1978, p.311.[24])

According to Itkonen's view, the concept of rule is the most fundamental one in the ontology of human objects[25], and it is because of their relationship with rules that human objects like language require special mode of investigation.

What, then, are rules? Why do human objects have a certain essential relationship with rules?[26] To this most fundamental question, Itkonen often seems to base his answer on the banal and distinction between "is" and "ought "[27].

However, this distinction between "is" and "ought" is totally useless for the ontology of human objects unless we

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24. Cf. Itkonen 1978, pp.35,54,215.

25. For Itkonen's ontology of language based on the concept of rule or norm as a primitive one, see chapter five of Itkonen 1978.

26. Our own analysis of rules, which are distinguished from laws, is given at 4.2.7.

27. See Itkonen 1978, pp.156-157, and Itkonen 1983, p.55.

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can characterize their difference without circularity, especially without using the concept of rule or its equivalent. If a humanist says that /sp-/, but not /mp-/, is a sound-pattern of English since it is not a regularity but a rule, the humanist has to say why this "is" in linguistic facts is in fact "ought" while the "is" in a natural fact that a dog is an animal is not "ought" but simply "is", without presupposing that language is a human object while a dog is not. The humanist also cannot appeal to the concept of "the product of human activity" since the species of "dog" is the product of human activity in a certain sense.

In short, our eplication of normativity cannot be based on such concepts as "norm", "rule", or "ought", by assuming that we already understand them well. It rather has to toutch the place from wchih they derive. We have to go back to the origin of norms.

However, Itkonen also offers other interesting characterizations of the concept of norm or rule in terms of (1) unfalsifiability of rule sentences, and (2) conceptuality of rules. Let's examine these characterizations to find out what the essence of normativity is.

1.4.2. Itkonen's Characterization of Normativity

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1.4.2.1. Unfalsifiability of Rule Sentences.

The first feature of normativity pointed out by Itkonen is the unfalsifiability of rule sentences.[28] The basic idea is that while sentences that describe the regularities in Nature are hypotheses and ,thus, falsifiable in the Popperian sense, the sentences that express rules (rule sentences)[29] are not falsifiable since rules like those of a language or a game, but not regularities, are already known for certain by some people like the speakers of a language or the players of a game.[30] He explains the unfalsifiability of rule sentences in the following way:

> It is an axiom of the philosophy of natural science that a universal hypothesis referring to a presumed regularity is falsified, if there occur counter-instances to it... On the other hand, a sentence referring to a rule is not falsified simply because there occur (what look like) counter-instances to it. Consider the sentence "In poker a full house beats a flush". This sentence is not falsified by the fact that in one particular game a player with a flush takes in the pot even though someone else is holding a full house. Such a performance is incorrect, whereas the rule-sentence is about correct performances only. It is a remarkable fact that behavior violating a rule does not falsify the corresponding rule-sentence. The reason is that what one does has no direct relation (although it certainly has some relation) to what one ought to do; and a rule-sentence is precisely about what one ought

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28. Itkonen 1978, pp.156-157.

29. Itkonen 1978, p.122.

30. Itkonen 1978, p.148.

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to do. (Itkonen 1978, pp.157-158.)

Though we think that Itkonen's insight that the distinction between norms and regularities has something to do with our modes of knowing them is true, what he says here is simply not true, and the concept of unfalsifiability of a sentence fails to capture the essence of normativity. Unfalsifiability of a sentence is neither a necessary nor a sufficient condition for a sentence to express a rule or a norm.

Let us explain how Itkonen's characterization is wrong. First we have to re-state the basic distinction between a rule and a rule sentence, on which Itkonen's characterization is based. The concept of falsifiability applies only to such entities as sentences or theories, and doesn't apply to facts or knowledge, since if something is a fact or known to be true, it doesn't make sense to talk about its falsification; facts can falsify statements or theories, but facts themselves cannot be falsified since they are facts. The same thing can be said of a rule and a rule sentence. If something is a rule, it cannot be falsified any more than a regularity in Nature can be falsified. This is why Itkonen talks about rule-sentences rather than rules when he uses the concept of "falsifiability" for characterizing rules. What he tries to do is to distinguish rules and regularities by comparing

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rule sentences and regularity sentences. In a word, what he claims is that rule sentences are not unfalsifiable while sentences describing regularities of Nature are falsifiable. However, this is simply not correct. Sentences are equally falsifiable whether they are supposed to describe norms or regularities, insofar as we take rule sentences as something independent of rules. The sentence, "/mp-/ is an English sound-pattern" is falsified by a phonological fact about English, though this sentence is a rule sentence according to Itkonen's (and our) view. This is a false rule sentence. On the other hand, if we call rule sentences only those sentences that correctly describe actual rules (i.e., true rule sentences), the distinction of a rule and a rule sentence collapses. In the same way, if we call only those sentences that describe actual regularities in Nature (i.e., true regularity sentences) regularity sentences, regularity sentences are not falsifiabile, either. Therefore the concept of falsifiability doesn't correspond to the boundary between the natural objects and the human objects. In a word, we cannot characterize the concept of rule or norm by means of any formal features of sentences that describe rules.

It is true that a single incorrect performance of a poker player doesn't falsify a rule sentence of poker, but it is also true that a single counter-instance itself rarely constitutes the falsification of a theory in natural

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science since we can think that an experiment or an observation is not accurate or that there are hidden variables we failed to take into account. On the other hand, if we keep observing the same type of 'incorrect performances' by many poker players, we will have a reason to suspect that what we initially thought was a rule of poker is not actually practiced by poker players any longer; they may have changed the rule, or my 'knowledge of that rule' may have been wrong. That a rule sentence is about correct performances doesn't guarantee that this rule sentence itself is correct. Some rule sentences are true and some rule sentences are false. In linguistics, we cannot deny the 'falsifiability' of rule sentences or grammatical theories without absurdity. Even if a linguist make a rule sentence according to his own linguistic intuition, if actual speakers, including the linguist himself, systematically violate that rule in actual uses of language, we have to say that this rule is not a real rule in actual use.[31]

Moreover, there are many sentences that describe the empirical regularity in Nature but are not falsifiable in the Popperian sense. Probabilistic sentences are of this nature. The sentence that the probability of getting a tail in tossing a coin is 50% is not falsified even by five

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31. See Itkonen's explanation of unfalsifiability of rules of language at Itkonen 1978, p.162.

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consecutive heads, but this doesn't make this sentence a norm or a rule. Definitions of theoretical terms are also unfalsifiable, though they are not rules or norms objects ought to follow.

We think that the feature of unfalsifiability is neither necessary nor sufficient for characterizing normativity. In a word, it has no relevance to the concept of normativity.

1.4.2.2 Conceptuality of Normative Facts

As we remarked above, there seems to be an important difference between the way we know 'human and normative objects' as games or languages and the way we know natural objects. Even at the level of atheoretical knowledge, the way we know natural objects such as water and the way we know entities like language seems to be essentially different though both of them are familiar objects for us. This difference no doubt has a deep connection with the Schutz thesis itself.

Even though water is quite a familiar object to us, its familiarity or known-ness seems to be different from our own language's known-ness or familiarity to us. It has to be this special familiarity or known-ness of human objects that Dilthey's idea of 'the spiritual' points to and that Itkonen tries to capture under the name of normativity. This concept of special kind of known-ness

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seems to do with the very essence of human objects. This known-ness is the core of normativity of human objects, from which the meaning of rule or "ought to" has to derive.

The second feature by which Itkonen tries to capture this concept of normativity as special known-ness may be called the conceptuality of rules or norms. The fundamental idea is that rules (e.g. rules of poker or "rules" of phonology) conceptually define what constitutes or counts as certain entities (e.g. poker game, full house, the winning, in poker, and English sentence, English sound pattern, in English phonology) while theories of natural science describe the nature of given objects.[32] Itkonen says the following about this issue:

> The sentences which we have been examining here might be reformulated as universal implications e.g. in the following way: "For all x, if x is a piece of metal and is being heated, then x will expand", "For all x and for all y, if x is a full house and y is a flush in poker, then x beats y", "For all x and y, if x is a (correct) English definite article and y is a noun correlated with x, then x precedes y". In the first implication the relation between the denotata of the antecedent and of the consequent is an empirical one... On the other hand, in the latter two implications the relation between the denotata of the antecedent and of the consequent is a conceptual one: it is impossible for the antecedent to be true if the consequent is false, because it is a defining

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32. Similar interpretation of rules of language is given by Searle. He uses the term constitutive rules to express this idea. See Searle 1969, Chapter 2 section 5, especially pp.34-35.

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> property of any full house and any flush, as correctly understood, that the former beats the latter, just as it is a defining property of any correct definite article in English that it precedes the noun correlated with it.
> (Itkonen 1978, pp.159-160.[33]; the first and the second underlines are A.K.'s.)

Itkonen here tries to capture the distinction between 'empirical relation' based on the reality of the natural world and 'conceptual' relation based on the nature of such entities as language or poker game. However, his explication employed here doesn't fit this difference very well. In a word, he considers this difference as consisting in the difference between the contingency of natural facts and the necessity of facts about language or poker. Thus he claims that it is a necessary fact that a definite article of English has various properties that it actually has as a definite article of English while it is a contingent fact that a piece of metal has various properties it actually has as a piece of metal. However, the facts about language (e.g. a definite article in English precedes the noun correlated with it) are by no means necessary in the sense that mathematical or logical truth are necessary. There is nothing contradictory or inconsistent in the proposition that the definite article

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33. Cf. Itkonen 1978, pp.134,151,164.

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in English comes after the noun correlated with it.[34] We cannot explicate the distinction between facts about language and facts about Nature by means of logical and modal features of their abstracted content as we can distinguish mathematical facts and natural empirical facts. The former difference is not formal while the latter is. Facts about languages and games are not necessary: they might be different if the history of nations had been different, and actually they change over the course of time. The normativity of such entities as languages and games is rooted not in the 'necessity' of their contents but in the way we know them, therefore we cannot avoid mentioning the element of knowledge to characterize it.[35]

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34. Actually it is not universally valid even within English that definite articles always precede their nouns. There are cases like, "Ivan the terrible". This is pointed out by Ringen in his review of Linguistics and Metascience, which is an earlier version of the work we are examining. Ringen 1977.

35. At many places in Itkonen 1978, Itkonen remarks the element of knowledge in normativity, but he mixes up this problem of knowledge with that of the formal problem of falsifiability. For example, he says the following about the specific feature of the facts about language.

> It is an axiomatic truth of the philosophy of natural science that empirical universal hypotheses can only be confirmed to a higher or lower degree, which means that they may eventually be assumed to be true; but they can never be conclusively confirmed, or verified, i.e., known to be true. By contrast, true rule-sentences are of course known to be true: this is precisely the reason why they are unfalsifiable. To deny this is to claim that even when examining English as we know it , we can only 'observe' particular correct occurrences "the man", "the man",

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In the passage quoted, Itkonen is pointing at an important difference between natural facts and facts about language, but he mistakenly thinks he can capture it by means of the modal features (necessity and contingency) of their contents.[36]

> "the man",etc. 'confirming' the 'hypothesis' "In English the definite article precedes the word man", but that we can never know for sure whether this 'hypothesis' is true. But such a claim is surely absurd." (Itkonen. 1978, p.162.)

Here he mixes up two things, one is falsifiability as a formal feature of sentences or theories, another is the always-already-known-ness of linguistic facts, which we will examine in a moment. .

36. Ironically, such way of thinking is the special character of Logical Positivism, which Itkonen tries hard to criticize.

One important program of Logical Positivism was to define the concept of science or scientific theory, and the basic concept used for this project is the distinction between theory and observation. Logical positivists tried to define this difference by means of the contents or the logical structure of sentences that express them. This is their formalism. However, this is totally wrong-headed idea since the same sentence (e.g. that a gene consists of DNA) that expressed a mere hypothesis forty years ago expresses an observation today.

Popper's concept of falsifiability Itkonen heavily relies on his work has the same formalistic spirit as many concepts of Logical Positivism have. Both Popper and Logical Positivists think that the essence of science consists in an intrinsic property of scientific theories rather than a special mode of the activity of scientists.

Unless we shift our attention from the content of what we know to the activity in which we know it, there is little hope to solve many fundamental questions of the ontology of human objects as well as those of philosophy of science. For the analysis of scientific activity, see 3.3.2. and 3.3.3.

The whole of Itkonen's work is overshadowed by this formalism which is essentially the heritage of Logical Positivism without its being noticed by Itkonen himself.

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1.4.3. On the Concept of Normative Entity.

Now we have finally got the concept that seems to capture the very essence of the distinction between human objects and natural objects. The contrast of human objects and natural objects in terms of known-ness we suggested above seems to capture the essential difference between them. For example, at each moment of a particular language, this language is always already known by its natives. We cannot observe this always-already-known-ness in natural objects or theoretical definitions in natural science. For example, even before Newton defined the force as "F=ma", the force had operated in the same way in the universe. What Itkonen tried to capture through "conceptuality" without success seems to be this special known-ness of human objects.[37] Let's tentatively call these entities that show

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Because of this formalism, his thinking has a strong tendency of "positivism" he tries to criticize.

For our analysis of the essence of modern science from such a point of view, see 3.3.2. and 3.3.3.

37. In the later work -- Causality in Linguistic Theory (1983)-- Itkonen more explicitly remarks this feature of known-ness.

> It is the defining feature of a human language that it exists only if it is known to exist. In this respect it differs sharply from physical events or regularities which exist independently of human knowledge. Therefore we can coin the slogan that, as

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this special always-already-known-ness normative entities. Both English and poker are normative entities in this sense. What is the nature of normative entity? This has to be the most fundamental question for the humanistic view of language. In the rest of this chapter, we demarcate this concept of normativity as special known-ness more clearly.

The objects of natural sciences are given to us prior to and independent of our act of knowing them. They exist in themselves, and we first identify them as something existing independently of us and investigate their nature as something unknown. Therefore what constitutes these objects may or may not be known to us when we start our investigation. Their existence and our knowledge of them are independent, and this independence makes scientific knowledge about them a dis-covery in the sense that it makes what is covered (unknown) from the sight of human beings dis-covered (known) to our sight. This possibility of discovery makes natural science empirical in the most important sense of the word. Natural objects are initially unknown to us and exist independently of the existence of knowing subjects. Even such familiar material as water has

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far as human langauge is concerned, 'existence and (common) knowledge coincide'..."
(Itkonen 1983, p.130.)

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the period in its natural history when it was not known by any knowing subjects. It existed long before human beings first recognized the existence and the nature of water. In this sense, natural objects, however familiar they are to us, are external to us: they can exist without us human beings. We have to empirically discover what they are.

On the other hand, what a "full house" is has been always already known by some human beings at every moment of the history of poker since poker came into existence. What constitutes a "full house" is not something to be discovered, but something always known to poker players, and something to be learned by people who don't know poker. It is because poker cannot exist independently of human beings' activities and knowledge about it. It was made by conscious human activity, therefore it is always already known at every moment of its history. It doesn't make sense to speak of the discovery of poker; even if a future archeologist 'discovers' poker in the ruin of our civilization, it is actually 're-discovery of poker'.

It is this essential connection between the existence and knowledge that characterizes normative entities. Normative entities like language or games cannot exist without being known by somebody. Moreover, this feature of a normative entity gives a most vivid interpretation to the passages of Dilthey and Schutz that offered us the initial idea of human objects. If an entity has this feature of

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the inseparability of existence and knowledge, if an object's existing always means its being known by human beings, such an object should has a special familiarity to a human being who investigates this object. This concept of the familiarity between the subject and the object is the idea that underlie Dilthey's passages. On the other hand, if an entity has this special familiarity, it means that there are always people who already know this entity. The knowledge of these people must be the prior knowledge in the Schutz thesis.

Moreover, this inseparability of existence and knowledge gives us a vital clue to the real understanding of the nature of rules, norms, and obligation ("ought to"), too. If something is a rule or norm for a person, and if this person has an obligation to follow it, it always means that this person knows this rule, since, otherwise, the force this "rule" exercises on this person is not that of obligation, either moral or legal, but that of coercion. This means that the origin of rules and obligation has an important connection with this concept of the inseparability of existence and knowledge. If we are to understand the nature of a norm and to distinguish obligation from coercion, this concept gives us a crucial ground.

In a word, the concept of normative entity that is defined

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now only loosely by means of this inseparability of existence and knowledge seems to embody the essence of human objects that we have struggled to understand. The adequate concept of normative entity is something that would give a strong basis for humanism as well as for the humanistic view of language. Therefore, from now on we shift our focus from the more general concept of human objects to the more specific concept of normative entities, and call this inseparability of existence and knowledge of normative entity its normativity. Thus, it becomes the major task of our ontology of language to clarify the ontological features of anormative entity by virtue of which it has this normativity, which in turn results in various features of human objects. This topic, together with the investigation of the nature of language as a special type of normative entity, is extensively dealt with in chapter 4.

However, we have to deal with one important topic before moving to this main task. That is the topic of knowledge. This preliminary investigation is absolutely necessary for the further investigation of the ontology of language as a normative entity. Since a normative entity is defined by the inseparability of its existence and its being known by human beings, we have little hope to investigate the nature of such an entity without understanding what it is for us to know something.

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Especially, we cannot avoid the task of clarifying the distinction between atheoretical knowledge and theoretical knowledge since when we say a normative entity is always already known by some group of people, we mean that they know this normative entity not as an object of theoretical knowledge but as an object of atheoretical knowledge. The question we have to fact is, whether both of these two categories of knowledge are knowledge in the same and the proper sense of the word "knowledge", and whence their difference come from.

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CHAPTER 2 ON KNOWLEDGE

2.0. Introduction: On the Necessity of a Discussion on the General Nature of Knowledge and the Plan of This Chapter

The humanistic view of language described in the first chapter heavily relies on the distinction between theoretical knowledge and atheoretical knowledge at two crucial points.

First, the Schutz Thesis says that the methodologically essential difference between human sciences and natural sciences is that in human sciences certain people's (e.g. speakers of English) atheoretical knowledge about the subject matter (e.g. English) functions as the necessary and independent factual basis for a particular science dealing with that subject matter (e.g. linguistics) while there is no such group of people in natural sciences whose atheoretical knowledge about the subject matter (e.g. water) has a privileged function in a particular science. Such a characterization of human sciences can make sense only when atheoretical knowledge and theoretical knowledge are two clearly distinguishable

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types of knowledge.

Second, the concept of atheoretical knowledge is necessary for the characterization of normative entities, which we characterized by means of the concept of the inseparability of existence and knowledge in the last chapter. For this feature applies not only to normative entities like language but also to theoretical concepts based on definitions like the concept of force in Newton mechanics (F of "F = ma"). Both theoretical definitions of concepts (e.g. the concept of force) and normative entities (e.g. English) are always already known by certain people at every moments of their history. The moment Newton defined this concept, it was already known to him. At every moment in the history of English, this language is always known to certain people. The concept of "discovery" doesn't apply to either of them. The only difference between them is that the speakers of English know English as an object of atheoretical knowledge while Newton, who gave birth to this concept of force, knew it as an object of theoretical knowledge when this concept came into existence. Without the distinction between those two modes of knowledge, we cannot distinguish our knowledge of language from our knowledge of force based on the definition "F = ma".

Therefore, establishing the minimum adequacy of this distinction (theoretical knowledge and atheoretical

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knowledge) is a necessary condition for the establishment of a humanistic view of language we sketched in the last chapter. Moreover, the validity of this distinction itself ultimately depends on what one takes the general nature of knowledge to be. For, as we will see soon, if knowledge is a certain kind of true justified belief, as the dominant view in contemporary epistemology asserts, there cannot be atheoretical knowledge as an independent category of knowledge. Atheoretical knowledge cannot be knowledge according to this view. The key concept that combines this accepted view of knowledge and the distinction of theoretical knowledge and atheoretical knowledge is that of ground or justification (2.3.1).

This is why this chapter as a whole is devoted to critique of the traditionally accepted view (knowledge as a kind of justified true belief) and to establishing of a minimum plausibility of an alternative view of knowledge.These two views on knowledge are explicitly presented in 2.3.2. and 2.3.3. respectively. In 2.1., we re-introduce the distinction between theoretical knowledge and atheoretical knowledge. 2.2. is an important digression whose topic is the structure and different modes of consciousness. We introduce four different modes of consciousness to establish the concept of knowledge or cognitive activity in general that is distinguished from skill. In other words, the purpose of this digression is to

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clarify the concept of <u>being cognitive</u> through the description of the mode of consciousness that is specific to cognitive activities.

The substantive discussion about the essence of knowledge (what is knowledge? what makes something knowledge?) starts at 2.4., where we discuss the nature of the actual process of recognition of truth in great detail by taking a case of 'theoretical knowledge' as an example. The conclusion we reach is that this process would be impossible if the traditional view were correct. In other words, we try to show that the traditional view implies the most radical form of skepticism which even denies that we know such trivial facts as the one that we are not a brain in a vat or that we have hands.

In 2.5., we explicate the source of this skepticism and examine the validity of a powerful skeptical argument to conclude our investigation. We see that the apparent force of the skeptical argument consists in an unwarranted extension of the concept of <u>epistemic assumption</u>.

The purpose of this chapter as a whole is to destroy, or at least shake the credibility of the traditional view, in order to create room in our mind for entertaining an alternative view of knowledge, which can serve as a ground for the humanistic view of language.

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2.1. The Distinction between Theoretical Knowledge and Atheoretical Knowledge.

In this section, we construct an initial picture of this dichotomy through some examples, and show that Itkonen's characterization of the dichotomy that theoretical knowledge is hypothetical while atheoretical knowledge is certain or un-hypothetical fails to capture the difference that is thus initially grasped.

In a word, theoretical knowledge is a mode of knowledge that is exemplified by our knowledge of various scientific theories. It typically takes the form of knowledge of laws[1], but can also take the form of knowledge of

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[1]. The distinction between knowledge of categories and knowledge of laws is a formal distinction for our knowledge about universals. Knowledge of a category (e.g. woman) consists in the possession of the ability to tell whether a given individual specimen (e.g. a person) belongs to that category or not. If we have knowledge of a category X (e.g. woman), we know what X is in a sense. Therefore, we can call our knowledge of a category knowledge-what.

Knowledge of laws is our knowledge of universal facts about categories. For example, our knowledge that a man cannot give birth to a baby is an example of knowledge of a law about the category of man. Strictly speaking, our knowledge of laws has to be distinguished from 'inductive generalization' such as the one that water is liquid, which is not true as an universal statement. If we know a law, the content of this knowledge is expressed by a universal proposition. Therefore, our knowledge of a law is a type of knowledge-that.

This distinction itself is a formal one, and

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categories as when a scientist identifies an entity through various examinations and criteria. On the other hand, atheoretical knowledge is typified by our knowledge of such familiar categories as 'water','tree', 'wine', 'word', but it also can take the form of knowledge of laws as our knowledge of laws of logic or arithmetic exemplifies. Roughly speaking, we can say that this distinction corresponds or is similar to the distinction we recognize between 'scientific knowledge' and 'common sense' or 'knowledge of everyday life'. However we cannot establish the distinction between theoretical knowledge and atheoretical knowledge on the assumption that scientific knowledge and common sense are substantially distinguished without begging the question since it is the feature of atheoreticalness itself that characterizes the special mode of our 'common sense' if this is to be a well-demarcated concept at all. Therefore, we have to extract some general and essential features of theoretical knowledge and atheoretical knowledge without referring to the presupposed

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crisscrosses the dichotomy between theoretical knowledge and atheoretical knowledge though instances of our knowledge of categories are more likely to be atheoretical (e.g. our knowledge of the categories of 'man', 'woman','water','tree') than theoretical and those of our knowledge of laws are more likely to be theoretical (e.g. that water is H_2O). For example, if we discriminate a specimen of a chemical substance through a complicated examination, our knowledge of the category of this substance is theoretical knowledge, and our knowledge of a law that mothers are women or that no statement can be true and false at the same time is atheoretical knowledge.

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distinction between 'scientific knowledge' and 'common sense' to establish this distinction.

Itkonen characterizes theoretical knowledge as hypothetical knowledge. By this feature he means that our theoretical knowledge is falsifiable and uncertain[2]. Atheoretical knowledge is, on the other hand, characterized as unfalsifiable and certain knowledge. However, this characterization doesn't seem to capture the essence of this distinction at all. For it is, at least, doubtful whether we can apply such concepts as 'hypothetical', 'falsifiable', or 'uncertain' to the concept of 'knowledge' consistently since, for example, it is not knowledge itself but a theory as the abstracted content of knowledge that we usually call falsifiable in the Popperian sense. Let's take a closer look at how this characterization may be applied to our present problem.[3]

When we say we 'know' a theory, there are two completely different types of cases. We may 'know' some theories only as proposed hypotheses for certain field of

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2. Itkonen 1978, pp.103-104, 144, 148, 152, 215, 217.

3. In a word, the problem of Itkonen's treatment of knowledge is that he fails to distinguish knowledge and its abstracted contents since he doesn't have any proper account of knowledge itself. For example, in one place, he talks not about theoretical/atheoretical knowledge but theoretical/atheoretical concepts (ibid. p.102). Of course, knowledge and concepts have an internal relation, but they are not the same. Itkonen is an example of the case where we cannot deepen our philosophical understanding of language without seriously asking about the nature of knowledge in general.

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phenomena without knowing their truth, namely whether they are true or not. If we know something about the string theory of contemporary sub-atomic physics[4], which gives us a unified view about all forces in the universe, our knowledge belongs to this type. Even an expert in this field knows only the contents, premises, and consequences of this theory; nobody ,at this moment, knows the truth or falsity of this theory. This sense of 'know' is very close to the one implied when we say ,for example, that a person knows the story of Hamlet. His knowing the story of Hamlet means his understanding and retaining a story about a fictional character ,Hamlet, created by William Shakespeare, but does not mean that this story is a historical fact, or that he knows whether this story is a historical fact, or even that he believes this story. Knowing in this sense is separated from the truth of its object. This is not the sense of knowledge we are interested in when we talk about our theoretical knowledge. Scientists know more about their subject than this sense of 'know' implies. The contents of this type of knowledge may be fairly called 'story', 'opinion', 'doxa', or 'hypothesis'.

The concept of 'knowledge', on the other hand, that is relevant to theoretical knowledge is the one that has something to do with the truth of theories. When we say

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4. See Hawking 1988 Chap 10.

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that a chemist has much theoretical knowledge about water that a layman doesn't have, we don't mean that he knows some stories about water without knowing whether they are true or not; what we mean is that he know some facts about water that a layman doesn't know.

The concept of 'hypotheticality' applies without any qualification to the first concept of 'know', but it is to the second concept of 'know' that the hypotheticality has to be applied if the latter is to clarify the concept of theoretical knowledge at all. It is at least problematic whether we can characterize theoretical knowledge in this sense by using the concept of hypotheticality. When we say that a chemist has much theoretical knowledge about water, we don't seem to mean that he knows this hypothetically, as in the case of string theory in contemporary physics, without knowing whether they are true or not.[5] Thus it seems quite hopeless to characterize theoretical knowledge through hypotheticality without substantial modification of the latter. We have to attack the problem of this distinction from a completely different perspective. Before starting substantive discussion of this issue, we have to make a digression to clarify the concepts related to consciousness.

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5. For the nature of scientific knowledge, see our discussion in 3.3.2. and 3.3.3.

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2.2. Knowledge and Consciousness

2.2.1. Necessity of the Typology of Consciousness

It is almost impossible to talk about knowledge without using the term 'consciousness' or its cognates such as 'unconscious', 'preconscious', 'consciously','tacitly', 'awareness', 'be aware of', 'consciously recognize' and so on. Whether it is an accident or an indication of the essential connection between knowledge and consciousness, it is only confusing to use these terms without possessing any clear typology or terminology. There may be an objection against such clarification of the concepts related to consciousness on the basis of their essential vagueness. It is true that they are vague and we may not be able to make them as clear as are, e.g., mathematical concepts. However, as long as we cannot dispense with these concepts in our discussion, it is a much more reasonable and intellectually responsible attitude to consciously examine them rather than to simply use them or to appeal to such terms as 'tacit' without knowing exactly what we mean. It is why we here make a digression to explore a typology of modes of consciousness and to

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establish, though perhaps not in an ideally clear way, some terminology about consciousness with respect to knowledge. We will introduce some concepts from the phenomenology of E.Husserl.

In one important sense of 'know' our conscious awareness of the object of knowledge has an essential connection with our knowing that object. When, for example, we say that a person knows a certain fact, we mean, among other things,that he is aware of that fact. If he is not aware of that fact, we say he doesn't recognize or know that fact. In such cases, only through the relationship of conscious awareness of the truth about a thing do we enter into the knowing relationship with that thing.

However, this relationship between knowledge and consciousness is never so simple that we are always aware of the truths about the things we have knowledge of, and that we have knowledge only about those things whose truths we are currently aware of. Even if we set aside the cases of 'tacit knowledge' in linguistics[6], there are three

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6. As is well known, Chomskyans call native speakers' 'knowledge' of abstract rules or principles of grammar that have been 'discovered' by them tacit knowledge. The direct source of the term 'tacit knowledge' is M.Polanyi 1958. In that work, he calls the type of knowledge that cannot be articulated but has to be the basis for articulated knowledge personal knowledge. The term 'tacit' is used to express this unarticulatedness or muteness. Polanyi's 'personal knowledge' more or less corresponds to what we call atheoretical knowledge of categories. See ibid. chapter 5. For the details of Chomsky's concept of

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points that defy this naive formulation of the relationship between knowledge and consciousness.

For one thing, while only a limited number of things are the actual objects of our consciousness at each moment, we do know many things even at the moment they are not the current objects of our consciousness. We don't lose our knowledge of these things or forget them at such moments; they are simply out of the focus of our consciousness without being forgotten. Secondly, there are things of which we are consciously aware but of which we do not think we have knowledge in the genuine sense of the word. Skills of different sorts belong to this group. Whether they are the skills of animals or human beings, the possession of a skill as the ability to effectively produce a particular pattern of behaviors in accordance with a particular goal can hardly be separated from the possession of consciousness. Both in the process of its acquisition and its use, it is by no means rare that we are consciously aware of our own skill. If we are to exclude these skills from the category of knowledge, we have to specify which aspect of the relationship between our consciousness and our skill inclines us to this exclusion.

Thirdly, we are not necessarily aware of the objects of our knowledge even when we know about these objects. This is the case for many instances of our knowledge of

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"knowledge of language", see 5.1.3. and 5.1.4.

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categories. We know many categories in the sense that we can tell their members from non-members, but it is only for some of them that we have ever consciously put the categories or universals themselves into the focus of our attention. For example, we all know what trees are, to some good extent, but only some of us may have ever thought about the category of tree itself and asked such questions as how trees are distinguished from grasses. Nevertheless, this does not seem to make our knowledge of the category of tree into something like a blind habit of which we have no knowledge, insofar as we are aware of the correctness of our each judgment about a particular tree's belonging to the category of tree. This third point requires us to specify to what extent the objects of our knowledge themselves can evade being the focal objects of our consciousness without our ceasing knowing them.

To answer these questions and to clarify the relationship between consciousness and knowledge for clear cases, we have to set forth a classification of different modes of our consciousness since the phenomena of consciousness are by no means uniform or purely continuous and amorphous, but have a certain structure . For our present purpose, we have to enlist four different modes of consciousness: focal consciousness, background consciousness, background-world consciousness, and subsidiary consciousness.

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Phenomenological descriptions are offered below not as a ground that supports our thesis to be developed after 2.3. but as a reasonable common terminological ground for our consequent discussions about knowledge.

2.2.2. Focal Consciousness and Background Consciousness[7]

When we attentively perceive something, e.g. watch a scene or listen to a performance of a symphony, we have a particular object or event as the actual object of our conscious awareness at each moment. This focal object of our attention is called the theme of our perceptive act at each moment.[8] The theme of a perceptual act at each moment is something about which we are engaged in that act. Our attention at each moment is directed to a particular feature or aspect of this theme. Suppose we are looking at New York City from the top of the Empire State Building. The theme of our perceptual act at one moment may be the Brooklyn Bridge; we are watching the bridge for a while, paying attention to its shape at one moment, and to the

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7. The term 'focal consciousness' itself is from Polanyi 1958 pp.55-56. However, the distinction of these two modes of consciousness itself is based on Husserl's concepts of 'nucleus of what is presented' and 'margin' (Husserl 1913 section 44,pp.124-125 in English translation) as the essential structural elements of consciousness. See ibid. sections 28, 44-45, 84, 113, 115.

8. As for the concept of theme, see ibid. section 122.

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traffic on it at another moment. Our attention may shift from the bridge to an accident on Fifth Avenue at the next moment through our recognition/identification of that accident as an accident. Our theme, thus, has changed from a bridge to an accident. Our conscious awareness of the theme and its features at each moment does not consist in the sort of passive awareness that we might have when some unknown stimulus acts on our senses as, for example, when an insect is crawling on our body during our sleep. Except for those cases where a new or strange entity that cannot be identified at even such an abstract level as an object, or an event in general, takes us by surprise and occupies the focus of our attention, our conscious awareness consists in the recognition of the identity of some theme(e.g. recognition of an object as a bridge); and with respect to this already-identified theme, our knowing that it possesses some new features that have been hitherto unknown. However, this recognition need not always take the form of explicit inner speech like, "There are so-and-so many cars on the bridge." Of course, we may sometimes recognize new features of our theme by making such inner speech to ourselves, but we can also know these things without such explicit form while perceiving the current theme. Thus our knowledge of the perceptual theme grows sometimes with judgments in explicit form and sometimes without them. The theme of our perception, which was

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originally identified in one way or another, is getting enriched and modified. It grows like a peal.

As the focus of our attention shifts along both temporal and spatial dimensions and a new theme is replacing an old one , the recognition of each new feature of a theme that we consciously grasp at each moment becomes familiarized and loses the newness that originally attracted our attention; thus it is gradually slipping outside the focus of our attention.[9] These receding, once-vividly-recognized features of a theme and the replaced once-prominent themes themselves, nevertheless, do not cease being the objects of our consciousness completely, nor do we stop perceiving them. They still remain the objects of our perceptual acts. They become the objects of a different mode of consciousness than the <u>focal consciousness</u>. This mode is called <u>background consciousness</u>. This is how we retain what is already known and familiar but relevant for the recognition of the current object of focal perceptual attention. Whenever we perceive something as the object of our focal consciousness, this object is surrounded by many things as its background; we are neither unaware of their presence nor do we forget them. Some of these objects retained in the background are more prominent than others, and sometimes so strongly attract our attention that they

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9. Cf. Husserl 1913 section 44.

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almost replace the current theme. Some of them are so familiar to us that it is very hard to put them into the focus of our consciousness.[10] Nevertheless, we perceive them with a special mode of consciousness that is distinguished from focal attention.

This difference between the focal consciousness and the background consciousness does not consist in the difference of the intensity of conscious attention. It consists in their structural relation such that it gives the foundation for perceptual acts as cognitive activities. When a recognition is achieved in our focal consciousness at each moment, what we are doing is to relate previously unknown new elements into the body of familiar old elements organized in a certain way, namely the theme, and we relate a new theme with the constellation of the stored old themes. When we recognize new features of the same theme

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10. In fact, it makes no more sense to talk about the number of themes and their features retained in our background consciousness than to talk about the number of potential statues of Venus in a piece of marble. These numbers have significance only when these objects are actualized, in one case by conscious focalization, in another by the making of a statue. There are many things about which we can talk when a picture is given to us as material for discussion, but there is no way to count their number since they have no actual forms until we take each one of them as our actual theme. Though we cannot talk about their numbers, we have to talk about these potentialities if we are to understand and describe how we see a scene as a scene, hear a melody as a melody, and grasp a story as a story since the actuality is always a tiny portion of these objects. For a detailed discussion concerning actuality and potentiality, see 2.3.3. For the concept of 'potential objects of consciousness', see Husserl 1913 section 84.

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one after another, the receding features are not just left behind the focal consciousness, but they are incorporated into the theme itself. When one theme is replaced by another, the receding theme is incorporated into the body of objects in the background that are organized as a larger unit such as a scene, an accident, a melody, a symphony, a person, and so on, which, in their turn, constitute features of other themes. The perceptual recognition as the source of new knowledge consists in this incorporation of new elements into the old and familiar background. Without this incorporation, the process of recognition performed at the focus of consciousness only generates isolated recognitions of the bare existence of alien stimuli without any identification and mutual interrelation. In such case, we do not understand the objects of our 'recognition' in the sense that we do not know what they are. The experience of such 'recognition' would be similar to the one we would have when we feel the existence of an unknown stimulus when we are sleeping; in such a situation, our perception lacks the objects of background consciousness, and we fail to understand what we perceive because of this lack. We are very often attacked by the sense of crisis when our understanding fails in such a manner. Our background consciousness, thus, plays a

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distinctive role in the process of recognition.[11] There is, thus, always a movement of perceived objects from our focal consciousness to the background consciousness in perception.

There is, however, another direction of movement between our focal consciousness and our background consciousness. That is the retrieval of old and familiar object in the background as a new theme. This process is distinguished from recollection just as the process of incorporation is distinguished from forgetting. For example, when we shift our attention from one part of a picture to another, we anticipate or sometimes even know what we are going to have as the next theme since such a shift is to a significant extent under our intentional control. This control is based on our recognition-with-background-consciousness of the new-becoming theme's 'place' in the organized perceptual background. On the contrary, the object that is currently being recollected does not belong to the 'map' of the background of current mental activity though they are embedded in the background of memory. The way an object in a background of perception becomes the object of focal

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11. From another point of view, we can say that there are two reasons we may fail to recognize something. If this something, whether it is an object, an event, or a law, contains nothing new and is totally familiar to us, we very often fail to recognize it though we know it already. If, on the other hand, this something is so alien to us and has no connection to any known themes, we recognize its bare existence, but fail to recognize what it is.

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consciousness is distinct from the recollection, and this distinctiveness is characteristic of background consciousness. In a word, what we call background consciousness is characterized by its object's readiness-for-the-call-from-focal-consciousness. We experience this readiness as the anticipation for the new focus of our consciousness. We are tacitly or potentially conscious of the objects in background consciousness in the sense that they are ready for the call from our focal consciousness and we only have to shift our attention to take them as the object of focal consciousness. We don't have such relationship with forgotten things or unknown things.

This distinction between focal consciousness and background consciousness applies to any mental acts in which the recognition as identification at focal consciousness in the sense specified above is performed, whether they are perceptual acts or such non perceptual acts as thinking, imaging, reading-as-understanding-a content, or listening-as-comprehending-speech, or recollecting-a-sequence-of-events. For example, when we read and try to understand a mathematical proof of a theorem, we take each lemma as the theme at each time. Of course, this thematization of a particular lemma is based on previous understanding of the content of the lemma itself. After we take that lemma as our theme, we re-construct its proof step by step following

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the printed proof. This process consists of our transforming one formula into another according to particular operations and conditions specific to the region to which the theorem and the lemma belong. This active and constructive process is quite different from any processes in perceptual acts and rather similar to what we are doing when we are daydreaming something. The crucial difference between reading-as-understanding-as-re-constructing of a proof and daydreaming, of course, is the conditions that regulate these constructive acts. To complete our understanding of the proof of a lemma, we have to eventually recognize the identity of what has been constructed and the lemma itself. Without such recognition, the accumulation of mere constructive acts do no more for the understanding of a proof than the accumulation of day-dreams. After we recognize the validity of the proof we have reconstructed, we have to take the next lemma as our next theme, and the old lemma, at the same time, has to be incorporated into our background consciousness that holds many previous lemmas, definitions, axioms as its objects. Only when we go through the whole proof in this way, and incorporate various parts of the proof together into the final theme of the theorem itself, can we understand the proof itself. Very often, this is a painfully laborious process.

The point of this illustration is that the process of

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recognition, which is the source and manifestation of our knowledge, is performed by our focal consciousness not only in perceptual acts but in many non-perceptual acts which have more active elements from the subject's side than do the former. Such a recognition also takes place in many cases of imagination or recollection. For example, what we are doing when we recollect what we did yesterday is not only to retrieve certain organized visual and acoustic images in our mind, but also to recognize certain relations between objects in them. Otherwise, we cannot know what we did yesterday. This element of recognition is what distinguishes knowledge from skill. The exercise of a skill is usually accompanied with a certain kind of consciousness of our body or objects, which we will discuss at 2.2.4. below, but this consciousness does not have to be a recognition of the identity of something; it can be totally an unarticulated consciousness. For example, when an athlete makes a somersault, he definitely has a consciousness of his muscles, but he may not be able to recognize what they are or how they work, however attentively he puts these muscles into the focus of his consciousness. The reason is that his skill of somersault consists not in his ability to recognize something when he wants to , but his ability to perform when he wants to.[12]

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12. For the distinction between skill and knowledge, see 2.2.4. and 2.3.3., too.

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2.2.3 Background-World Consciousness

The illustration of the difference between focal consciousness and background consciousness shows us that some things fail to become the objects of our focal consciousness not because they are unknown to us, but because they are known too well to us. However, this background consciousness is not the only mode of consciousness with a distinctive role in our mental activity that retains the objects that are not currently grasped by our focal consciousness. There is another important mode of consciousness that belongs to this category. We call it background-world consciousness.[13]

We have to first illustrate the concept of 'world we currently live in'. We have to start with an example of a world. Think about the case of reading the mathematical proof of a theorem again. Our background consciousness in this mental activity is filled with many things that are related to the theorem as the central theme of this mental activity. These things contain the definition and the lemma used in that proof, other theorems related to that theorem, and mathematical theories and conventions that are related

13. The source of this concept is Husserl's concept of 'world', developed in Husserl 1913. See ibid. sections 27-32, 47, 152.

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to that theorem. Though we cannot, by the very nature of background consciousness, specify the exact range of this background or enumerate the things in it, what makes these things the objects of our background consciousness in this mental activity is that we can take any of them as the current theme whenever we like while remaining in the same mental activity of understanding this theorem. Because of their mutual relatedness, these objects constitute a large unity that may be fairly called a world, namely the world of mathematics[14], and our engagement in this particular activity of understanding this theorem consists in our currently living in this world of mathematics and having this particular theorem as our central theme. Our living in this world of mathematics means not simply to take mathematical objects or theorems as our theme one after another, but to make certain assumptions and presuppositions specific for this mathematical world and accept particular cognitive and behavioral norms or standards, though they may never be explicitly written down in our text or anywhere else. In a word, our living in the world of mathematics consists in our taking an attitude specific to the mathematical world. Because of this attitude, we experience objects in this world as having certain meanings, namely mathematical meanings. For

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14. Husserl mentions 'the arithmetical world' in Husserl 1913 section 28.

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example, when we encounter particular words in the proof, say, 'value' or 'construction', we don't take these words in isolation and look through the list of all possible meanings for them, but immediately understand them in the way specific to mathematics. We exhibit our mathematical attitude in this process, and things are understandable because of this attitude. We apply a particular standard specific to mathematics to each step of the proof.[15] These general assumptions, presuppositions, and norms themselves are usually not thematized, and, therefore, are not consciously recognized as such by us. However, it is not because they are unknown to us, but because they are so familiar to us. If these assumptions are violated in the text, they are likely to become the objects of our focal consciousness while we remain being engaged in the same

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15. It is not the case that mathematical standards are only more rigorous than the standards in other worlds. The crucial difference is based on different points of interests of each world. Think about formal logic. The point of formal logic is the possibility of formalization or systematization of laws of logic, and sometimes logicians are willing to sacrifice intuitive truth for the possibility of formalization. The best example of such sacrifice is the concept of material implication introduced by Frege. See Frege 1879, English translation pp.13-14.

This concept implies that our logical inference is always valid if our premises are contradictory or that a conditional statement is true if the antecedent is true. Such a concept is by no means a part of what we intuitively understand as conditional statement. Therefore, such concept would be out of the question for a person who don't appreciate the formal point of view. The value of material implication depends on the value of formalization of logic, and it is not self-evident that this value of formalization surpasses the value of sacrificed part of our notion of 'conditional' or 'logical inference'.

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activity of understanding a mathematical proof. In this sense, they belong to our background consciousness in the world of mathematics, and we live in this world when we read a proof of mathematical theorem.

Another fundamental structure of consciousness we are aiming at here is that there is(are) always other world(s) than the one we live in now in the sense of the 'world' specified above. Let's call these other worlds background-worlds. Their otherness consists in the fact that we cannot take objects in these other worlds as the object of our focal consciousness without interrupting the current activity whose objects are the objects in the current world. The world we currently live in can contain many different types of objects at the same time insofar as they can exist in our background consciousness as potential objects of our focal consciousness. For example, if you are reading a mathematical proof while listening to heavy metal rock, a mathematical theorem and a piece of rock music coexist in your current world at the same time. Therefore, what is the boundary or horizon of the current world is relative to the activity we are engaged in and our personal history with that activity. One person's world may look schizophrenic to another, and the latter's world may look too monotonous to the former. The point of the current thesis is that there are always other worlds outside this boundary however rich or complex the current

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world may be. In other words, there are always such objects that we cannot take them as the objects of focal consciousness (e.g. think about them) without interrupting the current activity however comprehensive the current world may be. There cannot be a single all-embracing world. Let's take a look at an example.

Suppose the phone suddenly rings when you are reading the proof of the mathematical theorem. You will matter-of-factly take the receiver and engage yourself in the activity that a person who receives a call is supposed to do. At this moment, your mental activity is based on the set of assumptions and presuppositions that are quite different from those of the world of mathematics. The behavioral standards you expect the caller to meet are quite different from those you expected the author of the proof to keep even if these two persons are as a matter of fact the same. Not only do you take a new set of assumptions and standards at this moment, but you also take a new object, namely a phone conversation, as your new theme, and this new theme is surrounded by new background objects. These objects do not belong to the world of mathematics in the sense that you could not take any of them as the object of focal consciousness without interrupting the activity of understanding a mathematical proof. In a word, the bell transferred you from the world

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of mathematics to a new world, the world of everyday life to which the phone as a device of communication belongs. This world is not created for you at that moment in the sense that those objects and assumptions belonging to this new world are newly learned by you at that moment. You already knew them when you were reading the proof. When you were reading the proof, you already belonged to this world of everyday life, but you didn't live in that world. It was another world when you lived in the world of mathematics.

This fiction illustrates two points: (1) we always belong to many worlds in the sense specified above, (2) there are many worlds at each moment where we don't currently live. We here call the way we retain the objects belonging to currently-unlived-worlds background-world consciousness. When you read the proof, you retained the objects related to the phone conversation as the objects of your background-world consciousness. We retain a great part of the things we know as the objects of this background-world consciousness. They may become the object of our focal consciousness at any moment, but they are distinguished from the objects of background consciousness of the lived-world in that the former cannot occupy the focus of our attention without interrupting our current mental

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activity.[16]

It is true that this new mode of consciousness is similar to what is generally called memory. For one thing, we do not have any actual sense of consciousness for the objects belonging to other worlds as we do for the objects of background consciousness in each current world. The objects in other worlds seem to be related to our focal consciousness as things in our memory are related to the latter. Thus, what is happening to the objects of the every day world when we hear the bell ring seems to be reasonably called 'being recollected'.

However, there is an important sense in the term 'background-world consciousness' that cannot be reduced to the concept of memory in general. For our act of recollection bears quite different characteristics depending on whether this act is performed within the current world or beyond that and only some of them share the feature of other-worldness. In other words, some things are recollected from within the current world, and other things are recollected from other worlds.

For example, if we are puzzled by finding a

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16. It is quite irrelevant whether you, as a matter of fact, can make a phone call while reading a mathematical proof. We can imagine such a person. The point is that there are always objects outside the horizon of the current world. The phone is nothing but an example for illustration; you can substitute it by a visit of FBI agent if you think that the phone is not distant enough from the mathematical world.

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considerable gap in the proof and resolve this puzzlement by remembering a lemma proved fifteen pages back, this recollection is performed within the world of mathematics and the object recollected, namely the old lemma, fits well into the body of organized objects of our background consciousness. Our recollection of this lemma does not interrupt the activity of understanding the proof. On the other hand, if a printed word 'construction' in the proof prompted us to remember that we promised to call a construction company today, this recollection may temporarily interrupt our activity of understanding the proof. In such a case, the recollected promise does not belong to the world of mathematics. The way that the promise has been retained until we remembered it is significantly different from the way the old lemma has been retained until we remembered it, and we call the specific feature of the former, that is shared by the all objects belonging to other worlds, whether they are forgotten in an ordinary sense or not, background-world consciousness.

2.2.4. Subsidiary Consciousness and Skill

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This new concept is based on M. Polanyi's analysis of 'subsidiary awareness'.[17] In a word, this is the mode of consciousness that we have about those parts of our body that are under our control or those tools that we are using while we are engaged in a particular activity. This concept is essential for distinguishing knowledge or cognitive activities in general from skill.

Though we have a certain vivid awareness of those objects in the course of such activities as swimming or hitting a nail with a hammer, this subsidiary consciousness is distinguished from the background consciousness in that the objects of the former are not necessarily able to be the objects of recognition/identification at the focal consciousness while the objects of the background consciousness belong to background only insofar as they are potentially the object of recognition/identification at our focal consciousness. As has been discussed at 2.2.2., the way things become the object of focal consciousness in a perceptual activity is not that they are given as unidentified object, but that they are organized as features of a theme. Thus, the recognition or becoming conscious is always a recognition of something about something. When we express such recognition, the content, namely, what is recognized necessarily takes the form of

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17 See M.Polanyi 1958, pp.55-57,58-59.

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subject-predicate or topic-comment[18]. Let's call this form cognitive structure. Because of this cognitive structure, the content of recognition can have the property of being true or false. What distinguishes subsidiary consciousness from background consciousness is that the former is not necessarily even a potential object of recognition at the focal consciousness.

In a word, we don't necessarily have cognitive relationship with the objects of our subsidiary consciousness while we have such cognitive relationship with the objects of background consciousness of such activities as seeing or hearing. It is this difference

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18. There is no substantial difference of meaning between these two expressions. The essential point is that the content has the structure of 'a certain feature of a certain identifiable object'. The origin of these two expressions is linguistic.

For languages like English in which a certain noun phrase (subject) has a structural relation with the main verb of a sentence, the concept of grammatical subject is easily definable. For example, in many Indo-European languages, the subject can be defined as a noun phrase in accordance with which the verb is conjugated (e.g. French). The concept of SUBJECT-PREDICATE is easily applicable to such a language.

On the other hand, in languages like Japanese or Korean in which there is no particular noun phrase in a sentence that has such a clear morphological correlation with the form of the verb, the noun phrase about which the whole sentence says something is marked by a particle called a topic-marker (e.g. 'wa' in Japanese). Structurally and morphologically speaking, this particle is not different from other markers of semantic roles such as agent or object. The concept of TOPIC-COMMENT is more naturally applicable to such languages than the concept of SUBJECT-PREDICATE.

Thus, the syntactic features of English subject and Japanese topic are different, but they share the same function of indicating what the sentence is about.

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that distinguishes such knowledge(recognition)-related activities as perceiving, thinking, imagining, dreaming from so-called skills such as walking,driving,swimming.

We have a certain consciousness of the parts of our body or tools that are controlled by us in these skill-activities. For example, we cannot swim and control the direction and the speed of swimming without having a vivid sense of our muscles and water. However, we don't usually think that swimming is a cognitive activity just because of such consciousness or awareness. If we think that swimming is not a cognitive activity because it is less complex or intelligent than perception, that seems to miss the point. It doesn't seem to make sense to discuss which is more intelligent or complex, swimming or perception. The reason we think that swimming is not cognitive is not that swimming is not intelligent in the general sense of the word, but that our consciousness of the parts of our body in swimming has a different nature from our consciousness of the objects of perception. Both of these objects are objects of our consciousness, but of different modes of consciousness. The difference consists in the fact that our consciousness of the parts of the body in swimming lacks cognitive structure insofar as it is the consciousness of a swimming, while our focal consciousness of the objects of perception has to have the cognitive structure(theme-features, topic-comments. or subject-

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predicate) insofar as it is the consciousness of perception of something. Because of this lack of cognitive structure, swimming itself has no connection with the recognition of truth, and thus is distinguished from knowledge. Because of the cognitive structure, what is recognized in the actual process of cognitive activities can always be expressed by a proposition "that ....". Therefore, we can say that all kinds of knowledge are related to so called 'knowing that'[19] in one way or another, while skill, which are often expressed as 'knowing how', lacks such a relation. In this respect, knowledge and skill are sharply distinguished though this doesn't imply that the one of them can exist without the other.[20]

2.3 Two Different Views of Knowledge

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19. See Ryle 1949 chapter 2.

20. In this respect, Ryle and the Rylians seem to be wrong. They call the position that " defines intelligence in terms of the apprehension of truths" intellectualism (Ryle 1949 p.27).
Besides the point that they thus miss an important difference rooted in the structure of our consciousness, the concept of 'intelligence' based on the concept of skill seems to be necessarily circular. How, after all, can we decide which activities among the followings are intelligent:frog's catching a fly, baby's walking, bird's singing, trout's swimming, human being's singing, human being's catching a fly?

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As we have examined in 2.1. , Itkonen' s idea that the distinction between theoretical knowledge and atheoretical knowledge consists in the hypotheticality of the former is not tenable insofar as we understand 'know' as 'know the truth of something'. That a theory is a hypothesis means that the truth of it is not yet known; such a theory cannot be the object of theoretical knowledge in the sense of 'know' that implies the recognition of truth.

Here we offer an alternative view about the nature of the distinction between theoretical knowledge and atheoretical knowledge. It is a view that this distinction consists in the fact that theoretical knowledge is grounded or justified while atheoretical knowledge is not grounded. This view necessarily implies that we have groundless knowledge or knowledge without justification. As we will see, the existence of groundless knowledge is not easily acceptable for a dominant view of knowledge in contemporary epistemology, which we call the accepted view or the traditional view. We need an alternative view of knowledge to defend the legitimacy of atheoretical knowledge. Thus, the main work of this section consists in presenting and comparing two radically different views of knowledge. We call one the traditional view, and the other, the Aristotelian view.

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2.3.1. Groundedness of Theoretical Knowledge and Ungroundedness of Atheoretical Knowledge

When we have scientific knowledge, which is the most typical case of theoretical knowledge, our knowledge has a ground or is grounded in the sense specified in the following paragraph, and theoretical knowledge is grounded in this sense.

When we say someone has scientific knowledge about something, say the gene, in the sense that he knows the truth of theories about the gene, we mean more than that he can recite the contents of these theories whenever he wants. If he only memorizes the whole contents of a chapter of a textbook of molecular biology , his relationship with those theories is very close to an actor's relationship with the lines of Hamlet and he 'knows' theories about the gene only in the sense that an actor 'knows' his lines of Hamlet: to 'know' in this sense doesn't require a knower to know whether a theory or a story is true or, if it is, why it is true. Even if he doesn't just memorize the contents of theories, but believes them, his believing them or committing himself to the truth of them itself doesn't constitute theoretical knowledge, either, if he doesn't know why these theories are true. For example, a mathematician can strongly believe that Fermat's last

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theorem is true, and commits himself to a big project of proving it; in this case the mathematician doesn't know Fermat's last theorem as theoretical knowledge, and it is why he embarks on the big project of proving it. Thus, to have theoretical knowledge, one needs to know the reason why the theory is true. However, this reason has to be more than a reason to believe its truth rather than its falsity. In a sense, we always have a reason to believe the truth of a theory over its falsity or its falsity over its truth[21], whatever type of cognitive situation we are in, but such a reason itself is not sufficient for us to have theoretical knowledge. Practicing scientists very often entertain a certain hypothesis and have a reason to believe this hypothesis over others; this doesn't make them know that this hypothesis is true. At such a stage of investigation, scientists may hold a promising hypothesis, but they still don't have theoretical knowledge. To have theoretical knowledge, they need not only a reason to believe one thing over another, but the reason that grounds them on the truth. In other words, in order to have theoretical knowledge, we have to know not only why it is more reasonable to believe a theory than not, but also why the theory is true. In this sense, theoretical knowledge

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21. We call this reason doxastic justification and the reason that grounds us to the truth epistemic justification. For more detailed discussion about them, see 2.4.1.

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has to be grounded. On the other hand, if we have theoretical knowledge, we can justify our knowledge claim by presenting the reason why the theory is true. In this sense, theoretical knowledge is justifiable.[22]

The view we are offering here is that what we have designated as atheoretical knowledge can be characterized as ungrounded knowledge in the sense that in the case of atheoretical knowledge we can and do know that certain things are true without knowing why they are true. In other words, we assert that 'atheoretical knowledge' is not grounded in the sense of ground specified above, but,nevertheless, is an instance of knowledge in the sense of knowing the truth of something. To establish the minimum plausibility of this view, we have to show (1) 'atheoretical knowledge' is knowledge or cognitive in the sense specified in 2.2.4, and (2) 'atheoretical knowledge' is not grounded.

Though 'atheoretical knowledge' includes cases of knowledge of laws[23] such as our knowledge of axioms or principles of

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22. Though being (epistemicaly) justified and being grounded are not synonymous, they are interchangeable in many contexts, and we treat them as more or less equivalent unless such practice causes a confusion.

23. Knowledge of a law consists in knowing that a certain universal statement is true, and knowledge of a category consists in being able to judge whether a given specimen belongs to that category or not. See 2.1. note 1.

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logic,arithmetic, and geometry, the most common cases are knowledge of such familiar categories as 'man','woman','water','wine','vegetable', etc. Many cases of our 'atheoretical knowledge' of those categories show a similarity to skills. For example, if you are a professional wine taster, you have 'atheoretical knowledge' of such categories as 'Bordeaux', or 'Burgundy'. You can discriminate many types of wine that the ordinary wine drinker cannot distinguish. Such an ability is called connoisseurship.[24] Connoisseurship of a wine taster is similar to skills of craftsmen in the way they are mastered. Both of them need time and experience to be mastered. Nevertheless, all kinds of 'atheoretical knowledge' of categories have a distinctively cognitive aspect that skills generally don't have, and we can call the former knowledge in the same sense that we call scientific knowledge knowledge. In a word, this cognitive aspect consists in the fact that we in our background consciousness[25] make potential judgments in each manifestation of knowledge of a category in the sense that we can make these potential judgments the object of our focal consciousness. The manifestation of a skill, on the other hand, is accompanied by subsidiary consciousness in which we generally don't make even potential judgments. To

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24. See Polanyi 1958 pp.54-55.

25. See 2.2.2. and 2.2.4.

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make this distinction clear, we need an example.

A common feature of our knowledge of familiar categories is that we usually don't make any explicit judgment about whether a given specimen belongs to a category even when our knowledge of the category is manifested. Suppose I drink water during my dinner. Naturally I don't make any explicit judgment when I take a sip of water during the dinner, but this doesn't mean that I have no awareness of this liquid, or that I forget what water is during the dinner, or that my ability to tell water from other liquid doesn't work. When I drink water this way, I know that this liquid is water in my background consciousness and my potential judgment that this is water can be actualized at my focal consciousness whenever I like. If you ask me,"What are you drinking?", I would immediately answer,"Water" without making a judgment anew or recognizing what I have forgotten; I only actualize a potential judgment.

On the other hand, we don't have such potential judgments in the manifestation of a skill. A skill is manifested in a performance, and many objects are involved in the performance of a skill, such as various parts of our body or tools. Skill is similar to atheoretical knowledge of a category in that we have a certain kind of consciousness of these objects without making them the object of focal consciousness. When I walk, I have some

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awareness of my feet (subsidiary consciousness) without making them the object of my focal consciousness; my experience of walking is similar to that of drinking water during dinner in this aspect. However, the crucial difference between them is that these are not even potential judgments in my subsidiary consciousness. Of course, I can shift my focal consciousness to my feet when I walk and make them the object of my focal consciousness, but there is nothing to be actualized into a form of an explicit judgment in subsidiary consciousness of my feet when I walk. When I drink water, I, in a very primitive way, feel or am aware that this is water; though this awareness is very vague, it already has the structure of subject-predicate or topic-comment (cognitive) structure, namely it is an awareness of a certain feature (being water) of a certain identifiable thing (this liquid). This vaguely comprehended content is actualized when I shift the focus of attention to this glass of water. On the other hand, when I walk, I have some feeling or awareness of my feet (subsidiary consciousness);without such awareness I cannot control my feet e.g., I couldn't walk on a rough surface. However, what I am aware of doesn't have any cognitive structure even in a most primitive way. My awareness of feet is not the awareness of a certain feature of a certain object, but the awareness of how my feet and the ground fit together or push each other. This is an

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awareness of a very complex feedback between my feet and the ground and cannot be characterized by subject-predicate or topic-predicate structure. This awareness is not empty, and has 'content' in this sense, but this 'content' is not cognitive content; we cannot talk about the truth or falsity of this awareness. A manifestation of a skill, namely a performance, usually doesn't have a connection with the actually recognition of the truth of something unless another cognitive activity is added to that skill. For a process becomes a manifestation of a skill not by its connection with a recognition of the truth of something, but by its connection with the achievement of a certain function. On the other hand, a process becomes a manifestation of knowledge by its connection with an actual recognition of the truth of something (a content with subject-predicate or topic-comment structure). My awareness of something is a manifestation of knowledge only insofar as it can be actualized into an explicit judgment whenever I like.

Thus, we conclude that our 'atheoretical knowledge' of familiar categories is knowledge in the sense of knowing the truth of something, and it is not different from our scientific knowledge in this respect.

Therefore, the question of groundedness can be legitimately asked about atheoretical knowledge as the question whether

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these judgments are true or not, and why they are, if they are. Is my judgment about a particular specimen of water grounded, namely do I know why my judgment is true? Is the groundedness essential for my atheoretical knowledge of water to be knowledge? Do I have knowledge when I don't know why this glass of water is water? can we justify our judgment? do we have to justify our judgment to know that the specimen is water?

What answer can we give when asked why the given glass of water is water? Of course the mere fact that this specimen is actually water cannot be the ground any more than the mere fact that a specimen of wine happens to be Bordeaux cannot justify my claim of knowledge that this is Bordeau when I am just guessing.

One thing we can think of as the ground is the <u>similarity</u> between the present specimen and many past specimens of water. If we appeal to this similarity relationship in the justification of our knowledge, our justification is a justification by <u>induction</u>. However plausible it may look at first glance, this similarity relation is, at best, grossly insufficient for the ground of my judgment for two reasons.

First, it is highly doubtful whether I know that this specimen is similar to the past specimens of water <u>independently of</u> or <u>without</u> simply knowing that this specimen is water. In other words, it is doubtful whether

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we know more certainly that this specimen is similar to the past specimens of water than we simply know that this specimen is water. This independence of the ground from the grounded seems to be essential for the grounding of knowledge. For example, in the case of theoretical knowledge, (1) we know the ground independently of the grounded, and (2) we know the ground at least as certainly as the grounded. If the ground for knowledge doesn't satisfy these conditions, the grounding or the justification of knowledge becomes very difficult to distinguish from quibbling whose essence is that the grounding is 'made up' not to show the correctness of the grounded but only to evade the criticism. It is at least questionable that the similarity of the present specimen with the past ones satisfies these conditions of independence when we know that something is water in our every day life, namely when we know that as a manifestation of atheoretical knowledge.

Secondly, the truth of my judgment about the water-hood of the present specimen cannot simply consist in the similarity between the present specimen and the past ones, and our having atheoretical knowledge of a certain category requires more than our ability to identify particular recurring features.[26] Thus, even if we were to grant, for

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26. This point, in a word, amounts to the necessary involvement of universals in knowledge. Of course, it is age old problem, but for an example of a discussion about

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the sake of argument, that I actually recognize the similarity between the present specimen with the past ones, this alone cannot be the ground for the truth of my judgment that it is water. This point becomes clear if we think of a case in which we can identify features of specimens without knowing what they are.

It sometimes happen, at least to me, that we repeatedly hear a beautiful but complex melody on many occasions without knowing what that melody is, e.g. the second theme of the second movement of the "New World" symphony of Dvořák. In such cases, we are frustrated because we cannot buy the record of this piece of music to listen to it when we want to since we don't know what that melody is, though we can clearly recognize it when we happen to hear it. Our relationship with such a melody is not one of pure ignorance, but it is not the knowledge of a category, either, since we cannot relate the recognized features of a specimen to the universal, e.g. the category of 'the second theme of the second movement of the "New World" symphony of Dvořák'. We have such an intermediary relationship with many categories in a field in which we are interested without knowing much about it.

This example shows that our having knowledge of a category, namely our knowing what something is, requires

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this problem in relatively recent epistemological context, see Chisholm 1982 pp.141-142, and Reihenbach quoted there.

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not only that we can recognize certain recurrent features of a given specimen, but that we can locate that specimen in our 'system' of categories by recognizing that specimen's belonging to a certain category. If we cannot do the latter, we lack the articulation necessary to make a true judgment ,"This is X", and our 'knowledge' in such case doesn't constitute knowledge in the sense we are concerned with since it doesn't lead us to a true judgment.

This means that the recognised similarity between the present specimen with the past ones itself cannot be the ground for my judgment that this specimen is water. We need to recognize not only that this specimen is similar with the past ones but also that these past specimens are water, if we are to ground the present judgment through similarity. This means that the grounding through similarity or induction of our knowledge of a category can be completed only when we already possess the knowledge to be grounded, namely knowledge of the target category, and have successfully applied this category to other specimens in the past. Thus, we have to ground our past knowledge of the category 'water' to ground the present one. Such retro-grounding or justification can be completed only when there is an identifiable initial situation in which we first learned that category. Otherwise we just have to refer back to another manifestation of our knowledge of the target category to ground that same knowledge, which

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doesn't seem to constitute a legitimate ground in any sense of the word. Sometimes, of course, we can identify such an initial situation of learning categories. For example, if I learned that the melody I was attracted to is the second theme of the second movement of the "New World" symphony of Dvorak from a friend with firm knowledge of classical music, I can refer to that initial situation to justify my judgment that this melody is Dvorak's. However, for many cases of our atheoretical knowledge of categories as well as of laws, we cannot find such an initial situation, not because we forget when we learned a category, e.g. the category of 'water', or a law, e.g. the law of non-contradiction, but because there are no single situations or a certain set of situations that we can call our initial situation of learning.

Thus the grounding or justification of knowledge through similarity and induction doesn't seem to generally applicable to our atheoretical knowledge. Of course, we may be able to think about another kind of grounding for our atheoretical knowledge, and there is nothing to deny this possibility. Nevertheless, it is, at best, much more difficult or almost impossible to give the satisfactory ground for the judgment based on our atheoretical knowledge than it is for judgments based on our theoretical knowledge. This difference between <u>theoretical knowledge</u> and <u>atheoretical knowledge</u> with respect to groundedness

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that has emerged in our discussion seems to be prominent enough to take it as the initial assumption of our discussion that the essential difference between these two modes of knowledge is that the former is grounded while the latter is ungrounded. Let's make the sense of this essential difference clearer.

What we can gather from our discussion so far is not only that we often cannot find the ground for our atheoretical knowledge as satisfactory as the one we can give our theoretical knowledge, but also that we don't seem to have to find such ground for atheoretical knowledge in the following sense. When we claim knowledge of a scientific theory without being able to find any ground or the initial situation of learning, we can hardly consider that we know that theory in the sense of knowing its truth. The reason is that scientific theories that are the most typical objects of our theoretical knowledge have such a nature that we cannot know their truth without learning them in a certain initial learning situation where we also learn why they are true, whether we continuously remember such an initial learning situation or not. In other words, to be learned through an initial learning situation with the knowledge of the ground is essential for our knowledge of scientific theories to be knowledge. On the other hand, for my knowledge of such familiar categories as 'water' or of such basic and familiar laws like those of arithmetic,

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geometry, or logic, it is quite irrelevant whether we actually have such an initial learning situation in which we learned the ground of our knowledge or whether we can ground the truth of our judgments in any fashion for our knowledge to be knowledge.

Thus it seems that we not only actually can ground our theoretical knowledge but also that we have to do so if our theoretical knowledge is to be knowledge, while we not only cannot give any satisfactory ground for many instances of atheoretical knowledge, but also don't have to give or have any ground for our atheoretical knowledge to be knowledge. Thus we can move from the delineation of the distinction between theoretical knowledge and atheoretical knowledge by examples to the delineation of the same distinction through the feature of groundedness as the distinctive and essential feature, namely we can define theoretical knowledge as grounded knowledge and atheoretical knowledge as ungrounded knowledge. Of course, this move may turn out to be incorrect and the distinction between these modes of knowledge may turn out to be groundless, but this delineation gives us, at least, a firmer starting point for our discussion about the very nature of knowledge.

2.3.2. The Traditional View of Knowledge: Knowledge as a Representation

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The distinction between theoretical knowledge and atheoretical knowledge based on the feature of groundedness itself seems to capture an important aspect of the reality concerning knowledge. However, once we put it in the wider context of the general theory of knowledge, this distinction causes a serious problem. One important consequence of this definition of the distinction is that we actually have ungrounded knowledge or knowledge without justification. There is, on the other hand, a very influential and widely accepted view about knowledge that is directly contradicted by this consequence. Let's call this view the accepted view in modern epistemology. According to this view, knowledge is defined as true justified belief, and any type of knowledge has to be grounded and justifiable in one way or another to be knowledge.

Thus, if one takes this view seriously, what we specify as atheoretical knowledge cannot be considered as knowledge at all since it is not grounded. On the other hand, if 'atheoretical knowledge' is really knowledge, ungroundedness cannot be its distinctive feature. In either way, this accepted view negates the very heart of the view about atheoretical knowledge we discussed above.

If only we recollect our observations about the nature of atheoretical knowledge, both of these consequences seem

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to be wrong or against our intuition, and so is the accepted view itself. The accepted view seems to do violence to the reality of knowledge. However, this accepted view becomes more plausible when we think about the general feature of knowledge per se. Suppose that both theoretical knowledge and atheoretical knowledge are the genuine cases of knowledge in the sense of knowing truth as we assumed. Then the question that naturally arises is: what is the general feature that distinguishes knowledge from non-knowledge such as memory without knowledge of truth, conjecture, or opinion, in both types of knowledge. We cannot waive this problem by saying that we just happen to use the same term 'knowledge' for theoretical knowledge and atheoretical knowledge and there is no essence of knowledge common to them or that there is at most a vague family resemblance between them. For,in both types of knowledge, we compared the cases of knowledge with the similar cases of non-knowledge such as memory, conjecture, guess, or opinion , and the point of comparison is the same in both types, namely that we know that our judgments are true in the cases of knowledge while we don't know that our judgments are true in the cases of non-knowledge even if they happen to be true. Thus in both types of knowledge, the concept of 'knowledge' is used with the same core sense of 'knowing the truth'. Thus the question arising at the beginning of this section is the authentic question about

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the essence of this concept of knowing the truth, i.e. the question about what makes something knowledge in the proper sense. The accepted view gives us an answer or , at least, a clue to the answer to this most fundamental question of epistemology. The answer is that to know the truth of something is to be grounded, or to have a grounded or justified belief. Whatever this 'grounding' or 'justification' means, we , at least, have concrete examples of this 'grounding' in our scientific knowledge. Thus, the accepted view gives us a firm and concrete starting point for the general theory of knowledge.

Thus we have here a sharp conflict of two views about the nature of knowledge: one is the authenticity of atheoretical knowledge as groundless knowledge and the other is groundedness as the essential feature of knowledge in general. In the rest of this chapter, we will argue to show how this conflict should be resolved in favor of the former view. For that purpose, we have to lay down a sketch of the alternative view about the general nature of knowledge. However, before moving to this sketch, we have to take a closer look at the accepted view.

The accepted view in modern epistemology consists of two components, namely (1) that knowledge is a kind of belief which, in its turn, is a species of cognitive state, and (2) that a belief has to be not only true but also

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justified or grounded to be an instance of knowledge. Let's call the first element beliefism and the second justificationism. That both of them are not only widely or almost unanimously accepted in the contemporary Anglo-American tradition of epistemology but also are taken as the common ground or framework in which the epistemology takes various shapes, seems almost unquestionable. We can feel this sense of common acceptance from the following passage by Laurence BonJour, which we can say is a typical beginning of an article or a book in contemporary epistemology.

> As is notorious, the word "know" and "knowledge" have a wide variety of uses which fall under no very neat or obvious taxonomy. My primary concern here, however, like that of most of the philosophical tradition, is propositional knowledge: the knowledge that something is the case, that a certain proposition is true. What is it for someone to know something in this philosophically central sense? What conditions must be satisfied in order for a cognitive state to constitute a genuine instance of propositional knowledge? Despite a great deal of recent challenge and controversy, the following quite venerable answer to these questions is, I believe, at least approximately correct. For a person A to know that P, where P is some propositions, three conditions must be satisfied:
>
> (1) A must believe confidently t that P,
> (2) P must be true, and
> (3) A's belief that P must be adequately justified.
>
> (L. BonJour 1985, pp.3-4.)

However, as this passage indicates, the accepted view isn't without problems of its own. That the concept of

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'justification' as an essential feature of knowledge has a serious difficulty[27] has been recognized since it was pointed out by an epoch-making paper of E. Gettier, and it has been one of the most central issues in contemporary epistemology how to modify the accepted view to get a 'correct definition of knowledge'.[28] As a result, various views about how to modify or enrich the original concept of 'justification' have been proposed so that a kind of chasm has emerged within epistemology that threatens the unity of the field in the sense that it is no longer evident, if it ever was, that everyone in epistemology talks about the

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27. In a word, this difficulty consists in the fact that a belief's being true and its' being justified by a cognitive agent may sometimes have no internal connection. Thus, we can imagine many cases in which a cognitive agent's belief is true and he has adequate justification for it though this justification is in fact not the ground why that belief is actually true and the agent's belief cannot be regarded as knowledge any more than a lucky guess can be regarded as knowledge. It is, of course, Gettier who first showed this deficiency of the accepted view by constructing such examples. See Gettier 1963.

28. We don't get into the detail here of the huge literature on the Gettier problem. For an introductory bibliography of this literature, see Moser 1986. Whether the Gettier problem is taken as an explicit theme by an epistemologist or not, this problem and possible solutions of it have shaped the history of Anglo-American epistemology since 1963. For those of us who haven't experienced this historical period of contemporary epistemology, such witnesses as R. Nozick 1981, pp.167-171, R. Chisholm 1982, pp.43-49, and Alan H. Goldman 1987 in S. Luper-Foy (ed.) 1987 p.182, among others, can give a sense of the importance of the Gettier problem in Anglo-American epistemology during this period.

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same concept of 'knowledge'.[29]

Despite such diversification in contemporary epistemology, it seems to be correct to say that the two elements of the accepted views still function as the basic premises and the common ground for the contemporary Anglo-American tradition of epistemology with very few but brilliant exceptions.[30]

First, beliefism itself has been hardly challenged or considered as needing any modification in the discussions concerning the Gettier problem; rather it has almost been taken for granted.[31] About the question of what belief is,

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29. The most fundamental diversification that has thus emerged is the one between 'internalism' and 'externalism'. As for the essential difference of these two positions, see 3.8.1. and 3.9.1. As for the sense of the 'lost unity' of epistemology, see BonJour 1985 p.36 and S. Luper-Foy's introduction to the special issue of Synthese March 1988 devoted to the 'problem' of 'internalism', ibid. 74 p.283.

30. I mean J.L.Austin. There are, actually, very few philosophers in this tradition who explicitly argue against both beliefism and justificationism. The most prominent one among such exceptions is J.L.Austin. That he doesn't share these two premises has nothing to do with Gettier's criticism of the accepted view in 1963 since he had held quite different view of knowledge than the accepted one long before Gettier's paper. He argues against beliefism in "Other Minds" (1946) (see Austin 1979 pp.79,96,99-100), and against justificationism in Sense and Sensibilia (1962) , see Austin 1962 p.124. Though his influence is not directly represented in our present work, he is one of the most important sources of inspiration for us.

31. As for this taken-for-grantedness, see the following view of one of leading epistemologists in this tradition, E. Sosa:

Not everything believed is known but nothing can be

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there is curiously little discussion in the contemporary epistemology.[32] About whether belief is a temporal and episodic state like sensations or a disposition-like enduring state[33] or it can take two different forms, there is very little discussion and even less agreement about this problem in the contemporary epistemology.[34]

Nevertheless, there seems to exist a kernel view about knowledge behind contemporary beliefism that is shared not only by virtually all contemporary epistemologists who accept beliefism but also by many seventeenth century philosophers belonging to different traditions. In short, this is the idea that we have to 'possess' an 'imago' or

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> known without being at least believed (or accepted, presumed, taken for granted, or the like) in some broad sense. What additional requirements must a belief fill in order to be knowledge? There are surely at least the following two: (a) it must be true, and (b) it must be justified...
> (E.Sosa 1980, in Moser 1986, p.145.)

32. By contrast, the problem of belief is extensively discussed in another branch of contemporary Anglo-American philosophy called philosophy of mind with the emphasis on the problem of content or intentionality. For an overview of the discussion about the nature of belief, see C.McGinn 1988. We discuss the problem of intentionality at 3.3.5.

33. Of course, the best known example of dispositional view of belief is Ryle's. See Ryle 1949 pp.133-134. Episodic or static view of belief is virtually assumed by so-called representational theory of mind. See 3.3.5.

34. Of course, it is not the case for earlier generation of philosophers in this tradition such as Russell or Peirce. They discuss the problems of knowledge and belief together. We now seem to have a clear division of labor between epistemology and philosophy of mind.

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representation of the reality as its substitute to know the latter and that to know something is nothing but to possess a 'correct' representation that corresponds to the reality. This view may fairly be called representationism. Though the history of this representationism is no doubt much older and we cannot discuss it in any details, we may well locate the direct origin of this representationism in discussions about 'ideas' in the seventeenth century by various philosophers[35]. For seventeenth century representationism, 'idea' is the common term for representation. That representationism can be shared by various philosophical schools is already manifested by the history of seventeenth century philosophy. Whether it is considered as exclusively having external origins or as having internal origins, the fundamental idea that knowing something is having a correct kind of representation is common for so-called 'empiricism' and 'rationalism'. From such a historical perspective, we can say that the beliefism of contemporary Anglo-American epistemology is one species of this representationism, the one with a so-called empiricist tendency. In other words, 'belief' is an

35. The direct source of this seventeenth century controversy on 'ideas', of course, is Descartes' concept of 'clear and distinct idea as the mark of self-evident knowledge' first formulated in Descartes 1637. Concerning the nature, scope, and function of 'ideas', philosophers after him were extensively engaged in the 'debate'. For a few but prominent examples, see Spinoza 1677 Part V, Leibniz 1684, and Locke 1689 Book VI chapter 1.

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interpretation of the concept of 'representation' by contemporary Anglo-American tradition of philosophy.[36]

For our present discussion, essential point is that the beliefism of contemporary epistemology is one version of representationism. One of the most important assumptions of representationism is that not all representations we can possess count as knowledge and that there is an identifiable feature of representation by virtue of which a representation becomes knowledge and is distinguished from non-knowledge. Thus once beliefism is accepted, it is almost a logical consequence that a belief has to possess a certain identifiable feature to be knowledge, whether we call the possession of this feature groundedness or justifiedness. This is the content of what we call here <u>justificationism</u>, and the justificationism in this sense seems to be shared by all versions of contemporary epistemology insofar as they accept <u>beliefism</u>.[37]

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36. For a short history of representationism in modern American philosophy, see R.Chisholm "Theory of Knowledge in America" in Chisholm 1982, especially pp.109-113,167-193.

37. In this respect, Alvin Goldman's attitude to the concept of 'justification' is illuminating. When he first proposed externalism as one solution to the Gettier problem in Alvin Goldman 1967, he explicitly denied the relevance of justification, but afterward he resumed holding the necessity of justification. In this transition, we don't have to see any 'conversion' since what he initially negated is a narrowly construed concept of 'justification' according to 'Cartesianism', and what he recognized later is the general concept of justification that is a necessary

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Thus we can conclude that justificationism as well as beliefism is shared by majority of contemporary epistemologists of different trends[38], probably with Austinians and other few philosophers being the

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consequence of beliefism which he has consistently endorsed. See the following passage:

> In previous papers on knowledge, I have denied that justification is necessary for knowing, but there I had in mind "Cartesian" accounts of justification. On the account of justified belief suggested here, it is necessary for knowing, and closely related to it. (Goldman 1979 in Moser 1986 p.171.)

The same thought is expressed by another externalist.

> The standard account of knowledge is that knowledge is some sort of justified, true belief. This account is often presented as a rival to causal theories of knowledge. Causal theorists of knowledge believe that knowledge is reliably produced true belief. This, we are told, leaves justification out of the picture.
>
> I do not believe that this way of presenting the causal theory of knowledge is correct. Causal theorists of knowledge do not deny that knowledge is some sort of justified true belief; they merely have a nonstandard account of what it is for a belief to be justified.
>
> (H.Kornblith 1980 in H.Kornblith (ed.) 1987, p.116; the underline is A.K's.)

38. It is not difficult to document this by examples.
As for the examples of 'internalism' see BonJour 1985 pp.3-5, Chisholm 1982 p.43.
As for the examples of 'externalism', see R.Nozick 1981 pp.169-170, Alvin Goldman 1976 in Steven Davis (ed) p.174, H.Kornblith 1980 in H.Kornblith (ed.) 1987 p.116, F. Dretske 1981 pp.85-86.
As for the examples of philosopher in between, see W.Alston 1985 in Moser (ed.) 1986 p.23, and E.Sosa 1980 ibid. p.145.

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exceptions.[39]

As noted above, this justificationism of contemporary epistemology is sharply contradicted with the concept of atheoretical knowledge as ungrounded knowledge. Against this tradition of epistemology, however, we cannot argue that it is wrong because it does not correctly recognize the existence and the nature of an important class of knowledge, namely atheoretical knowledge. For the point of this tradition is that what we take to be ungrounded knowledge has to be either non-knowledge or actually grounded, and we cannot argue against such an accusation without begging the very question. Thus we have to make the following two moves to defend the concept of atheoretical knowledge as ungrounded knowledge against this tradition of epistemology, whose root is representationism. (1) To show that the accepted view of knowledge has internal problems as an explication of the reality we call 'knowledge', (2) to offer an alternative view about the nature of knowledge. (1) will be done in the next chapter, and (2) will be done from 2.3.3 through 2.7.

2.3.3. Aristotelian View of Knowledge -Knowledge as an Activity-

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39. Among them is counted N.Chomsky after the mid 1970's. For Chomsky's concept of knowledge and its historical change, see 5.1.3.

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Here we offer an alternative view of knowledge that may well be called Aristotelian. Before fully developing this view, let us point out and investigate a couple of difficulties in the accepted view that urge us to look for an alternative. They will tell us why 'Aristotelian view' can be a promising alternative.

There is one 'strange' phenomenon about knowing if we take the accepted view of knowledge seriously, and this phenomenon gives us a clue to the alternative view of knowledge. That is the phenomenon that we don't even try to ground the knowledge we have already acquired except for pedagogical purpose. This is 'strange' in the following sense. We can say that the essence of having a skill is the ability to do something in that the actual exercise of this ability is both the criterion of a person's having this skill and the goal of acquiring this skill. Thus, the ability to actually drive a car whenever we like is both the criterion and the goal of having the skill of driving. Such a relationship between the 'essence' and the process of acquisition can be observed not only in the case of skill but also in the case of genuine knowledge with the feature of the recognition of truth. Think about the knowledge of architecture as possessed by an architect. This knowledge can not be reduced to any skill without the element of judgment since for an architect to have

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knowledge of architecture means to be able to make proper judgments to design a building. The essence of having architectural knowledge, we may say, is the possession of the ability to design a building, including the ability to make proper architectural judgments, in that the actual exercise of this ability, namely actually designing a building, is both the criterion and the goal of having acquired this knowledge. Thus we can say that a person has the knowledge of architecture only when he can actually design a real building, and we can also say that he has studied architecture in order to design a building.

According to the accepted view of knowledge, the feature of being grounded is regarded as the essence of knowledge in that it is this feature that makes something knowledge and it is the ability of grounding or justifying that distinguishes a knower form a non-knower. Thus, the process of acquiring knowledge, according to the accepted view, can be regarded as the teleological process directed to the possession of the ability to justify. However, the actual knowers' attitude toward the object of knowledge doesn't support the idea that the feature of groundedness is the essence of knowledge in this sense. A mathematician who has discovered and proved a theorem won't prove it again except for the purpose of education, a student of mathematics who has learned how calculus is theoretically grounded won't prove its basic theorems again

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unless he teaches it to other students or demonstrate his knowledge in an examination. When we know that our specimen is water, we won't even try to ground it, namely we won't bother to explain why it is water.

In general, knowers won't even try to ground or justify their judgments when they know that they are correct, they won't try to use their ability to ground their knowledge when they have knowledge. If groundedness is the essence of knowledge, and possession of the ability to ground is the essence of knowing something, this knower's indifference to the actual use of this ability of grounding seems, at least, strange, though not contradictory.

From another point of view, however, this knower's indifference to the actual grounding of his knowledge seems to indicate something essential for knowledge in general since this attitude is common for the knowers of both theoretical knowledge and atheoretical knowledge. Putting aside pedagogical situations, it is only when we don't know the truth yet that we try to ground our judgments, and acquisition of knowledge is marked by our indifference to the actual grounding. We don't try to prove what we know after we have learned it. Let's call this indifference the knowledge attitude. It is, of course, clear that having knowledge attitude itself doesn't mean having knowledge. A person who is so ignorant that he cannot even have a

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question or a person who so dogmatically believes something may have a perfect knowledge attitude without knowledge. Our point here is that knowledge implies knowledge attitude though the reverse doesn't hold, and that this implication is not congruent with the idea that the essence or goal of knowledge is groundedness. The correct account of the nature of knowledge seems to have to 'explain' why we become indifferent to actual grounding after we have acquired knowledge.

There is, moreover, another defect of the accepted view of knowledge that is already implicitly suggested on our discussion above. The adequate account of the nature of knowledge seems to have to incorporate the distinction and the internal relationship between the possession of the ability to make correct judgments and the actual exercise of this ability. The accepted view doesn't seem to have conceptual resources rich enough to cope with this problem since it seems to take knowledge as an isolated atomic state. Think about the case of so-called perceptual knowledge, which might seem to be the remotest from such an distinction. At the moment of actual and correct perception, say of the fact that there are three people in the audience for our lecture when it starts, we possess a certain so-called mental state which is temporary. This mental state is characterized by the mode of consciousness that accompanies it. This fact may be grasped as the

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object of focal consciousness and I make an explicit judgment, or it may be noticed only as an object of background consciousness if my attention is directed to other thing. In any case, this metal state will soon give its place to another as I proceed the lecture. However, our having perceptual knowledge of this fact cannot be identified with the possession of this temporary perceptual state since we won't lose this knowledge even after this perceptual state has disappeared and we have shifted our attention from this fact to another theme. If we are asked about this fact the next day ("How many people attended your lecture yesterday?), we will certainly be able to give an answer, but we don't acquire this knowledge again or recollect the perceptual state of the day before and make a judgment over this recollection when we answer. We have continuously possessed this perceptual knowledge since the moment of actual perception. When we answer the question, we don't acquire new knowledge, but we only <u>actualize</u> or <u>manifest</u> the knowledge we have already possessed. This distinction between <u>the possession of knowledge</u> and <u>its actualization</u> or <u>its manifestation</u> is essential even for the adequate description of so-called perceptual knowledge, and it is not hard to see that this distinction is one variation of age old Aristotelian categories of <u>potentiality</u> and <u>actuality</u>. In other words, the phenomena of knowledge seem to have an essentially dynamic aspect.

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Unless our conceptual resource concerning 'knowledge' can express this dynamic aspect, we have to say that a mathematician doesn't know mathematics when he plays baseball without thinking about mathematical things at all.[40] However, the accepted view of knowledge doesn't seem to have enough conceptual resource to deal with this distinction since its basic category belief itself has no internal connection with this process of actualization. It is not even clear whether there is a distinction between a belief and its manifestation or not. Of course, there is nothing contradictory in this lack of dynamic concepts in the accepted view, but this insufficiency, at least, suggests an inherent inadequacy of the accepted view as an account of knowledge, and therefore that there is something wrong with this view.

This consideration indicates that the adequate account of knowledge has to employ the conceptual resources of potentiality (dynamis[41]) and actuality (entelecheia or energeia) that Aristotle developed in such places as

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40. This argument was already made by Aristotle when he criticizes the Megaric school in Metaphysics Book IX-3.

41. Throughout our work, we use the following four Greek words as our technical terms, whose exact meanings are defined in this section: dynamis, entelecheia, energeia, and kinesis. We also quote some conjugated forms of these nouns from Aristotle's texts in this section in the interpretation of his texts. In all of these cases, we ignore breathing marks, accents, iota-subscripts, and the distinctions between epsilon and eta, and omicron and omega, from a purely technical reason.

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Metaphysics Book IX.[42] Moreover, Aristotle in those texts is very explicit in stating that knowledge is an important example of this dynamic concept. Therefore, there is certainly a coherent view that may well be called 'Aristotelian view of knowledge'. Thus, the strategy to adopt Aristotelian dynamic concepts as the fundamental category in our analysis of the phenomena of knowledge has a quite good prospect. In the rest of this section, we develop this Aristotelian view of knowledge further to specify in what sense we are Aristotelian.

In general, we have to deal with three different stages of a cognitive agent that characterize the nature of knowledge through their mutual relationship, whatever the kind or the object of knowledge is, if we are to account for the phenomena of knowledge. They are (1) the state of not having knowledge (State I), (2) the state of the possession of knowledge (State II), and (3) the actualization or the manifestation of the possessed knowledge (State III).[43] Strictly speaking, only States I

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42. Our main textual sources in the following discussion is Metaphysics Book IX and De Anima Book II-5. For the English translation, we use Trendennick 1933 (Metaphysics) and Hett 1936 (De Anima).

43. In De Anima II-5, Aristotle enumerate these three stages of knowledge. Here he calls the State I, II potentiality (dynamis) and the State III actuality(entelecheia).

One sense of "instructed' is that in which we might

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and II qualify as states, and State III has to be regarded as a process that can exist only through a certain duration. For State III is the process in which we manifest our knowledge through the act of judging or grounding(in the case of a pedagogical situation) and this is the process of activity. This point will be discussed further below.

The point of the Aristotelian view of knowledge expressed in these texts is to see these stages of knowledge as species of <u>generic concepts about the dynamic process in general</u> under which such diverse cases are included as skill, art, knowledge, perception, and disposition. Thus, to effectively employ the Aristotelian concept of knowledge, we have to specify, (1) what are the generic features of these three dynamic stages, and (2) what is the specific feature of knowledge that distinguishes it from other dynamic processes.

The best way to properly characterize these three

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call a man instructed because he is one of a class of instructed persons who have knowledge: but there is another sense in which we call instructed a person who knows (say) grammar. Each of these two has capacity , but in a different sense: the former , because the class to which he belongs, e.e., his <u>matter</u>, is of a certain kind, the latter because he is capable of exercising his knowledge whenever he likes, provided that external causes do not prevent him. But there is a third kind of instructed person- the man who is already exercising his knowledge: his is in actuality (entelecheia) instructed and in the strict sense knows (e.g.) this particular A. (417a: 25-30.)

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stages in a dynamic process is to focus on two different kinds of dynamic processes that Aristotle distinguishes in Metaphysics Book IX-6 rather than to directly characterize each of these three stages. For there is a seeming 'confusion' or 'ambiguity' in Aristotle's terminology about these three stages that may look discouraging for our systematic employment of such central concepts as potentiality and actuality. We think that this 'confusion' is clarified if we think these stages with respect to the nature of two kinds of dynamic processes, and that such clarification would give us an adequate justification for the systematic employment of these Aristotelian concepts without making our discussion obscure.

The seeming 'confusion' is this: Aristotle sometimes calls Stage II potentiality (dynamis)[44] and sometimes calls it actuality (entelecheia)[45] while he consistently calls

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44. See the following passages:

> Hence all arts, i.e. the productive sciences (pasai ai technai kai poietikai epistemai), are potencies (dynameis) ... (Metaphysics IX-2, 1046b:1-5.)

> ...and science (episteme) is a potency which depends upon the possession of a rational formula, ... (Metaphysics IX-2 1046b:15-20.)

Also see Metaphysics IX-5 1047b:30-35, De Anima II-5 the passage quoted in the last note.

45. See the following passages:

> Matter is potentiality, while form is realization or actuality (entelecheia), and the word actuality is used in two senses, illustrated by the possession of

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the Stage I potentiality (dynamis) and the Stage III, which is actually a process rather than a state, actualization (energeia). Because of this dual terminology for State II, which corresponds to the possession of knowledge that is distinguished from both non-knowledge and the actualization or manifestation of knowledge, both of the terms "potentiality (dynamis)" and "actuality (energeia or entelecheia)"[46] becomes seemingly 'ambiguous' since potentiality can mean either State I or State II[47], and the

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> knowledge (episteme) and the exercise of it (theorein). (De Anima II-1, 412a:10-15.)

> But Actuality (entelecheia) has tow senses, analogous to the obsession of knowledge and the exercise of it. Clearly actuality in our present sense is analogous to the possession of knowledge. (Ibid., 412a:20-25.)

Here the ambiguity of the term actuality (entelecheia) is explicitly recognized by Aristotle. We will soon discuss this problem. The point to be noticed is that the possession of knowledge is sometimes called dynamis and sometimes entelecheia.

46. The distinction between entelecheia and energeia will be discussed below soon. For the textual problem about these two terms, see note 50.

47. Aristotle explicitly recognizes that the concept of potentiality(dynamis) has two meanings and that there is not proper terminology to clarify the ambiguity:

> For the moment it will be enough to establish that the term "potential" is used with two meanings; first as we might say of a boy that he is a general, and secondly as we might say it of an adult. ...there is no name corresponding to this difference.... (De Anima II-5, 417b:30- 418a:1.)

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actuality can mean either State II or the State III[48]. These ambiguities can be clarified in the following way.

The concept of potentiality (dynamis) in Aristotle's sense is not an independent concept, but a concept that can be characterized only with respect to the corresponding actuality and the process that leads to this actuality. Thus, there is no potentiality as such, all potentialities are potentiality for something else. In a word, a potentiality is the state that is capable of something, and this something is the corresponding actuality for that potentiality. Therefore every potentiality is the potentiality of some actuality. This is what Aristotle calls the logical priority of actuality over potentiality.[49] Thus if we call something a potentiality,

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48. The ambiguity of the concept actuality is more complicated than that of potentiality since Aristotle has two names for the former (energeia and entelecheia) without using them in completely a systematic way. However, his use of these two terms is not random, either, as will be seen below. Here see the following passage where he states that the concept entelecheia is used for both the State II and the State III, which is a process or activity.

> The soul, then, is the actuality (entelecheia) of the kind of body we have described. But actuality (entelecheia) has two senses, analogous to the possession of knowledge and the exercise of it. Clearly actuality in our present sense is analogous to the possession of knowledge: for both sleep and waking depend upon the presence of soul, and waking is analogous to the exercise of knowledge, sleep to its possession but not its exercise (energeia). (De Anima II-1, 412a: 20-25.)

49. See Metaphysics IX-8 1049b:10-20.

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we automatically identify the actuality corresponding to it, and if we identify the pair of potentiality and the actuality, we also identify a certain dynamic process whose beginning is the potentiality and whose end is the actuality.[50] Thus when we describe a state as a potential

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50. The primary definition of potentiality is " the source or beginning (arche) of change in some other thing".

> We have made it plain elsewhere that "potentiality" and "can" have several senses. ... But the potentialities which conform to the same type are all principles (archai), and derive their meaning from one primary sense of potency, which is the source (arche) of change in some other things, or in the same thing qua other.
> (Metaphysics IX-1, 1046a:5-15.)

Also see Metaphysics V-12 1019b:30-1020a:5. We have to notice that this sense of potentiality as the arche of change is only the primary one which corresponds to the process of change, which Aristotle calls kinesis. At the beginning of Metaphysics IX-1, Aristotle emphasizes that the concept of the potentiality has to be extended from its "original sphere", namely motion or change to be able to carry the more important meaning.

> ...let us also gain a clear understanding about potentiality and actuality (entelecheia): and first about potentiality in the sense which is most proper to the word, but not most useful for our present purpose-for potentiality and actuality extend beyond the sphere of terms which only refer to motion.
> (Ibid., 1045b:30-1046a:5.)

Also see ibid. 1048a:25-30, 1047a:30-35.

This extension of the concept of potentiality means nothing but the extension of the concepts of actuality and the dynamic process. The new concept of dynamic process is no longer a change or movement from potentiality to actuality, but the energeia as the always completed activity. This promise of conceptual expansion is fulfilled in Metaphysics IX-6, which is one of the most

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X, we automatically identify both the corresponding actuality X and the dynamic process from potential X to actual X. For example, when we say that a baby is a potential speaker, the actuality is the possession of linguistic knowledge, and the dynamic process is the acquisition of language, and when we say that we make a potential judgment that this specimen is water when we drink that specimen without consciously making this judgment, the actuality is the conscious judgment, and the dynamic process is the process of putting this potential judgment into the focus of our consciousness. This relational concept of potentiality/actuality, we think, is the proper interpretation that can clarify the 'confusion' and 'ambiguity'.

Therefore, if there are two kinds of dynamic processes, it is not a 'confusion' at all to call the same State II both potentiality and actuality since this same state of possessing knowledge can be the beginning of one process, namely the manifestation of knowledge, and the end for another, namely the acquisition of this knowledge. It is, thus, not a 'confusion' either to say that both potentiality and actuality have two meanings since if there are two different processes, potentiality as the beginning of process and the actuality as the end of process should have two meanings.

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important texts for our current purpose.

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Aristotle calls the first type of process (from State I to State II) the movement (kinesis) and the second type of process the actualization (energeia).[51] The concept of becoming or change applies only to the former but not the

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51. Aristotle describes the difference of these two processes as follows:

> Since no action which has a limit is an end, but only a means to the end, e.g., the process of thinning; and since the parts of the body themselves, when one is thinning them, are in motion in the sense that they are not already that which it is the object of the motion to make them, this process is not an action (praxis), or at least not a complete one, since it is not an end; it is the process which includes the end that is an action. E.g., at the same time we see and have seen, understand and have understood, think and have thought; but we cannot at the same time learn and have learnt, or become healthy and be healthy. We are living well and have lived well, we are happy and have been happy, at the same time: otherwise the process would have had to cease at some time, like the thinning-process; but it has not ceased at the present moment: we both are living and have lived.
>
> Now of these processes we should call the one type motions (kineseis), and the other actualizations (energeias). Every motion is incomplete- the processes of thinning, learning, walking, building- these are motions, and incomplete at that. For it is not the same thing which at the same time is walking and has walked, or is building and has built, or is becoming and has become, or is being moved and has been moved, but two different things: and that which is causing motion is different from that which has caused motion. But the same thing at the same time is seeing and has seen, is thinking and has thought. The latter kind of process, then is what I mean by actualization (energeian), and the former what I mean by motion (kinesin).
> (Metaphysics IX-6, 1048b:20-35.)

Actually the whole Metaphysics IX-6 is important for the clarification of this distinction. See also, De Anima II-5 417a:30-417b:20.

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latter. Change or becoming is the process in which an entity negates its original identity to fulfill its potentiality and in such a process the entity has not yet realized its potentiality and the process itself is incomplete until it has completed the process. In becoming or change, the entity has to become something other than itself to fulfill the potentiality it originally had. This incompleteness and negativity is the essential feature of kinesis and the end of this process is called the completed or the actual (entelecheia)[52]. Learning, which is a becoming of knowledge or the movement from non-knower (State I) to knower (State II), is, as Aristotle remarks, one typical example of kinesis. To learn something means to negate or change the identity of non-knower as the initial stage to fulfill its potentiality of knower, and one's learning means one's having not yet learned: when we are learning, we still have something to learn and our learning is not completed yet. A seed's becoming a tree, a piece of marble's being transformed into a statue, a child's maturing into an adult, as well as the process of learning in general, all of them are the examples of kinesis.

The second process, which is not the movement from State II to State III, but identical with State III, which

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[52] See the next note for the use of entelecheia and energeia.

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is not a state but a process, is called the actualization or activity (energeia)[53]. The essential feature of this process, Aristotle says, is that the goal of this process is present at each moment of the process, therefore this

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53. From the texts we are concerned with as a whole, it is quite fair to say that Aristotle mainly reserves the term energeia for the name of second dynamic process as activity, and uses the term entelecheia for the completed state as the goal of kinesis.

As we remarked above, however, Aristotle makes no explicit systematic distinction between entelecheia and energeia along this line. This is clear from the fact that in De Anima he uses the term entelecheia both in the sense of the completed state (State II) (see 413a:11, 417a:10, 417a:25-30, 417b:5-10) and in the sense of the process of actualization (State III, passim) and the fact that he explicitly says that entelecheia can mean either State II or its actualization.

Nevertheless it wouldn't be completely unwarranted to say that entelecheia means State II as the complete state of the process of change or becoming, and energeia means the activity or actualization of this entelecheia. One reason, of course, is the etiology of these two terms that entelecheia is a derivative of the adjective "enteles" which means "complete" and energeia is a derivative of verb "energein" which means "to work" or "to be active".

As for the textual justification, we have the following observation. In Metaphysics, Aristotle doesn't often uses the term entelecheia (see 1045b:30-1046a:1, 1047a:30,1049a:5-10, 1050a:20-25) and he discusses almost exclusively about the concept of energeia as activity or actualization when he uses these terms. Moreover, he uses the term energeia also exclusively for the concept of activity. Thus, it seems quite safe to call the activity of State II energeia.

As stated above, the usage of the term entelecheia is less consistent, but if we appreciate the importance of Aristotle's definition of soul as a special kind of substance that is a completed faculty of a living organism capable of the activity in the sense of energeia (see De Anima II-1), and if we respect the fact that soul is sometimes called 'entelecheia' of an organism by 'Aristotelians' (e.g. see Leibniz 1714, sections 62-63), it would be loyal to the spirit of Aristotle to call State II entelecheia which include soul as a special and the most important case.

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process cannot be considered as a process of achieving a certain goal which is not yet achieved. This is the process in which a completed state manifests itself without making any change in itself. In other words, it is an activity that is always completed in the process. It is "the development into the real self".[54] When we are seeing, our seeing is not a part of the process towards the completion of seeing since we have already seen: our seeing is at the same time our having seen while our building a house is different from our having built a house. When we put a judgment into our focus of consciousness, our doing this is not a process towards knowing some new truth since we already know our judgment is correct. Seeing, knowing, living, speaking, and actualizing judgments potentially already made, are all the activity or actualization (energeia) in this Aristotelian sense.

To summarize, the Aristotelian concepts of the dynamic processes can be systematically characterized in the following way. There are two types of dynamic processes: kinesis and energeia. Kinesis is the process of changing or becoming in which the agent in the process is incomplete with respect to the goal of this process. In the case of knowledge, kinesis is learning. Since not everything can undergo every kind of kinesis-process (e.g. not everything

54. De Anima II-5 417b:5-10.

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in the world can learn), a state that can be transformed into X through this kinesis-process is called potential X, and the completed state X is called actuality or entelecheia with respect to this kinesis-process. Thus, a student is a potential knower and a new born baby is a potential speaker while their completed knowledge when they have finished learning is actuality (entelecheia). Knowledge as an enduring state of a person is entelecheia. Learning consists in the attainment of a special kind of entelecheia called knowledge. The knowledge attitude we mentioned above has to be regarded as one characteristic of this knowledge as entelecheia. Our having achieved this state of knowledge is characterized by our indifference to the actual grounding of our knowledge, but the ability of grounding itself is not entelecheia (completed goal) of learning process since this ability is not actualized when we use our knowledge. We don't learn to justify what we learn.

This entelecheia is actualized in the process of activity called energeia. The distinctive feature of this second process is that the agent in this process is always already completed and has no goal beyond it. With respect to this process, entelecheia, when it is not engaged in its proper activity, is called potentiality, but this does not mean that this process is a movement or change from entelecheia to something else. Energeia,for knowledge, is

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the activity in which knowledge as entelecheia fully manifest itself, and this activity is the activity of knowing or recognizing the truth of something in real time. This process is knowledge as actual activity (energeia).

Thus, there are two distinguishable processes of knowledge: one is the learning-process in general as a kinesis whose beginning (arche) is a potential knower and whose goal is the attainment of knowledge as entelecheia, and the other is the actualization of this attained knowledge as entelecheia[55].

The becoming of knowledge, whether it is theoretical knowledge or atheoretical knowledge, is this kinesis. Therefore, the problem of the distinction between theoretical knowledge and atheoretical knowledge , from this Aristotelian point of view, has to be dealt with as a problem about two kinds of becoming of knowledge (kinesis) rather than the problem of two kinds of knowledge (entelecheia) since their distinguishing feature, namely groundedness, doesn't distinguish theoretical knowledge as

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55. Aristotle describes these two knowledge processes in the following way:

> The first two men [a member of the group of potential knowers and the actual knower of grammar who doesn't exercise this knowledge] are both only potentially instructed; but whereas the one becomes so in actuality through a qualitative alteration by means of learning, and after frequent changes from a contrary state, the other passes a different process from the inactive possession of sensation or grammar to its active exercise.
> (De Anima II-5, 417a:30-417b:5.)

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entelecheia and atheoretical knowledge as entelecheia.

This irrelevance of groundedness for entelecheia itself may be understood in the following way. Theoretical knowledge as entelecheia doesn't actualize itself through actual grounding or justification but through the actual judgment in accordance with its own contents, and groundedness is irrelevant for the actualization of theoretical knowledge, and the characterization of it as entelecheia is determined only by what it can actualize. Therefore, groundedness is irrelevant for the characterization of theoretical knowledge as entelecheia. As an attained state, these two kinds of knowledge as such show little difference. Thus, the groundedness has to be regarded not as the distinctive feature of theoretical knowledge as a completed state, but as the distinctive feature of the becoming process of theoretical knowledge. From this point of view, the groundedness of theoretical knowledge is nothing but a trace of its specific becoming process.

Theoretical knowledge, thus, is specified as the knowledge attained through the process of grounding or justification while atheoretical knowledge is characterized as the knowledge attained through other processes than grounding.

What remains for us is to specify the feature that

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distinguishes knowledge from other dynamic concepts such as skill, sensation, or disposition. Since knowledge as entelecheia is still a potentiality with respect to the process of knowledge as activity, and a potentiality can be characterized only with respect to its actuality, what distinguishes knowledge from those other dynamic process is a specific feature of knowledge as activity.

Let's think about what distinguishes knowledge from disposition such as the inflammability of oil or the solubility of salt. Of course, we can extend the concept of disposition, as Quine[56] does, so that knowledge of language is considered as a kind of disposition. However, if we take the range of the concept of disposition to be so wide, there is nothing to prevent us from calling all kinds of knowledge a sort of disposition. For example, the knowledge of a philosopher can be regarded as a kind of disposition to a certain sort of behavior called 'philosophical' just as the knowledge of language can be regard as a disposition to a certain sort of behavior called 'verbal'. If knowledge of language can be regarded as verbal disposition, knowledge of philosophy can be also regarded as philosophical disposition. For to specify a stimulus-behavior relation of a speaker qua speaker as a dispositional relation is no less easy than to specify the

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56. For Quine "language consists in dispositions to verbal behavior" (Quine 1984,p.1). Also see Quine 1960 chapters 1 & 2.

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same relation of a philosopher qua philosopher: both are not specifiable by any deterministic or probabilistic terms.[57] The problem of such a view is not that it seems to violate our common sense, but that the concept of disposition collapses into the concept of potential state in general. Under such a concept, knowledge, perception, and inflammability of oil will be equally regarded as a disposition, and the original question about their difference remains untouched: for example, we are not told by Quine or Skinner what constitutes verbal disposition. Therefore, we think that Quinian extended concept of disposition has no use in our present context. This consideration should be regarded as a general criticism of the dispositional view of knowledge. Unless the kind of disposition knowledge is, is specified in a non-circular way (e.g. "knowledge as cognitive disposition" is circular), the concept of disposition is of little use for the account of knowledge.

The proper concept of disposition, therefore, should be narrower and, should be able to distinguish most typical cases of disposition such as perception or inflammability from knowledge. Aristotle gives an account of a special kind of potentiality that satisfies this condition. That is the concept of non-rational potentiality. In

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57. Remember Chomsky's classical criticism of Skinner. See Chomsky 1959.

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Metaphysics IX-2, he distinguishes rational potentials and non- or ir- rational potentials. They are distinguished in that the latter can produce only one type of result while the former can produce one type of result as well as its contrary.

> Every rational potency admits equally of contrary results, but irrational potencies admit of one result only. E.g., heat can only produce heat, but medical science can produce disease and health. The reason of this is that science is a rational account, and the same account explains both the thing and its privation, though not in the same way; and in one sense it applies to both, and in another sense rather to the actual fact.
> (Metaphysics IX-2 1046b:5-15 [58].)

This characterization itself doesn't seem to be very relevant for our present purpose. If, however, we look at its more elaborated form in Metaphysics IX-5, we have to admire Aristotle's deep insight.

> Since anything which is possible is something possible at some time and in some way, and with any other qualifications which are necessarily included in the definition; and since some things can set up processes rationally and have rational potencies (dynameis meta logon, [which literally means "abilities according to a word"]), while others are irrational and have irrational potencies (dynameis alogoi [which can be translated as "nonverbal abilities"]); and since the former class can only belong to a living thing, whereas the latter can belong both to living and to inanimate things: it follows that as for potencies of the latter kind, when the agent and the patient meet in accordance

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58. Also see ibid. 1046b:15-25.

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> with the potency in question, the one must act and the other be affected upon; but in the former kind of potency this is not necessary, for whereas each single potency of the latter kind is productive of a single effect, those of the former kind are productive of contrary effects, so that one potency will produce at the same time contrary effects. But this is impossible. Therefore there must be some other deciding factor, by which I mean desire or conscious choice. (Metaphysics IX-5, 1048a:1-10.)

What Aristotle tries here to capture under the name of irrational potentiality is exactly what we are looking for as the narrow concept of disposition, and his characterization of it is the essential feature of the concept of disposition that would be lost under a Quinian unlimited extension of it: the feature that dispositions are necessarily actualized under certain specified condition without any reference to such concepts as intention, volition, or choice. Under this characterization, both perception and inflammability are regarded as kinds of irrational potentiality while knowledge and skill are characterized as rational potentiality since the conditions for the actualization of skill as well as knowledge cannot be characterized without referring to these intentional or volitional concepts. The common feature of the former two potentialities are that they are necessarily actualized under certain specifiable conditions. In De Anima, Aristotle fully employs this feature of voluntariness vs. compulsoriness to distinguish sensation from knowledge.

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> Again actual sensation corresponds to the exercise of knowledge; with this difference, that the objects of sight and hearing (and similarly those of other senses), which produce the actuality of sensation, are external. This is because actual sensation is of particulars, whereas knowledge is of universals; these in a sense exist in the soul itself. So it lies in man's power to use his mind whenever he chooses, but it is not in his power to experience sensation ... (De Anima II-5 417b:20-25.)

Let's call Aristotle's concept of irrational potentiality disposition, and rational potentiality non-dispositional potentiality. The distinctive feature of non-dispositional potentiality is that its actualization is intentional or voluntary activity while the actualization of disposition is necessary or compulsory under certain conditions. Thus we can characterize knowledge as a kind of non-dispositional potentiality.

As for the distinction between knowledge and skill, we have already characterized it[59]: they are distinguished by the presence in the former and the absence in the latter of the feature of the recognition of truth or actual judgment with subject-predicate (topic-comment)structure. When our knowledge is actualized, this process has to do with the recognition of the truth of something or the correct judgment; otherwise we can hardly regard such a process as a manifestation of knowledge. On the other hand, a process

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59. See 2.2.4. and 2.3.1.

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has only to be an actual performance of something to be a manifestation of a skill; it may contains some recognition of truth, but it doesn't have to.

Thus, knowledge as an attained state, according to this alternative view, is a non-dispositional potentiality (entelecheia), whose actualization is knowledge as activity. This knowledge activity (energeia) as the actualization of already learned knowledge is voluntary or intentional since it is non-dispositional potentiality. This means that to know in the sense of attainment of a knowledge state is to be able to exercise it whenever one likes.[60] This actualization, i.e. knowledge as activity itself is characterized by the feature of the recognition of the truth of something under the structure of subject-predicate (topic-comment).

It is the nature of this knowledge as activity that becomes the focus of our discussion in the rest of this chapter since it is the thing that both the accepted view and our view are interested in because of its actuality. For the accepted view, this 'knowledge as activity' is an actual state of mind or brain which is a true representation of the reality. For our Aristotelian view, it is not a state, but a process, a special process of knowing activity (energeia) in which already completed

60. Cf. De Anima II-5 417a:25-30.

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knowledge (entelecheia) manifests itself.

The discussion so far, we think, justifies our systematic use of Aristotelian concepts for the description of complex phenomena about knowledge. We cannot, however, employ these concepts to justify our view of knowledge over the accepted view. For these concepts themselves are nothing but one way to classify and describe those phenomena, and when we describe those phenomena through these concepts to justify the view behind these concepts, we inevitably have to presuppose the basic thesis of this view. This is the trap of any formal system of concepts. Unless we think the nature of knowledge is exhausted by this system, we have to look at the concrete reality of knowledge, namely our own actual experience of knowing something; in other words, we have to seriously ask what it is to know something to go beyond the analysis of words. Since 'theoretical knowledge' is the only common ground for the two different views of knowledge, we have to look at our experience of having theoretical knowledge to effectively compare these two views.

2.4 The Nature of the Recognition of Truth

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2.4.0. Introduction.

In this section, we compare two views of theoretical knowledge to see how the groundedness of theoretical knowledge contributes to the knowledgehood of theoretical knowledge. If the groundedness is an essential constituent of knowledge, then groundless knowledge is a vacant concept, and therefore atheoretical knowledge is not knowledge at all. The nature of theoretical knowledge ultimately depends on the nature of the process in which the actual recognition of a fact that hasn't been known is achieved. The investigation of this process is done at 2.4.5. In 2.4.1. to 2.4.4., we describe the essential structure of epistemic justification to make it clear what is the place of this process of recognition in the whole process of the becoming of theoretical knowledge.

2.4.1 The Concept of Epistemic Justification.

Whichever view, the accepted one or the alternative one, is correct, it is an observed fact that all instances of theoretical knowledge are acquired through the process of 'grounding' or 'justification', and this type of knowledge is distinguished from memory without understanding in this respect, that the theoretical knowledge acquired through

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such a process is grounded or justified. Before investigating how we come to know things in this process, we need minimum clarification about the concepts of 'justification' and 'grounding'.

As many epistemologists emphasize[61], this 'justification' is by no means justification in general. There are many kinds of justification that don't fit our present context. The kind of justification relevant here cannot, for example, be the justification we make to defend our actions against charges of immorality. It also cannot be the kind of justification that is made only to diffuse the criticism of others since we often need more than a responce to criticism to attain the truth. In a word, this justification has to be something in virtue of which we get knowledge. This type of justification is usually called epistemic justification. Since knowledge in the sense we are interested in is knowledge of the truth of something, epistemic justification has to be a process that leads us to or grounds us on the truth, and the state of being epistemicaly justified has to be a state of being grounded on the truth. This feature is called truth-conductivity[62]. When a justification is truth-conductive, we know the

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61. See BonJour 1985 pp,5-8, Moser 1985 pp.1-5.

62. See BonJour 1985 pp.13-15. Nozick's concept of "tracking", which is a special relationship between a true belief and the fact that this belief is about, is a counterpart of this truth-conductivity in his account of knowledge. See Nozick 1981 p.178.

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truth or a particular fact because of this justification. Therefore, when an epistemic justification is truth-conductive, the concept of justification and that of grounding coincide. On the other hand, if an 'epistemic' justification is not truth-conductive, these two concepts depart from each other, and there emerges the possibility of the Gettier problem[63] in which we may adequately justify our belief, yet without such a justification leading us to the truth and to knowledge. Such a justification cannot be an epistemic justification since it doesn't produce knowledge. Thus the epistemic justification which is the only kind of justification we are interested in here has to be truth-conductive.

That a non-truth-conductive justification is not adequate for the account of theoretical knowledge, however powerful it may be, becomes clear if we compare this concept of epistemic justification with another important type of cognitive justification. Let's call this second type of justification doxastic justification. Even when we don't know the truth about a certain subject matter (say the ultimate reality of the matter), we always take different cognitive attitudes towards different opinions or hypotheses about this subject matter. For example, we don't believe some of these opinions or hypotheses at all even though there is no proof against them, and we may

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63. Gettier 1963.

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strongly believe some of them even though we don't yet know whether they are true. We assess each opinion differently in such a situation of ignorance in accordance with the best evidence available, and very often we take one of them as our own opinion and commit ourselves to it. In such a case, we don't believe this committed hypothesis without reason. We usually have particular reasons for the committed hypothesis and these reasons constitute our justification for this belief: they make our belief rational. Such justification is completely compatible with, or rather presuppose ,the fact that we know that we don't know yet whether our hypothesis is true or yet. This type of justification we call doxastic justification. Doxastic justification leads us not to knowledge but to cognitive rationality. In the situation of ignorance, we don't have epistemic justification, but we can always have doxastic justification. In other words, when we are ignorant, we don't have knowledge, but we can choose the most reasonable opinion. We cannot assume that cognitive rationality thus attained as the result of choice eventually coincide with the truth until we know that our hypothesis is true; we have to prepare for the possibility of radical discrepancy of cognitive rationality and truth. This is the lesson of Gettier's examples. Therefore we have to distinguish epistemic justification , which is truth-conductive, and doxastic justification, which is

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conductive to cognitive rationality.

When the epistemic justification becomes available (e.g. by the discovery of a proof or by a crucial experiment), in addition to doxastic justification, our opinion (dóxa) is transformed into theoretical knowledge (epistḗmē). Thus, in each process of scientific discovery, scientists experience the transition from doxastic justification to epistemic justification, and this transition constitutes the becoming of theoretical knowledge.

It is the epistemic justification that we are here interested in, and it is only this type of justification that constitutes the proper topic of epistemology as a science of knowledge.

2.4.2. Two Species of Epistemic Justification

Epistemic justification is a dynamic process through which we acquire new knowledge. This is a kinesis-process through which we as a cognitive agent move from the state of non-knower to that of knower. This process is exemplified by the way we acquire theoretical knowledge. In such a process, knowledge emerges not by an accident, but by virture of a certain structure of this process. Each phase in the process of epistemic justification is

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characterized and is assigned a specific function by this structure. In 2.4.3. and 2.4.4. we extract and describe this essential structure of epistemic justification through the analysis of simple examples so that we can locate the crucial phase of epistemic justification in which we actually come to know what we didn't know before. This crucial phase we call the recognition of the truth of something, whose nature is the center of our investigation in 2.4.5. Before we start the investigation of the structure of epistemic justification, we have to remark specific natures of two species of epistemic justification to avoid any unnecessary confusion.

There are two ways we acquire theoretical knowledge, i.e. from the people who already have it and by our own discovery. Corresponding to these two ways respectively, there are two types of epistemic justification/grounding. We call the first one pedagogical justification and the second heuristic grounding[64]. Pedagogical justification

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64. The term justification is more suitable for the transmission of knowledge and the term grounding is more suitable for the emergence of new knowledge. In the case of the transmission of knowledge, the knower, ex hypothesi, already knows the truth and doesn't have to ground it; he, instead, has to justify his "claim" of knowledge to the non-knower.

In the case of discovery of new facts or laws in the intellectual community, or, in personal discovery, there is a period in the process when no one knows the new truth or fact yet; the 'hypothesis' has to be grounded to become known to be true. Strictly speaking, in this case, there is no one to whom the non-knowers can owe the justification since there is no knower-non-knower relation in such cases. If a person really claims the knowledge of a new fact, that

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is the process we typically go through when we, as students, learn scientific theories from our teachers, though it is by no means limited to the class-room setting. Heuristic grounding is the process exemplified by the cases in which new theories are established as true within scientific communities though there are also cases in which we experience this heuristic grounding only as individual knowers as we personally can discover many particular facts through an inferential process.

2.4.3. A Case Study of Epistemic Justification

There are occasions in which we must and can answer the question, "How do you know that?" when we claim that we know something. There are also occasions in which we ourselves feel like asking the same question, when other people claim that they know something which we don't know or we suspect the other party actually doesn't know. In such situations, the relationship between the two parties is the one between the knower and the non-knower, or

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person has to ground the knowledge of that fact for himself first. If he has already done that, then the process is not the establishment of a new fact, but the transmission of knowledge.

Despite this difference of the connotations of justification and grounding, they are mutually interchangeable insofar as we mean epistemic justification by justification.

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between the examinee who is essentially a knowledge-claimant and the examiner who is essentially a pretended-non-knower[65]. The non-knower asks the knowledge-claimant for the justification, and the justification completes itself when the non-knower himself becomes the knower through this process as a pedagogic guide. Thus, the pedagogic justification which ends only in the new knowledge of non-knower becomes conductive to knowledge/truth. Knowledge that emerges as the result of this process is theoretical knowledge since it is justified. Therefore, pedagogical justification and heuristic grounding share the essential feature of epistemic justification that theoretical knowledge is produced in the process. Thus, we can investigate the essential structure of epistemic justification through an example of pedagogical justification.

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65. Here we concentrate on the former relation since the latter, i.e. the examinee-examiner relation can be regarded as a derivative re-enactment or reconstruction of the knower/non-knower relation.
In other words, the concept of epistemic justification in examinee-examiner relation has to be totally arbitrary unless we first grasp this concept in the knower/non-knower relation. Think about what reasonable standard a teacher can impose on the answers of students to the examination if the teacher doesn't think about the process through which he has reached the very knowledge the students are supposed to acquire. When we think about epistemic justification in an abstract context independent of the original process through which the knowledge has emerged, there will be no answer to the question where to stop in epistemic justification or the answer will be totally arbitrary. Thus, it is easy for a teacher to torture his students in the exam.

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Let's examine the following example to see the essential structure of pedagogic justification qua a species of epistemic justification.

"We are flying over Manhattan."
"How do you know that?"
"Central Park is just below us."
"I see."

Though this is a simple or almost trivial example, we can interpret this hypothetical conversation as an example where theoretical knowledge is transmitted from the knower to the non-knower through pedagogical justification and we can see the essential structure of epistemic justification/grounding even in this simple example. What is asked in the second utterance is not the exact process or history through which the knower has acquired this knowledge(The knower may have put glasses on before looking out the window, but this is not what the non-knower is asking.), but the <u>reason or ground</u> why the knower can know that what he claims he knows ("We are flying over Manhattan.") <u>is true</u> while the non-knower cannot see why that is true. In other words, the non-knower asks the knower how he(the non-knower) can recognize the truth of the thing he doesn't recognize yet. The non-knower, through this question, asks for the justification of the

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claimed knowledge that is manifested by the first utterance. Therefore, for the justification to be completed, only that type of knowledge/fact can be given as the answer, that the non-knower can recognize as true; and its recognition makes the non-knower recognize the truth of the very thing that the non-knower originally didn't recognize. Thus, the answers have to be able to relate what is not yet known by the non-knower and the things that are already known to or recognizable by the non-knower. Thus, what constitutes the steps of pedagogic justification is determined by two factors, (1) what is already known and recognizable to the non-knower, (2) what is unknown to the non-knower. Since these two factors are relative to the knowledge state of each non-knower, it is impossible to define the particular condition under which a process of pedagogic justification is completed. However, since pedagogic justification is a kinesis-process whose goal is the non-knower's acquisition of knowledge he previously didn't possess, the essential condition for the justificational steps is that they have to enable the non-knower to recognize the truth he previously didn't recognize, and it is the only essential condition for pedagogical justification. If it achieves this goal, it completes itself as epistemic justification. Otherwise, it doesn't constitute epistemic justification.

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2.4.4. The Essential Structure of Epistemic Justification

Though the pedagogical justification is necessarily a kind of reconstructed re-enactment of the original process of justification through which theoretical knowledge emerges as a new discovery (heuristic grounding), it already indicates two essential structural elements of epistemic justification as the process of the becoming of knowledge. They are (a) the four stage structure, and (b) the epistemic assumptions.

In this section we describe (a), and (b) will be dealt with at 2.5. when we discuss skepticism.

When we described the process of pedagogical justification as kinesis-process whose goal is the attainment of knowledge by the non-knower in the last section, we specified when this kinesis-process completes itself, if it does at all, but we didn't say anything specific about when and how it starts. It is this four stage structure that fully specifies the whole development of the process from the beginning to its completion.

We don't always go through the process of epistemic justification/grounding whenever we acquire new knowledge. In other words, we don't always ask "How do you know that?" of other people or of ourselves when we know something new. On the other hand, the process of epistemic justification

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doesn't always take place when there is something we don't know. This means that though epistemic justification begins with non-knowledge and ends with knowledge, there should be more conditions that specify how and when this process starts and ends. How does epistemic justification, whether it is a pedagogic one or a heuristic one, start and end?

In short, epistemic justification starts only when the non-knower takes a critical attitude towards a particular thesis or assertion whose truth or falsity he still doesn't know, by explicitly making its content the object of our focal consciousness. The critical attitude can take the form of such various activities as doubting, questioning, trying to prove, trying to disprove, trying to support a certain thesis. Its essence is an tendency or desire to establish a thesis or its negation. When the question "How do you know?" is asked, it is an unmistakable manifestation of the critical attitude. The critical attitude is based on both the lack of knowledge and the awareness of this lack of knowledge. When we know something, we don't and can't take this critical attitude towards what we know; our critical attitude is always the indicator of our ignorance. On the other hand, if we are even ignorant of our ignorance, we cannot take a critical attitude. When we take a critical attitude towards something, we at the same time realize our ignorance.

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The process of epistemic justification ends when this critical attitude is resolved into knowledge attitude, which may well be described as a kind of cognitive equilibrium, through the recognition of the truth. When we have leaned something, we lose our critical attitude to that, and become indifferent to its ground.

It is this critical attitude and its resolution into knowledge that marks the beginning and the end of epistemic justification. When there is no critical attitude, the concept of epistemic justification doesn't make sense, and the talk about it becomes empty. For example, we cannot talk about the epistemic justification of something to which nobody can take critical attitude without getting into an indefinite discussion without point ,since there can be no end to an epistemic justification without a critical attitude just as there is no end to the payment of non-existent debt. Such processes usually don't get started, but they won't finish forever if they get started by some abnormal causes. For epistemic justification as well as payment of debt are kinesis-processes which are marked by a negative element (critical attitude and debt) whose resolution marks the end of process. When we mistake a kinesis-process which has a certain end besides the continuation of the process itself for an energeia-process which is the end itself, there occurs a tragedy; learners have to learn forever without having learned anything,

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debtors have to pay forever without completing their obligation, and non-knowers have to justify their beliefs forever without attaining knowledge. Without considering the critical attitude, our discussion on epistemic justification loses its point.

This critical attitude doesn't come out of nowhere. Whenever it occurs, it has a structured origin, which determines the particular contents towards which we take the critical attitude. It is the four stage structure of epistemic justification that conditions the internal development of the process as well as the dynamic relation between what is known and what is unknown. It essentially has the following four stages.

(1) The problematization which consists of the thematization of the subject-matter of the whole process, and the identification of its unknown aspect through the form of WH-questions (why, what, where, when, who, and how).
(2) The supposition about the unknown aspect of the topic.
(3) The critical attitude to this supposition.
(4) The resolution of the critical attitude into knowledge through epistemic justification.

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Let's see how each stage proceeds.

In the stage of problematization, we simultaneously thematize (= make the object of focal consciousness) something we already know, and we also recognize an unknown aspect of that theme. This unknown aspect is expressed by such questions as "Why...?", "What...?", "How...?", "When...?", "Where...?". It is in this problematization that the whole process starts. For this problematization to occur, we (the non-knowers) have to be ale to recognize in our focal consciousness some new and strange aspect that hasn't been recognized, about a familiar, well-known object. This is the process of the recognition of ignorance. This new and strange aspect is sometimes called 'anomaly' in the history of science. This is something that catches our attention. In our previous example, what is thematized is the plane's flying. Both of the speakers, under our current interpretation, already know the fact that the plane they are in is flying, and each assumes that the other knows this fact. Its unknown aspect is the location of that flying, which is expressed by the question, "Where are we flying over?"

This process of problematization always occur in the consciousness of the non-knower who is the future knower, but the knower, in the case of pedagogical justification, assumes or anticipates the theme and its unknown aspect for the non-knower by assuming the knowledge of non-knower

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(think about what teachers do when the class starts). The problematization is eventually done by the non-knower as is expected by the knower if the knower's assumptions about the non-knower's knowledge are correct. But it is only through the subsequent development of the pedagogic justification that we can know whether these assumptions are correct or not. In our previous example, it is only through the last utterance, "I see." that we can specify what is the theme and what is its unknown aspect, though we can easily assume what they are.

Following the process of thematization, whether it is experienced by ourselves or overtly expressed by other people or only assumed for a while, there comes the formation of a supposition or of suppositions about the unknown aspect of the theme. The suppositions are, in general, the hypothetical answers to the WH-question raised by the problematization. However, in the case of pedagogic justification, there is virtually only one supposition about the unknown(to the un-knower) aspect of the theme and this supposition is not a hypothesis but a known fact for the knower; it appears a ungrounded hypothesis only for the non-knower because of his ignorance. In our example, the supposition is expressed by the first utterance, "We are flying over Manhattan."

Each supposition is met by the critical attitude of the people to whom the truth of the supposition is still

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unknown as soon as it is formulated. The critical attitude is the other or the negation of the knowledge attitude, and we cannot take critical attitude towards what we already know. Therefore it is at the stage of critical attitude that the process' direction to the knowledge/truth is negatively manifested. The critical attitude is the tacit indicator of our will to the truth and to knowledge.

In pedagogical justification, the non-knower usually only potentially takes this critical attitude in his background consciousness and this critical attitude is actualized only when the non-knower (student) encounters what he feels is unintelligible, implausible, inconsistent, arbitrary, or much too ungrounded in the knower (teacher)'s presentation of the supposition. But this doesn't mean that the non-knower(student) doesn't take the critical attitude in pedagogical justification when he isn't engaged in overt critical activities such as questioning. The critical attitude itself is a precondition for the students' overt critical activities. Unless the critical attitude is taken in the background consciousness of the non-knower and the student is always ready to detect and point out the knower(teacher)'s ungroundedness, non-knower cannot even pose a question when it is necessary. If the student lacks this ability of taking the critical attitude towards a particular theory, the teacher cannot teach him the theory as such since the student cannot get into the

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process of epistemic justification. All the teacher can do in such a case is to have the student memorize the content of the theory without the recognition of its truth. Of course, such a memorization plays an important role in education, but this itself does not constitute the transmission of theoretical knowledge as such.

In our example, the critical attitude is expressed by the question, "How do you know that?" This question, at the same time, confirms the correctness of the knower's original assumption about what the non-knower does and does not know. If, instead, the "non-knower" had responded by saying "I know" or by an indifferent attitude, that assumption would turn out to be wrong, and the epistemic relation of knower-unknower would be resolved. In a similar fashion, if the students turn out to know every thing the teacher is going to teach, the epistemic relation of teacher-student ceases to exist.

The critical attitude is followed by the step of justification in the narrow sense. This step, when the epistemic justification is successful, makes us recognize the truth of the fact we haven 't previously recognized. In our example, the knower's answer, "Central Park is just below us", under our current interpretation of the conversation, makes the non-knower recognize the truth of the target fact.

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2.4.5. Two Views on the Nature of the Recognition of Truth - Kinesis or Energeia ? -

But how is this recognition itself achieved? How, after all, do we come to know something we previously didn't know? This is the process in which we actually recognize the truth of something (that something is the case) in our focal consciousness. Without this process, epistemic justification is not completed and we don't get any theoretical knowledge. On the other hand, if this process is achieved, we will have knowledge. Therefore, the question of the nature of knowledge is ultimately the question of what it is to actually recognize the truth of something and how it is possible. For example, if this process turns out to have such a nature that we sometimes can achieve this process without epistemic justification, we could conclude that grounded knowledge is possible. To investigate the nature of this process is the purpose of this section.

We will here encounter two different views about this process of knowing the truth of something corresponding to the Aristotelian view of knowledge and the traditional view. According to Aristotelian view, this process is an actualization (energeia) of knowledge as entelecheia (an ability to recognize the truth when we

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encounter it under certain conditions), and therefore is always and already complete throughout its life. In other words, this process cannot be the one in which several sub-processes and elements are combined or synthesized into the final complete recognition. According to Aristotelian view, the recognition of truth itself cannot be such a synthetic-process (a kinesis-process) in which we complete the recognition through many steps; the recognition process has to be an energeia-process which is complete from the beginning; we should be able to recognize the truth of something not by recognizing and combining several parts of the truth, but by simply recognizing the truth.

On the other hand, such a non-synthetic view of recognition is not acceptable to the traditional view at all, since there cannot be any justifying feature for the recognition-process , in other words, the recognition itself would be groundless according to this view. For if there is such an identifiable justifying feature in the recognition process, we should be able to synthesize or realize the process of recognition by bringing about this feature; however, if the recognition is to be realized in this way through something other than itself, it is no longer an energeia-process, but a kinesis-process which has the beginning and the end. Therefore, if the recognition-process itself is to be grounded or justified, and is to have a justifying feature, it cannot be an energeia

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process; it, instead, has to be a kinesis process; it has to be a synthesizing process in the widest sense of the word.

Thus, these two views of knowledge (the Aristotelian view and the traditional view) sharply conflict with each other as to the nature of the recognition-process. In the rest of this section, we first construct a plausible version of the synthetic view of recognition (traditional view), and then attempt to criticize it.

From the synthetic point of view, one plausible picture of this process of recognition is that the justification step functions as a final and decisive constituent of the picture of the truth that is to be recognized. According to this view, the non-knower already recognizes what justificatory step(s) will suffice for his future recognition of the unknown truth of the target fact. Let's call this knowledge the prerecognition of the truth to come. If the non-knower has such prerecognition, it will work as a criterion or standard against which he can judge whether he really recognizes the truth of the target fact when he receives and recognizes the given justification step. In other words, this prerecognition of the truth to come is the knowledge of features or criteria of the missing item of the picture of truth to be known. The object of this prerecognition may well be called a 'truth

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condition'. Metaphorically speaking, the prerecognition of the truth conditions of the truth to be known is the jigsaw puzzle we have constructed minus the final piece, and the recognition of the justification step is that final piece. Let's call this view of recognition the jigsaw puzzle view of recognition.

This jigsaw puzzle view may seem to make the process of recognition understandable. It also seems that we sometimes know things in this way. In our example, the prerecognition of the 'truth condition' is the conditional knowledge that we are flying over Manhattan if we are flying over Central Park, and the recognition that we are flying over the Park fits this prerecognition so that we achieve the final recognition that we are flying over Manhattan.

The problem, however, is whether we actually recognize things this way and whether knowing is possible in this way.

Does our non-knower recognize the final fact that he is flying over Manhattan in this way? We, of course, can easily imagine a case in which he really recognizes the final fact in this way. If, for example, the non-knower thinks that Central Park should be seen below if he is really flying over Manhattan and asks, "Can you see Central Park?", then his recognition fits the pattern of this jigsaw puzzle view. In this case, he clearly prerecognizes

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the 'truth condition' for his flying over Manhattan and anticipates the coming final piece of knowledge to fill the unsaturated space in the 'truth condition' .

The actual case in our example, however, is quite different from this. As far as we can see from the conversation, the non-knower just cannot be sure that he is flying over Manhattan, and asks the knower how they can recognize the truth of their flying over Manhattan. There is no reason to suspect that he thought about the 'truth condition' of his flying over Manhattan in terms of flying over Central Park. For the non-knower could have recognized the same fact by watching Brooklyn Bridge or any marker among thousands of possible markers of New York. The knower, on the other hand, doesn't give any indication of his recognition of non-knower's prerecognition of this 'truth condition'; he just says,"Central Park is just below us", and the non-knower simply recognizes the truth of the target fact by the help of this answer. There occurs no act of 'matching' the prerecognized 'truth condition' expressed by the hypothetical proposition, if P then Q, and the missing piece of truth, P, on the side of the non-knower, either. Nevertheless, we have no special reason to think that our non-knower failed to recognize that he was flying over Manhattan because he didn't go though such synthetic process. Such a process seem to be quite irrelevant for the type of recognition he experienced, and

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we seem to have this type of non-synthetic recognition very often. Let's have a closer look of it.

The strength of the jigsaw puzzle view of knowing is to refer us back to the cases of recognition where this type of matching or synthesizing actually occurs between 'if P, then Q' and 'P' for the recognition of 'Q'. In such a case, we feel that we clearly understand how the recognition has occurred because we explicitly experienced the process of matching or synthesizing. To think that an actual recognition occurs because of these explicit synthesizing processes fits to justificationism very well, and such a view can decisively negate the legitimacy of atheoretical knowledge as ungrounded knowledge. However, if we take this process of explicit synthesizing as the essential part of the recognition and think that a conscious process becomes a recognition of the truth of something because of the existence of this explicit process of synthesizing, then we seem to radically depart from the reality of recognition and to make a fatal step towards skepticism.

For one thing, we usually don't make such explicit synthesis when we recognize something. Thus, the majority of cases which we usually think are the cases of 'recognition' has to be downgraded to unwarranted assumptions because of the lack of an explicit synthesizing

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process. Moreover, if we ask the status of the recognition of grounds themselves (e.g. recognition of 'if P then Q') even when we have an explicit synthesizing process, we have to realize that this view is very close to the most radical form of skepticism, since we no doubt don't experience explicit synthesizing process for each ground of a recognition. Therefore, if we take this view seriously, the natural conclusion is that we don't recognize any truth at all.

One way to avoid such skepticism without giving up justificationism is to think that the recognition is achieved not because of the actual process of synthesizing but because of the existence logical relationship among propositions "if P then Q","P", and "Q". However, this formal move is quite out of the question, since this logical relationship itself exists even if our knower failed to recognize that he was flying over Manhattan , for example, because he failed to identify Central Park. Logical relationship itself is far short of making recognition actual. We cannot base the actual realization of recognition on pure logical relation among facts.

The most promising strategy for justificationism is to think that the actual recognition at the focal consciousness is grounded by the potential judgments in the background consciousness. In our example, when the non-knower recognizes that he is flying over Manhattan, he also

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potentially recognizes that he is flying over Central Park and that Central Park is in Manhattan in the sense that he can actualize these potential judgment whenever he like. This view sees that non-knower's conscious process becomes an actual recognition because of these potential judgments.

Clearly this view has much more plausibility than the previous two options. Nevertheless, we cannot help questioning its basic idea that something potential can make an actual recognition of the truth. There arise two problems from this idea.

The first one is concerning the status of these potential judgments: whether they themselves are the recognition of truth or just judgments? If they are to ground the actual recognition at the focal consciousness, they cannot be simply judgments; they have to be true and their truth has to be recognized by the knower himself. However, the justificationism requires that these potential themselves be grounded too. They, in their turn, have to be grounded by other potential judgments. The problem of this idea is not that such a process might continue forever, but that we cannot know how each of these potential judgments is grounded by other potential judgments until we actualize the former since we have background consciousness only against actual focal consciousness. This means that we cannot know whether our

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'recognition' at the focal consciousness is actually a recognition or not until we actualize every potential judgment that supports that 'recognition' to check whether the ground itself is grounded or not. In our example, this means that the knower, who looked out the window and saw Central Park, cannot know whether he actually recognizes that he is flying over Manhattan until he shifts his attention to the facts that he is flying over Central Park and that Central Park is in Manhattan. This seems to be quite different from the actual case. If our knower can recognize that he is flying over Manhattan at all, he recognizes it the moment he sees Central Park; he doesn't have to wait until he explicitly makes a judgment that Central Park is in Manhattan. If there is an actual recognition in our example, this is achieved before potential judgments are actualized. Of course, when he is asked how he knows that he is flying over Manhattan by the non-knower, he answers that he knows that because he saw Central Park. However, he actually recognized that he was flying over Manhattan before he thus makes an explicit judgment that he is flying over Central Park. What we are asking here is not the logical relationship among these facts that is revealed only after the recognition is realized, but what makes an actual recognition a recognition of the truth. Thus, this option has a difficulty similar to the first option. If we really

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recognize the truth in our ordinary experience, this view cannot be a correct account of that process. On the other hand, if this view is correct, we seem to know no truth at all.

Another problem of this third option is that of whether these potential judgments can be known to be true independently of the recognition of the target fact at the focal consciousness. If they are to be grounds for the actual recognition, their truth has to be knowable independently of, and prior to the recognized fact itself. This means that our knower has to be able to know that he is flying over Central Park and that Central Park is in Manhattan without recognizing that he is flying over Manhattan. We think that this is, at best, questionable. Suppose that our knower sees Central Park in the midst of the Ocean, à la "Solaris", when he looks out the window. Then he cannot know that Central Park is in Manhattan since it is not in Manhattan. If a person cannot know whether he is flying over Manhattan, it is quite doubtful that he can nevertheless know that he is flying over Central Park and that Central Park is in Manhattan. The point is that these three facts are interrelated in such a very complex way that it makes little sense to say that recognition of two of them is the ground for the recognition of the other, though they seem to be independent of each other when expressed in sentences. We further discuss this problem in

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2.5., but this problem is serious enough to put this third option into question.

Thus, we can say that there is a sharp conflict between the synthetic view of recognition based on justificationism and our ordinary idea that we actually recognize many things in the cases like our example, though we are still far from concluding that the synthetic view of recognition is false. We can ,at least, conclude that it is very difficult to avoid the radical skeptical conclusion if we take this synthetic view of recognition and the traditional view of knowledge seriously.

On the other hand, if we are to defend our ordinary idea that we recognize the truth of many things on various occasions, we have to have a completely different account of the process of recognition. Of course, this is an account of the recognition process as an energeia-process(activity). In the rest of this section, we offer a sketch of this account and explain why it cannot be more than a sketch.

First, we have to distinguish the whole process of coming to know and the process of recognition. In our example, the former includes the process of looking out the window and seeing that one is flying over Manhattan. Such a process is, of course, a synthetic process; it has many

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parts and it is incomplete until this process is completed by the achievement of recognition. On the other hand, when this process is completed, we experience such things as recognizing, understanding, seeing, hearing, comprehending, feeling, and so on. The common feature of these processes is that we not only make a certain judgment or have a certain sensation but also realize that something is the case through various means. We call these processes the processes of recognizing the truth of something. Our thesis is that this process is not a synthetic process, but an energeia-process.

From the fact that the recognition is an energeia-process, three things follow. (1) It is an activity of a certain capacity (entelecheia), (2) it is unobservable, (3) it cannot be described through observation.

(1). The recognition-process is an activity of the capacity of recognizing the truth when we encounter it under favorable conditions. We seem to have this capacity within all modes of sensation, though we cannot say anything about its origin here. Think about the capacity of seeing. This capacity cannot be reduced to a capacity to receive and react to visual stimuli. Receiving visual stimuli and reacting to them doesn't by itself constitute seeing in the sense that we can see that there is Central Park below us. We have to be able to identify the object and recognize that something is the case, in order to see

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in this sense. And we think that we actually have the capacity of seeing. Therefore, we have this capacity of recognizing the truth which is contained in the capacity of seeing among others. The recognition of the truth is the activity of this capacity.

(2) and (3). An activity as such can be performed only by an agent who has already acquired the capacity of this activity, and this performance consists in such an agent's being engaged in this activity. An activity can exist only for an agent who is actually engaged in this activity, and only such an agent can know what this activity is. If such an agent tries to observe his own activity, he has to be engaged in another activity of observing the original activity and has to stop the original activity, which ceases to exist. The only way to know what an activity is to actually do this activity.

Think about the activity of playing-tennis. Unless you have learned how to play tennis and you yourself play tennis, you cannot know the activity of tennis. You can observe other people playing tennis, but an observed game of tennis is not an activity since even if you imitate every move of a player as a beginner might do, that doesn't constitute your playing tennis if you don't know how to play tennis. If you try to observe your playing tennis in order to describe intimately the actual experience of playing tennis, you have to stop playing tennis. Thus, it

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is extremely difficult or almost impossible to describe what it is like to play tennis, though playing tennis itself is a very common experience many people have had. This holds for all kinds of activity. We can describe them by re-enacting them in our imagination, but this is not a description of an activity in its actuality.

The same holds for the activity of recognizing the truth of something. In all aspects of our life, we have numerous experiences of recognizing the truth of many things. Nevertheless we can never reflect on these experiences in their actuality. To know in this sense means to be engaged in the activity of knowing. We can designate such an experience by describing a situation in which we normally recognize something (e.g. if you walk out from your building and it is raining, you recognize that it is raining, but you cannot reflect on how you achieve this recognition when you are actually recognizing), nevertheless we cannot describe this experience as such.

Under such a view of the recognition process, we also have to change our view about the function of epistemic justification itself. In the synthetic view of recognition, the steps in epistemic justification are considered to be actual constituents of the recognition; they are the pieces out of which the final recognition is constructed like a jigsaw puzzle. Under the activity view of the recognition process, there cannot be any parts or

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constituents of this process since it has no parts; it is completed from the beginning. Therefore, these steps have to be regarded as a guide that directs our attention to the correct object and to prepare proper conditions under which the activity of recognition can be achieved if there is any truth to be recognized. This function can be performed by various activities such as constructing a formal proof, pointing a finger, showing a photograph, conducting an experiment, describing facts, explaining, running a program, showing documents, bringing witnesses, and so on. Many of these activities are standardized in the scientific community, but this standardization only indicates the fact that there are many similar types of situations in which the majority of us attain the recognition of the truth. The standardization doesn't mean that these activities become actual epistemic justification, simply on the grounds that they satisfy certain standardized formal conditions. They become actual epistemic justification only when and only because they actually guide cognitive agents to the recognition of truth. This is why there can be no definable formal conditions for epistemic justification, or for scientific methodology. Even the formal conditions for mathematical proof as the independent source of mathematical truths don't exist. Formal conditions of proof are usually formalized so that the results of formal proof conform to our knowledge of what is true and what is

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not, while many tacit assumptions remain unexplicated. Thus, even if a mathematician offers a 'proof' of a theorem that satisfies all explicit formal conditions for proof, it is possible that it would not be accepted by other mathematicians if the theorem itself is so implausible that other mathematicians fail to recognize its truth. In such a case, mathematicians will look for hidden and unwarranted assumptions in that proof until they discover one. This is something we often experience. When Russell discovered his paradox, mathematicians, including Russell himself, didn't accept the paradox as a truth since it is a result of the formal system they laid down, but rather attempted many revisions of the formal system itself to avoid the paradox. This is only because they knew that this paradox cannot be a truth independently of any formal proof. Such an example tells us what is the real function of epistemic justification. Only as a guide does epistemic justification fulfill its most fundamental function of truth-conductivity.

Thus, we think that we actually know many things without being able to describe the very process of achieving the recognition of the truth. To say that the very process of the recognition of the truth is undescribable though it is a process familiar to us is no more absurd or mysterious to say that the very process of playing tennis is

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undescribable though it is a process familiar to everybody who has played tennis. We know these processes/activities only by actually doing them. We know what it is to know something or even what it is not to know something only by actually having recognized the truth of something. It is only when we already know what it is to recognize the truth that any epistemic justification could lead us to new knowledge, just as it is only when the guided person already knows what is his/her goal that a guide could lead this person to a certain place so that we can say that it is this person him/herself who reaches this place.

If the recognition process is such an energeia-process and the epistemic justification functions as a guide that leads us to a situation in which we can perform this activity as a manifestation of a capacity we already possess, then groundedness or justifiedness is not an essential feature of knowledge, but is rather a trace of the process through which we have reached the recognition of the truth. Therefore, if we can perform this activity of recognizing the truth without any guide, then it will constitute a case of <u>ungrounded knowledge</u>. We think that what we have called 'atheoretical knowledge' belongs to this case: when we drink a glass of water and shift our attention to this water, we recognize that this is water without any guide; our capacity of knowing and our atheoretical knowledge of the category of water manifest

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themselves in the activity of our knowing.

2.5. Skepticism and its Critique

2.5.0. Introduction.

In the previous section, we showed that the synthetic view of recognition necessarily leads us to a radical form of skepticism. This conclusion by itself doesn't support our own view, since we haven't eliminated skepticism as a real possibility. Moreover, this form of skepticism has much stronger ground than was suggested there, and seems to offer one of the most powerful skeptical arguments.[66] The ultimate source of this skeptical argument is the existence of epistemic assumptions in our cognitive activity. When we think that we know things, we actually make many assumptions. This threatens that our knowledge may be reduced to no more than a collection of assumptions or

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66. For an example of a detailed discussions of this skeptical argument, see Nozick 1981 chapter 3. Though his formulation of the problem is different from ours here, the essence of the skeptical argument is the same. That is what Nozick calls epistemic closure (ibid. pp.204-205, cf.Luper-Foy 1987,p.5) and what we call epistemic assumptions. The fundamental idea is that there are things without knowing which we cannot know what we usually think we know.

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suppositions. We describe the concept of epistemic assumption in 2.5.1., and discuss and criticize the skeptical argument based on this concept in 2.5.2.

2.5.1. Epistemic Assumptions

When we take something as true without actually recognizing its truth, we make many assumptions relevant to that supposition without noticing that we assume them. Let's call them epistemic assumptions relevant to a supposition. They are distinguished from explicit premises of an argument in that we usually don't realize what we assume, while we formulate our premises in an explicitly conscious process. These assumptions remain unnoticed partly because they seem so obvious to us. However obvious they may look, they are still assumptions insofar as they may turn out to be false. The most basic nature of these epistemic assumptions is that the supposition based on them cannot be true unless all of the epistemic assumptions relevant to it are true, and the supposition cannot be knowledge until we know that these epistemic assumptions are true. Let's call this feature assumptions' epistemic relevance to a supposition. That an assumption is epistemicaly relevant to a supposition means that we cannot recognize the truth of a supposition until we check the truth of that assumption.

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Some examples will clarify this concept of epistemic assumption.

Case 1. In our example, the knower answered that Central Park was below them. In this reply, the knower supposes or takes it as true that this answer is a sufficient justification for his claim that they were flying over Manhattan. This is only a supposition and not known to be true at the moment the knower answered. This supposition is based on the assumption that the non-knower knows that Central Park is in Manhattan. The latter is an assumption since the knower hasn't checked whether the non-knower knows this fact though it may be practically awkward to check this knowledge. As a matter of fact, it is a real possibility that our non-knower, to the knower's surprise, replies,"What is Central Park?" If this assumption doesn't hold, the knower's answer will lose its point.

Case 2. If we read in a newspaper that there was an earthquake in Japan, we take it as true. This supposition is true only if the paper reported a fact, but when we suppose that there was an earthquake in Japan, we don't check the newspaper's credibility. We simply assume the reliability of the

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paper. This assumption usually holds, but, as we know, it sometimes turns out to be false.

These assumptions look so obvious; yet they remain assumptions at the point when the supposition is made. This is indicated by the real possibility that they could turn out to be false. These things (e.g. that newspapers report facts, that ordinary people know that Central Park is in Manhattan) are usually taken for granted, but this fact itself doesn't guarantee their truth, and if an epistemic assumption turns out to be false, so does the supposition based on it. As a matter of fact, our social cognitive life is surrounded by a great number of these epistemic assumptions about what we know and how reliable is the cognitive mediation among us[67]; they sometimes break down, though not often.

Therefore, we cannot unconditionally say that we recognize the truth of those things whose truth depends on the validity of unnoticed and indefinitely many epistemic assumptions. These things includes 'fact' known through such mediation as witness, the media, or reports. Of course, these 'facts' are not simply opinions, conjectures,

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67. What H.Garfinkel did through some of his early "experiments" is to show how deeply we are embedded in this sort of assumptions by creating situations in people's actual life in which they don't hold, ~~their indignation.~~ For example, he assigned his students to behave as guests in their own homes for an hour, without informing their families their intentions. Garfinkel 1967, pp.35-75.

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or hypotheses. In the widest sense of the word, they should be called 'knowledge'. They are socially mediated 'knowledge'. Nevertheless, the way we 'know' them is sharply distinguished from the recognition of truth we discussed in the last section. If we are to be loyal to the meaning of words, they should probably be called highly plausible and warranted suppositions. They remain suppositions until their epistemic assumptions themselves are known to be true. Thus, the existence of epistemic assumptions makes this type of mediated knowledge vulnerable to criticism.

2.5.2. Skepticism and its Critique

To call this type of mediated knowledge 'highly plausible and warranted suppositions' implies a highly critical attitude to the whole edifice of human knowledge. However, this criticism itself is not yet skepticism, since it doesn't imply the total negation of the possibility of the recognition of the truth, but only a cautious attitude to a certain type of mediated knowledge. The real skeptical argument starts when we extend this concept of epistemic assumption to those situations in which we claim that we actually recognize the truth of something.

Think about our old example again. Suppose that the

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knower himself comes to know that they are flying over Manhattan by looking out the window and seeing Central Park. There are involved the following three facts in this process of recognition.

(1) They are flying over Manhattan.

(2) The knower sees Central Park below them.

(3) Central Park is in Manhattan.

(1) is the recognized fact, and (2) is a ground for this recognition. What attracts the attention of the skeptic is (3). (3)'s relationship to the recognized fact (1) is quite similar to the relation between an epistemic assumption and a supposition. First, (1) cannot be true unless (3) is true, and the knower cannot know (1) unless he knows (3). Thus (3) is epistemicaly relevant to the recognized fact in the same way an assumption is epistemicaly relevant to a supposition. Moreover, (3) is not made the object of focal consciousness in this process. The knower doesn't pay any attention to (3) in this process. Thus, there is at least a reason to suspect that (3) is an epistemic assumption for (1), and the skeptic asserts that it really is.

If (3) is an epistemic assumption in the sense we specified above, then we cannot avoid the skeptical conclusion that this 'recognition' of (1) is actually nothing but a highly plausible supposition, and that the

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recognition of the truth in our sense is impossible. In other words, if (3) is only assumed , then we cannot reject the accusation that (1) is only taken as true and can turn out to be false if (3) turns out to be false. We have no difficulty imagining a situation in which (3) is false,e.g. a situation in which Central Park has been transplanted to Los Angeles. As a matter of fact, there are many other facts that have a similar relationship to (1). Among them are:

(4) The knower isn't hallucinating.

(5) The knower isn't a brain in a vat.

All of them are equally epistemicaly relevant to (1), and neither of them is explicitly recognized in the process of the recognition of (1). Now the skeptic's argument is clear. He argues that the knower doesn't know that they are flying over Manhattan since (1) cannot be true unless all of (3),(4), and (5) are true and he has never checked their truth. It is a familiar skeptical argument.

The crucial point in this argument is whether (3), (4), (5) are epistemic assumptions or are known to be true. Even if they are epistemicaly relevant to (1), if the knower knows their truth, they don't work against the knower's recognition of (1). Skeptical argument exercises its full force only when they are epistemic assumptions

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that have real possibility of turning out to be false. What is their epistemic status? do they really make the recognition of (1) vulnerable to criticism?

We will argue that they are not epistemic assumptions, but are known to be true. We argue that there is an essential difference between the case of mediated knowledge and the case of the recognition of the truth. We first compare a typical example of supposition with a typical case of recognition to make it clear what their difference is and how this difference makes the extension of critical argument from the case of supposition to that of recognition dubious.

(A) A case of supposition.
In an airplane, I hear an announcement that we are flying over Central Park now. I 'know' that we are flying over Manhattan.

(B) A case of recognition.
I look out of the window and see Central Park. I 'know' that we are flying over Manhattan now.

These two cases have a similar structure, namely both of them have the following elements. (I) The thing ('fact') claimed to be known. (II) The ground for this claimed knowledge. (III) Things ('facts') that are epistemicaly

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relevant to (I). Thus, (A) and (B) have the following structure.

(A-I) I am flying over Manhattan. the claimed

(A-II) I hear the announcement that we are flying over Central Park. the ground

(A-III) The announcement is true. Central Park is in Manhattan. ... the conditions epistemicaly relevant to the claimed

(B-I) I am flying over Manhattan. the claimed

(B-II) I see Central Park below me. the ground

(B-III) Central Park is in Manhattan. I am not hallucinating. I am not a brain in a vat. .... the conditions epistemicaly relevant to the claimed

To fairly evaluate the skeptical argument, we have to make it clear what feature of the structure (A-I) - (A-III) makes the claim (A-I) vulnerable to criticism. If this feature exists in (B), too, we have to conclude that (B-I) is also vulnerable to the same type of criticism, and the skeptical conclusion is inevitable. On the other hand, if this feature is absent in (B), we have to conclude that the skeptical argument is based on an unwarranted extension of the concept of epistemic assumption.

We argue that it is the mutual independence of the

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ground (A-II) and the epistemicaly relevant fact (A-III) that makes (A-III) an assumption and that makes the claim (A-I) vulnerable. We also argue that this independence doesn't exist in (B), namely in the case of recognition. To see this point, we first have to review the criticism of (A-I).

> criticism of knowledge claim (A-I) in the case of supposition.
>
> I claim that I know that we are now flying over Manhattan. However, what I actually recognize is the announcement, and I cannot conclude that we are flying over Manhattan unless the announcement is correct. The problem is that my hearing of the announcement is quite independent of the reliability of announcement. Thus, it is possible for me to hear exactly the same announcement in two flights, in one of which the announcement is true and in another of which it is false. Therefore, I cannot know the truth of (A-III) from (A-II), and I have to assume the truth of (A-III). It is this assumption that makes (A-I) vulnerable to criticism.

This argument, which we think is sound, relies on the epistemic independence of the ground (A-II) and the relevant facts (A-III) in the sense that to know the former

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doesn't guarantee the truth of the latter; on the fact that we cannot know whether an announcement is reliable or not from the announcement itself. If they are not epistemicaly independent and the ground has such a nature that we can know the truth of (A-III) from our recognition of the ground, then this critical argument loses its force. Of course, this independence or dependence is not a logical or formal one -- (e.g. the relationship between P and (P & Q) is logically dependent one) --, but rather an epistemic one. That (A-III) is epistemicaly independent of (A-II) means that we can know the truth of (A-II) whether (A-III) is true or false.

We think that the ground (B-II) and the relevant facts (B-III) in the case of recognition are not epistemicaly independent, and therefore the skeptical argument has no respectable force there.

First, let's review a possible criticism (a skeptical argument) of knowledge claim (B-I).

> <u>criticism of knowledge claim (B-I) in the case of recognition</u>.
>
> I claim that I know that we are flying over Manhattan, but what I have actually recognized is that I am flying over Central Park. I haven't checked whether this park hasn't been transplanted from Manhattan to Boston since I saw it last time.

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> Neither did I reflect on this wild possibility when I saw Central Park. I only assumed that Central Park is in Manhattan in my recognition. If this assumption turns out to be false, it cannot be true that I am flying over Manhattan. Therefore, I cannot claim the knowledge of (B-I). It is, at best, a highly plausible supposition.

This argument, which we think is not sound, relies on the assumption that we can see that we are flying over Central Park without knowing that Central Park is in Manhattan. As we noted in the last section, this assumption is based on the synthetic view that our experience of recognition has many parts each of which we can know separately. Such a view seems plausible only when we forget the actual experience of recognition. The absurdity of such a view becomes clear the moment we remember or even imagine the experience of seeing Central Park from the sky. We never see Central-Park-in-isolation, we never see Manhattan-minus-Central-Park, we never compare our recognition of Central-Park-in-isolation and that of Manhattan-minus-Central-Park and judge whether this 'figure' and 'ground' fit together like pieces of a jigsaw puzzle. What we actually see is Central-Park-surrounded-by-the-buildings-of-Manhattan. Even this long ugly phrase doesn't exhaust the content of object we see from the sky, the city of New

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York. It is a city with indefinitely rich properties like any other actual object of experience. When I see Central Park from the sky, I see that Central Park is in Manhattan in the same act. I know (B-I), (B-II), and (B-III) at once, not as three distinct propositions, but as a single experience of seeing a-city-with-a-park-with-.... This experience itself has inexhaustible richness just as the city itself has inexhaustible richness. When we talk about this experience, we have to abstract some aspects, and put the contents of experience in the form of statements. (B-I), (B-II), and (B-III) are the results of this abstraction. The skeptical argument assumes that our recognition involves separate acts of the recognition of the truth of three distinct propositions independent of each other, and that these three acts of recognition have a certain logical and temporal order among them; it ignores the fact that (B-II) is neither prior nor posterior to (B-I).

On the other hand, if you recognize Central Park in such a way that you recognize something as Central Park without knowing that it is in Manhattan, it only shows that your knowledge of Central Park and of New York is similar to our knowledge of a foreign language that we have just started to learn. In the latter case, we often 'know' the meaning of word without knowing the meaning of the sentence in which this word is embedded. In both cases, our

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'knowledge' is fragmented, incomplete, and unreliable. We can hardly say that we know the objects in such cases.

This analysis of the skeptical argument applies to other cases. Let's think about a case in which the skeptic denies that we know that we have hands on the basis that we only assume that we are not a brain in a vat (case (C)). The structure of this case is the following.

(C-I) I have hands.

(C-II) I have an experience of having hands.

(C-III) This experience is real. (I am not a brain in a vat.)

Under the assumption of the independence of (C-II) and (C-III), the skeptical argument goes like this: You claim that you know that you have hands, but all you actually recognize is that you have an experience or sensation equivalent to that of having hands. You haven't checked whether they are real or not, and you cannot do such a check since all you have is this sensation or representation. Therefore you don't know that you have hands; all you know is that you have an experience that is like that of having hands.

Can we have an experience of having hands without knowing that this experience is veridical or real? In other words, can we have an experience that is

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indistinguishable from that of having real hands without knowing whether this experience itself is veridical or not? If we have such an experience at all, this means that we don't know what a real or veridical experience of having hands is, namely an experience of having real hands. For if we have a decoy X that is absolutely indistinguishable from the real X, it means that there is no distinction between real X and decoy X in themselves, or that we as a cognitive agent can never know what real X is. However, if we don't know what is the experience of having real hands, how can we know that this experience we have now is an experience of having hands, i.e. an experience that is indistinguishable from that of having real hands? Unless we know what it is to have real hands, we cannot identify anything as an experience of having hands. The skeptical argument is based on a false assumption that we can have an experience of X-ing without ever really X-ing, and this assumption is based on a view that all kinds of our experience are, like an announcement on the plane, representations that can be true or false depending on whether reality corresponds them. Our experience of hands is not of this nature; our experience of hands is not a representation that may be either true or false without itself being changed. Our experience of hands is our having hands; they are not two things one of which is the representation and another of which is the represented.

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2.6. Conclusion

We have compared two radically different views of knowledge in this chapter, the traditional view and the Aristotelian view. Their difference ultimately consists in how they see the process in which we come to know something we previously didn't know. In other words, this difference consists in how each view answers the age old problem of the possibility of knowing[68]: how it is possible that we come to know something that we didn't already know.

According to the traditional view, this is a process of synthesizing a representational state that meets certain conditions. In other words, it is a kinesis process. The final product of this process that meets the condition is called justified or grounded. Therefore, justifiedness is an essential feature of knowledge, and atheoretical knowledge as ungrounded knowledge is therefore not knowledge at all.

According to our Aristotelian view , this process of recognition of truth is an activity or actualization of our capacity (entelecheia) of realizing the truth when we encounter it under certain conditions. This is a capacity that gives a cognitive aspect to our abilities of seeing,

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68. See Aristotle Posterior Analytics Book I-1.

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hearing, and the other sensations. To know is to exercise and fulfill this capacity through an engagement in an activity. Since this is an energeia process, it has no goal to be achieved nor any parts requisite for its realization; as seeing is the only way to see and there are no constituent processes whose sum is seeing, we recognize the truth just by recognizing it.

However, this doesn't mean we achieve the recognition as a kind of miracle. We can actualize this capacity only when we have completed and possess this capacity. We have to have already acquired or completed this capacity to know something when this something comes to us. This completion/acquisition is a kinesis process from a potentially cognitive agent to an actual cognitive agent. We experience this process, i.e. the process of becoming an actual cognitive agent, in the earliest stage of our life in which we also are transformed from a potential linguistic agent to an actual linguistic agent.

According to this view, the function of epistemic justification is the guide that leads the cognitive agents to a situation in which they can fulfill a capacity they already possess. This is the role our parents used to play when we were in our infancy and still didn't have the full-fledged and autonomous cognitive capacity.

Therefore, it is the activity of the full-fledged cognitive agent itself that ultimately constitutes

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knowledge, not the work of guide once the cognitive agent has completed its own cognitive potentiality, and if the cognitive agent actualizes this capacity without a help of any guide, it also constitutes authentic knowledge. Atheoretical knowledge has to be regarded as this type of knowledge.

We showed that the conflict between these views ultimately amounts to the conflict between a powerful form of skepticism and its uncompromising critique, and that this form of skepticism doesn't have the force that it might seem to have at the first glance. Thus, we conclude that we have established a minimum credibility of the legitimacy of atheoretical knowledge.

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CHAPTER 3 CRITIQUE OF NATURALISTIC EPISTEMOLOGY

3.0. Introduction

In the previous chapter, we have been engaged in the critique of the traditional view of knowledge in order to establish an alternative view of knowledge. We performed this critique in accordance with the internal logical structure of the traditional view as we interpret it. In a sense, we constructed the traditional view in this process. Such a method was necessary for clarifying the essential difference of these two views of knowledge.

However, if we look at the actual contemporary philosophical practice directed to the problem of knowledge, namely the actual works in the field called "epistemology", what we find is not a single view that can be called "the traditional view" but many different forms of the two fundamental principles of the traditional view (beliefism and justificationism). This variation is by no means a simple reflection of different tastes of different philosophers, but the reflection of one important feature of the traditional view itself. That is the feature that

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the traditional view inevitably splits into radical skepticism and the naturalistic view of knowledge if the internal criticism of the traditional view is radicalized. We already observed how the traditional view leads us to the skepticism, and that the "ground" of the skepticism is much weaker than it first appears. We can say that the naturalistic view of knowledge, which is the most influential view in the contemporary epistemology, is an effort to escape skepticism from within the traditional view. This means that the real critique of the traditional view of knowledge is completed only through the critique of the naturalistic view of knowledge.

Moreover, the critique of the naturalistic view of knowledge has an independent strategic value for our project because of the internal connection between the naturalistic view of knowledge and the naturalistic view of language. Therefore, the critique of the naturalistic view of knowledge will give us an important ground for establishing the humanistic view of language against the naturalistic view of language. The purpose of this chapter is to prepare this ground through the examination of naturalism in contemporary epistemology.

3.1. Epistemic Internalism and Epistemic Externalism

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As we indicated above, the basic idea of naturalism in epistemology is formulated through the realization of the fundamental shortcomings of the "old" version of the traditional view of knowledge. We may consider naturalism in epistemology as the "new" version of the traditional view of knowledge. In the widely accepted terminology, the old version is called "internalism" and the new version is called "externalism". Both internalism and externalism accept beliefism and justificationism in our sense. Their difference consists in the different views on what type of features of a belief should count as epistemicaly justifying features.

Internalism holds that the justifying features of a belief have to be recognizable by or accessible to the consciousness of the knower himself.[1] On the other hand,

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[1]. Slightly different expressions are used for characterizing this element of consciousness characteristic of internalism by different philosophers in different contexts. Followings are the examples.

> ...<u>cognitive grasp of the reason</u> why [a belief is likely to be true]... (BonJour 1985, p.34.)
>
> ...when a belief is justified, the believer <u>knows it is justified</u>... (A.Goldman 1979, in Moser 1986,p.172; cf.BonJour 1978. pp.104-5.)
>
> ... <u>in possession of any justified reason</u> for his belief... (BonJour 1978, in Moser 1986,p.104)

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externalism is characterized by the view that such recognizability from the knower's point view is irrelevant or not necessary for the epistemic justifiedness of a belief.

We can correctly grasp the basic idea of naturalism in epistemology only by examining its origin, namely the process in which externalism formulates itself as a necessary alternative to internalism through the criticism of internalism within the traditional view. In other words, we can correctly understand externalism only by going though the criticism of internalism. This essential connection of internalism and externalism determines the structure of this chapter.

3.2. Critique of Internalism

3.2.1. Foundationalistic Internalism as Classical Epistemology

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> ... have cognitive awareness of the justifying conditions... (Moser 1985, p.124.)

The point is that the knower can be consciously aware of his belief's having particular features.

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Historically speaking, the most dominant position within traditional epistemology has been the one that is now called epistemic foundationalism, which holds that there exists a special kind of knowledge which serves as the solid foundation of the whole edifice of human knowledge. The idea of foundationalism itself, however, is by no means specific to the accepted view of traditional epistemology. For example, Aristotle's concept of demonstrative knowledge in Posterior Analytics can be called foundationalism, but his basic concept of knowledge shares little with the accepted view or with representationism.

Nevertheless, since Descartes, who is a foundationalist and the initiator of internalism at the same time, foundationalism and internalism as the original version of the traditional view of knowledge have had very strong ties in philosophy so that epistemic foundationalism is almost equated with foundationalistic internalism, and foundationalism in this sense has become a kind of classical theory in modern epistemology. In a word, this connection between epistemic foundationalism and epistemic internalism consists in a single epistemic ideal that the whole of human knowledge should and can be constructed or reconstructed on a universal and rational basis through reflexive and critical activity, namely philosophy. We may call this ideal the rational and critical ideal of knowledge. It is this ideal that has motivated such

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philosophers as Descartes, Locke and Kant and that is responsible for the historical situation that epistemology has dominated the whole history of modern philosophy.

However, this critical and rational ideal of knowledge has become the target of heavy criticism in contemporary philosophy as a perception grows among philosophers that modern philosophy dominated by epistemology fails to keep its original promise of constructing the rational system of knowledge.[2] In contemporary Anglo-American philosophy, this criticism of the modern ideal of knowledge is realized as detailed criticism of foundationalistic internalism, and we can find its best version in what we call "Sellars-Bonjour argument". The first part of this chapter, therefore, consists in the examination of the nature and the real scope of this argument.

3.2.2. Sellars-BonJour Argument

The fundamental tenet of foundationalistic internalism is

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2. It is wrong to regard this repeated criticism as the criticism of epistemology as a science of knowledge. This is only a criticism of foundationalistic internalism in epistemology; it doesn't apply to other views of knowledge. In Rorty 1979, Rorty considers himself as engaging in the critique of epistemology itself, but what he calls 'epistemology' there is fundamentally foundationalistic internalism, not the generic concept of epistemology as a science of knowledge.

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that there are a class of beliefs called 'basic beliefs' that can serve as the foundation,i.e. the true premises or evidence for inferential epistemic justification of other beliefs without themselves being justified through inference.[3] The possible ranges of the subject matter these basic beliefs are about varies from one philosopher to another, but the followings are the examples of possible proper objects for the basic beliefs: one's own mental states and attitudes, the contents of perceptions, a priori principles such as axioms of logic and mathematics, the meanings of one's own language. The common feature of 'basic beliefs' is that they are almost always true and that we feel it difficult to give them significant justification or ground though we take these "beliefs" as knowledge.

Obviously the most straightforward way to criticize such a position is to show that the alleged 'basic beliefs' are not basic beliefs in the intended sense case by case. However, the problem of this type of criticism is that it can only show that a particular version of foundationalism is wrong, but cannot show what is wrong with the very idea of foundationalistic internalism itself. If we think that the very idea of 'basic belief' itself has something deeply

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3. For a lucid explication of its principles and possible variations of foundationalism, see R. Chisholm, "Myth of the Given" in Chisholm 1982, pp.126-147.

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wrong or internally inconsistent , we have to show not that particular beliefs are not basic, but that there can be no basic beliefs in the intended sense. The criticism that was originally presented by W.Sellars and recently reformulated in a series of essays of Laurence BonJour is intended to show this latter.[4] The whole argument of the Sellars-BonJour criticism is concerned with the epistemological status of basic beliefs: whether they themselves are justified or not; if they are, how; if they are not, is it consistent with two principles of traditional epistemology (beliefism and justificationism)? Let's review this criticism.

What foundationalistic internalism has to claim about basic beliefs is that they are not just beliefs but the special type of beliefs that count as instances of knowledge because of their possession of general epistemicaly justifying features which cannot be accounted for in terms of inference. For example, being clear and distinct is such a justifying feature for Descartes' foundationalistic internalism. Each version of foundationalism has to have its own 'justifying feature'. Not all beliefs can be 'basic beliefs', but only those with such a 'justifying

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4. This argument is also called the doxastic or epistemic ascent argument. See Sellars 1956, section VIII, BonJour 1978, and BonJour 1985, Part One. Also see Sosa 1980.

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feature' can. Thus, Sellars and BonJour argue[5], for a particular belief to be a basic belief and to function as a valid foundation for the justification of other beliefs, the following two claims have to be established: (a) this belief has feature E, (b) all beliefs with feature E constitute knowledge or are highly likely to be true because of E. They are meta-epistemic statements about the original objective belief. Unless these two statements are true, the original 'basic belief' will remain an unjustified belief, and cannot be knowledge according to the accepted view of knowledge (justificationism). For internalism, moreover, the justification of the objective basic belief has to be achieved through the knower's recognition of the correctness of these two meta-epistemic statements. For if the knower doesn't know whether and why (a) and (b) are true , he cannot justify the basic beliefs by means of (a) and (b), and, from an internalistic point of view, these basic beliefs cannot be justified and cannot be knowledge. In other words, the knower has to know the truth of these two meta-epistemic statements to know the truth of a basic belief. In Descartes' case, Descartes has to know that it is true that all clear and distinct ideas correspond to reality to know that a particular given clear and distinct idea (e.g. the "Cogito") corresponds to

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5. Sellars 1956, in Sellars 1963, pp.168-169, and BonJour 1978, in Moser 1986, p.102.

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reality.

This, however, means that the original 'basic' beliefs are not basic at all if they are justified since they are justified on the basis of other beliefs (a) and (b); or that they may be basic but cannot be justified, thus, cannot be knowledge if the knower doesn't know whether (a) and (b) are true. Therefore, there cannot be any basic beliefs in the sense intended by foundationalistic internalism.

This surprisingly simple argument actually reaches the very heart of foundationalistic internalism and criticizes or 'destroys' it at its most essential point.

3.2.3 The Real Scope of Sellars-BonJour Argument.

Sellars-BonJour argument really shows that Descartes-type foundationalistic internalism is inconsistent. What is still not clear about this argument, however, is the real scope of this argument, in other words, what this argument really criticizes and destroys. For this argument shows the inconsistency of the position based on the following three components: (1) foundationalism ("there are basic beliefs which found other beliefs but are not founded in the same way"), (2) justificationism ("every belief has to be justified to be knowledge"), and (3) internalism

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("epistemic justification is possible only when the justifying feature is recognizable by the knower"), but doesn't tell us which of these elements are wrong. This means that it is not self-evident, despite the widespread agreement, that the Sellars-BonJour argument is the refutation of foundationalism though their intention is clearly the refutation of foundationalism.[6]

In fact, contrary to this 'agreement', it is not foundationalism, but the combination of justificationism and internalism that is the real target of this argument. This means that foundationalism itself is free from this argument despite Sellars and BonJour's titles. This becomes clear if we think about what foundationalism itself boils down to. Its essential idea is that there is a special part in human knowledge that serves as the foundation for other parts and that is not founded by other parts in the same way. Foundationalism itself only says that the foundation is not founded in the way what it founds is founded. It is neutral to the question of whether the foundation itself is founded on something else. Sellars-BonJour argument is based on the very idea that

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6. The intention of Sellars and BonJour is manifested by the titles of their essays. The section of Sellars 1956 where he starts this argument is titled, "Does Empirical Knowledge have a Foundation", and the title of BonJour's paper is "Can Empirical Knowledge Have a Foundation?"
As for the seeming agreement that this argument is addressed to foundationalism, see Sosa 1980 in Moser 1986 pp.160-161, and Moser 1985 pp.119-120.

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this foundation itself has to be justified (founded) to be a foundation. This idea itself is not a part of foundationalism but the core of justificationism. Therefore, if a version of foundationalism accepts the idea of groundless foundation, it becomes perfectly free from the criticism of the Sellars-BonJour argument[7]. If the concept of groundless foundation sounds unintelligible, a metaphor of edifice or building, which is actually sometimes used for the illustration of foundationalism in epistemology[8], will make it intelligible. Every building has to be based on a firm ground. This is the idea of foundationalism, but it doesn't necessarily imply that this ground itself, namely the Earth, has to be grounded on something else, e.g. gigantic turtles or elephants. A foundationalist can say that the Earth itself has no ground and it is floating in the air. As a matter of fact, there is no "ground" that supports the Earth from below. Therefore, we can say that the Sellars-Bonjour argument doesn't touch the heart of foundationalism itself.

Moreover, this argument doesn't directly criticize

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7. We think that it is quite possible to interpret Aristotle's foundationalism developed in Posterior Analytics as a version of this type though we cannot pursue this interpretation here. Aristotle thinks that founding knowledge and founded knowledge have definitive qualitative difference, and the latter or the faculty of the latter is called nous while the former is called episteme. See ibid. II-19 100b:5-15.

8. For example, see Chisholm 1982 pp.126-127.

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justificationism, either. In other words, we cannot even say that justificationism of the traditional epistemology is wrong from this argument. For if a version of justificationism drops the condition of internalism and accepts the possibility that these two meta-epistemic statements (a) and (b) are true without the knower's knowing that they are true, the basic belief becomes justified by them and the regression stops here. In such a case, the knower knows that his basic belief is true without knowing why it is true though it is justified, metaphorically speaking, where he is 'absent'. However, this type of justificationism already has ceased to be internalism; it radically departs from the rational ideal of knowledge in modern philosophy. This is epistemic externalism.

On the other hand, if a position in epistemology accepts both justificationism and internalism, every step of Sellars-BonJour argument applies even if this position doesn't take an explicit form of foundationalistic internalism like Cartesianism.

Therefore, the Sellars-BonJour argument has quite a different and wider range of application than its authors thought. It doesn't apply to foundationalism as such, but it does apply all forms of internalistic justificationism. It actually applies to BonJour's own position, namely internalistic coherentism. In the rest of this section, we

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will consider three forms of internalistic justificationism to see this generality of the Sellars-BonJour argument. We call them non-cognitive internalism, self-justificationism, and internalistic coherentism. They represent three important moments in the way of thinking called "epistemic internalism" that determine the form of its particular variants.

3.2.3.1. Non-cognitive Internalism.

One way of conceiving internalism as a coherent position within the traditional view of knowledge is to think that the ultimate ground that justifies basic beliefs is a kind of states of mind that are radically different from beliefs. They are usually characterized as non-cognitive mental states.

This position is already well criticized by BonJour. Therefore our discussion here is nothing but a review of his argument[9]. The basic idea of this position is that basic beliefs are justified by certain primitive non-cognitive states. It is hoped that the regression doesn't occur for these states because of this non-cognitivity. For example, suppose that it is a basic belief that I have hands. According to this view, I know the truth of this

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9. The main targets of BonJour's argument are C.I.Lewis and A.Quinton. BonJour 1978 in Moser 1986 pp.106-112, and BonJour 1985 pp.65-79.

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belief and this belief is justified not by my knowing something else but by my possessing certain primitive non-cognitive states,e.g. the experience of having hands. These 'non-cognitive states' are called by such various names as "intuition", "apprehension", "direct apprehension", "immediate awareness", and so on.

The question we have to ask here is not whether we really have these states or what they exactly are, but whether there can be an epistemic justification relation between the basic beliefs and those states under the conditions of the internalistic version of the traditional view. In other words, we have to ask whether such a way of thinking still remains the realm of the traditional view or it tacitly introduces a principle that negates the traditional view the defence of which is the raison d'être of non-cognitivism.

This question ultimately reduces to the following question: whether possession of states that have no cognitive contents to the possessor, namely, tell no truth to the possessor can justify the beliefs of the possessor under internalistic conditions. For if we justify our belief (e.g that I have hands) by appealing to something else's being the case (e.g. that I have this primitive experience of having hands), we,in turn, have to say why we can assert that this second content (that I have such and such experience) is true rather than false. This means

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that internalists cannot say that their basic beliefs are true because such and such is the case without mentioning whether this truth is known by the holder of the object belief. If an internalist appeals to a certain fact for the justification of a belief, the internalistic condition requires that this fact be recognized as such by the possessor of the belief, and this means nothing but that one cognition of a cognitive agent can be justified only by another cognition of the same agent, and the Sellars-BonJour argument immediately applies to this second 'primitive' cognition.

Of course, if we don't accept such internalistic conditions for epistemic justification, we can appeal to a certain thing's being the case to justify a belief without falling victim to the Sellars-bonJour argument. For example, an externalist can justify a person's belief that he has hands by appealing to the fact that he is actually in a non-hallucinating state and say that this person knows this fact, without mentioning whether this person knows or can be aware of this meta-epistemic fact that he actually doesn't hallucinate. According to externalism, a belief can be justified as knowledge even if the possessor of the belief has no way of realizing the ground of his/her belief insofar as this ground is true. Internalism, to the contrary, asserts that the epistemic autonomy of a cognitive agent is essential for knowledge-hood so that one

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cannot possess genuine knowledge about anything whose ground he/she is rejected the access to. This means that we cannot appeal to any facts if we try to avoid the regression within the condition of internalism since a fact can enter the epistemic justification only when this is recognized or recognizable by the cognitive agent him/herself.

Is it really possible to justify a basic belief without appealing to any fact? The answer obviously seems "No". Even if these primitive states are non-cognitive in the strict sense of the word and have no cognitive contents, a belief can be justified only by the fact that a person possesses these states, and if this fact is appealed to in the epistemic justification, the condition of internalism immediately requires that this fact be recognized by that person. Thus, what kind of states they are is quite irrelevant for our current question. Insofar as an epistemic justification is given under internalistic conditions, one cognition always has to be justified by another cognition, and the further justification becomes necessary for this second cognition under the traditional view. Therefore, insofar as we accept traditional internalism, any mental state needs its own justification if it can justify others, and it can avoid the obligation of being justified only when it lacks the ability to justify others. This means that non-cognitivism cannot

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rescue internalism from the attack of the Sellars-BonJour argument.

3.2.3.2. Chisholm's Self-Justificationism.

Such considerations naturally lead us to another idea that internalism can escape Sellars-BonJour argument if there are beliefs that can be justified by themselves. We call such an idea self-justificationism.

In contemporary epistemology, this view is mainly advocated by R.Chisholm.[10] BonJour simply dismisses it by saying,"that extremely paradoxical remark [that certain cognitive states justify themselves] hardly constitutes an explanation of how this is possible."[11] However, if we reflect on the process in which this self-justificationism emerges as a "hope for internalism" through the criticism of non-cognitivism, we have to recognize the seductive appeal this view possesses. Self-justificationism is by no means a "paradoxical remark" but a necessity determined by the very nature of epistemic justification. It deserves a close examination.

Chisholm's basic idea is that a certain class of beliefs, namely beliefs about our own psychological attitudes such

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10. Chisholm 1982 pp.126-147.

11. BonJour 1978 in Moser 1986 p.108.

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as believing, desiring, or intending, are self-justified and don't have to be justified by other beliefs while they can serve as the ground for other beliefs.[12] The logic is simple: they justify themselves, therefore they don't have to be justified by other beliefs. Thus, according to Chisholm, we don't have to justify our belief about what we believe now in order to claim that we truly know what we believe. If this view is correct, it would definitely escape the spur of the Sellars-BonJour argument.

However, the question we have to ask here is whether such a view still remains to be a version of justificationism. In other words, the question is whether something's unmediated relationship with itself can constitute "justification" in any sense of the words. The most remarkable aspect of this question is that if anything can be self-justified in this way, everything can be self-justified in the same fashion. The root of this potential self-justifiability consists in the pure self-referentiality of the proposed process of self-justification; when a belief is justified by itself, the only feature of this belief that is mentioned is that of being itself and no specific features that may distinguish it from other beliefs are mentioned. Otherwise, the process of self-justification of a belief has to contain a process in which it is asserted why this

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12. Chisholm 1982 p.138. He calls properties recognized in this way 'self-presenting'. See ibid. pp.9-11.

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belief, but not other beliefs, is self-justifiable by appealing to something other than itself, and, thus, ceases to be self-justification in the intended sense.

Therefore, self-justificationism, which is introduced only to save the internalistic version of traditional view, inevitably undermines justificationism, which is the most important pillar of the traditional view, by making every belief equally justifiable as knowledge. This is the real outcome of the "seduction" of self-justificationism. On the other hand, if a version of self-justificationism, like Chisholm's, doesn't lead us to this conclusion, we have to suspect that such a view is based on a deep self-deception that conceals the self-destructive nature of the concept of self-justification. Let's take a closer look at Chisholm's texts to see whether this is the case or not.

As a matter of fact, Chisholm's relationship to the concept of self-justification is by no means an easy one, and his anxiety is expressed in the passages like this:

> Paradoxically, these things I have described by saying that they "justify themselves" may <u>also</u> be described by saying they are "neither justified nor unjustified" The two modes of description are two different ways of saying the same thing.
> (Chisholm 1982, p.137)

Here, Chisholm equates self-justification with the

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abolishment of the distinction between being justified and being unjustified. This is actually a position that is very close to the realization of the untenability of justification itself. However, one cannot keep this equation without really abolishing the concept of epistemic justification itself. Insofar as we retain the concept of epistemic justification, these two things can be never equated: a belief's being self-justified presupposes that this belief is under the obligation of epistemic justification to become knowledge; on the other hand, that a belief is neither justified nor unjustified suggests that this belief exists in the realm in which the obligation of epistemic justification doesn't apply. The former (the presence of the obligation of epistemic justification) is a necessary consequence of justificationism, while the latter (the absence of such an obligation) can be the case only when justificationism is wrong. They cannot be the same. This indicates that the concept of epistemic justification is so radically modified in Chisholm's thought without being noticed by himself that the new concept of epistemic justification almost amounts to the negation of justificationism. The following passage suggests that this is the case:

> Normally, as I have suggested, one cannot justify a statement merely by repeating it. ...But to the question for "What is your justification for thinking

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> you know that you believe so and so?" there is nothing to say other than "I do believe so and so." ...
> We may say, then, that there are some statements which are self-justifying, or which justify themselves. ... A statement, belief, claim, proposition, or hypothesis may be said to be self-justifying for a person, if the person's justification for thinking he knows it to be true is simply the fact that it is true.
> (Chisholm 1982, p.137; the underline is A.K's.)

What he says here is that statements can be called self-justified if the one who asserts them has no other ways to justify his/her assertion than to repeat them. If Chisholm doesn't mean by this that one can always appeal to self-justification as a special mode of epistemic justification whenever one fails to give an adequate ground for one's belief in the conventional manner, which amounts to a radical negation of the concept of epistemic justification as well as justificationism, what Chisholm has to show is what kinds of beliefs belong to this class of self-justifiable beliefs. However, if Chisholm is to do this classification, he has to justify this classification itself. He has to say why some group of beliefs are self-justifiable and others are not.

Actually Chisholm believes that only beliefs about one's own psychological attitudes are self-justifiable. However, this meta-epistemic statement has to be true; it cannot be Chisholm's stipulation. Moreover, the truth of

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this meta-epistemic statement has, according to internalism,to be known or recognizable by the possessor of the original belief if that original belief about one's own belief is justified and becomes knowledge through self-justification. Otherwise, the believer would know that his belief about his own belief (what he believes now) is true without knowing why it is true, which amounts to the abandonment of internalistic justificationism. In other words, if my belief about my own belief is to be knowledge, it has to be justified not by itself, but by my knowledge or recognition of the truth of the meta-epistemic statement. This amounts to saying that these self-justifying beliefs cannot be justified under the internalistic condition, or have to be justified by something other than themselves; in either case, they are not self-justifying in the intended sense.

Here we cannot escape this dilemma by saying that the recognition of meta-epistemic statements is only <u>potential</u> or <u>tacit</u> recognition and that they don't have to be actually recognized or internalisticaly justified. For in this case a potentiality is potentiality only because it is actualized (actually recognized) in certain conditions; potential recognition that cannot ever be actualized is not potential or tacit <u>recognition</u>. Moreover, this cannot be a mere belief when it is actualized, it has to be valid recognition, has to be justified, according to

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justificationism. Thus, it is a legitimate question how our potential recognition of meta-epistemic statements is justified when it is actualized.

Thus, the reality concealed by the 'paradoxical' expression "self-justification" is that the choices open to an traditional internalist are, (1) to give up justificationism, or (2) to give up internalism.

3.2.3.3. Internalistic Coherence Theory of Knowledge

The position we examine here is the one hold by L.BonJour himself. We call it internalistic coherentism. Ironically, this position becomes the most powerful proof of the general applicability of the Sellars-BonJour argument to internalism.

As we have repeatedly seen, it is traditional internalism that actually causes the trouble pointed out by the Sellars-BonJour argument. Since BonJour himself is an internalist, his own position is no exception to this criticism though he himself launched Sellars-BonJour argument to create room for his coherentism by criticizing "foundationalism". Of course, this doesn't mean that so-called coherence theory itself is criticized by the Sellars-BonJour argument. If one doesn't accept the internalistic condition for justification, coherentism as well as justificationism is free from this criticism. What matters is the traditional internalism that seeks a special

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mode of epistemic justification for all instances of knowledge.

The basic tenet of the coherence theory of knowledge is that a belief's being epistemicaly justified (being knowledge) consists in its belonging to a certain coherent overall system of beliefs which is accepted by the cognitive agent.[13] This thesis itself has no internalistic element. According to an externalistic view, it is perfectly possible that a belief is coherent with other beliefs and thus that it is knowledge, without the cognitive agent's recognizing this coherence. Against such a view, the Sellars-bonJour argument has no force. However, once we put this coherentism under the internalistic condition of justification, the story becomes different. For this epistemic justification by coherence has to be achieved by way of the recognition of this coherence. For a belief to be justified, in this case, it has to be recognizable by the cognitive agent that (1) this belief belongs to a system of beliefs, (2) this system is coherent, and (3) every coherent system of beliefs constitutes knowledge. The strength of the coherence theory of knowledge is that it seems to be able to diffuse the possibility of regress by resolving the process of

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13. BonJour 1985, chap.5.

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epistemic justification into a vast network of beliefs. However, such a strategy can work only when this network is actually coherent. If the system is not coherent, to appeal to a belief's relationship with the system of beliefs is of no use. This means that we cannot appeal to the concept of coherence among beliefs when we want to justify (2), namely our belief that our actual system of beliefs is coherent, since we would never recognize actual coherence of our system of beliefs if we have to ask whether our belief about the coherence among particular beliefs is coherent with other beliefs we already possess whenever we want to know whether we actually recognize the coherence among beliefs. Thus, in coherentist justification, at least one belief has to be justified without appealing to the concept of coherence among beliefs, namely a belief that one's current system of belief is coherent. As has already been seen, this belief which is fundamental for coherentism cannot be justified by non-cognitive states or by self-justification. Therefore, this belief has to remain unjustified, or one has to invent another device for justifying it. If one chooses the latter alternative, the Sellars-BonJour argument immediately applies to that.

Thus, internalistic coherentism reproduces exactly the same situation as other versions of internalism did. It has to give up the traditional view itself or, at least,

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the internalistic condition on epistemic justification, otherwise, it has to fall victim to the Sellars-BonJour argument.

3.2.4. Non-truth Conductivity of Internalism.

Though the Sellars-BonJour argument is the most essential one against internalism, there is another one which is no less serious for the validity of epistemic internalism. That is the argument concerning the truth conductivity of internalistic justification[14]. Insofar as we accept beliefism of the traditional view, the epistemic justification for internalism boils down to each knower's critical assessment of his own subjective cognitive states(beliefs). Through the detection of general justifying features, the knower critically and reflectively chooses the beliefs that have the best reasons to conduct the knower to the truth. Knowledge can be regarded as the result of such rational choice. Therefore, our knowledge in its best form, according to internalism, can attain the highest degree of rationality, and this is the underlying motivation of internalism. However, the cognitive

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14. Within epistemology, this argument is launched by externalists. See Steven Luper-Foy,"The knower inside and out", in Synthese 74(1988) 349-367.

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rationality thus attained is double edged since it has no internal connection with the truth itself; in a sense, it is self-contained rationality without any connection with something other than itself since the question asked through the process of epistemic justification is not what is true, but what is reasonable to believe.

According to this view of knowledge, metaphorically speaking, we are a cognitive agent confined in a room whose inner walls are our beliefs or cognitive representations of the world. From within this room, we can never know whether the outer world is as it is represented on the walls or is radically different as is suggested by the skeptical scenario of the brain in a vat. Thus, we can say that internalism has a certain inherent tendency to solipsism, which defies the possibility of knowledge in its original sense, namely the recognition of truth. Though this is an argument or accusation against internalism repeated many times, the repetition itself doesn't diminish its force. It is a real problem. The possibility of a radical discrepancy between what appears to us most reasonable to believe and what is actually true is the real threat to internalism. We have to recognize that this possibility is the real source of the Gettier problem. Since this possibility is based on the very nature of internalism, it seems really impossible for internalism to solve the Gettier problem without giving up its identity as

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internalism.

3.2.5. Conclusion.

Internalism's problem is really serious, almost unsolvable. Internalism as the original form of traditional view of knowledge requires that every instance of knowledge has to be justified, in other words, to have a ground. The source of the problem is the additional condition that this ground itself has to be recognized by the same cognitive agent. Thus, what internalism really asks is that every instance of knowledge be justified by another instance of knowledge within the same cognitive agent. Some people think that this second knowledge is 'basic belief', some think 'self-justifying beliefs', and others think 'coherency with the system of beliefs'. Whatever the nature and subject-matter of this second knowledge may be, its truth has to be actually recognizable by the knower, and this recognizability requires the further recognizabiliby of its ground. For each ground, we always have to ask, "How can we possibly know that is true?" Therefore the endless regress that undermines the possibility of internalistic justification is inherent to internalism itself.

Moreover, it is always threatened by the necessity of downgrading the idea of 'truth' or 'reality' into

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'appearance'. Some internalists may think that this is the only choice open to us. However, this is true only under the traditional internalism about knowledge. From our point of view, the path open to us that we should choose is to radically depart from the traditional view by giving up any attempt to technically amend its inside.

However, there is another path that is also wide open in front of us in which one can still retain the two fundamental pillars of the traditional view (beliefism and justificationism). This path essentially consists in the total abandonment of the internalistic condition on epistemic justification. This is epistemic externalism, which we are going to examine in the rest of this chapter.

3.3. Critique of Naturalistic Epistemology

> Et toute la nature, fin, vertu et fonction des substances n'étant que d'exprimer Dieu et l'univers, comme il a été assez expliqué, il n'y a pas lieu de douter que les substances qui l'expriment avec connaissance de ce qu'elles font, et qui sont capables do connaître des grandes vérités a l'égard de Dieu et de l'univers, ne l'expriment mieux sans comparaison que ces natures qui sont ou brutes et incapables de connaître des vérités , ou tout à fait destituées de sentiment et de connaissance; et la différence entre les substances intelligentes et celles qui ne le sont point est aussi grande que celle qu'il y a entre le miroir et celui qui voit.
>
> G.W.Leibniz

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3.3.1. The Relationship between Epistemological Internalism and Epistemological Externalism

We have seen that traditional internalism has two serious problems concerning the very possibility of knowledge itself, namely the infinite regress of the justification process and the possibility of epistemic rationality without truth. These problems naturally lead internalism to the most radical form of skepticism in epistemology and to so-called fallibilism in philosophy of science, which asserts that all scientific theories, even after their establishment, are nothing but highly plausible conjectures.

Moreover, these problems are by no means the accidental features of certain versions of internalism such as Cartesian foundationalism or internalistic coherentism, but the inevitable consequence of the very principle of internalism itself which requires that the ultimate criterion of the epistemic justification should be the conscious and reflective awareness of the justifying features of cognitive states (beliefs) by the knowing agent himself.

Thus, to avoid the skeptical consequence of internalism, it is necessary to modify or abandon this principle itself;

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and externalism, from this point of view, is nothing but a result of such a modification of the original view.

We can imagine many different ways of modifying the original internalism. Probably the easiest way is to allow meta-epistemic statements to be justified without being known or recognizable by the cognitive agent, while the old internalistic standard applies to beliefs other than basic beliefs. Under a such modification, the basic beliefs of a cognitive agent are justified by the fact that these meta-epistemic statements are true, without his knowing this fact. Our basic beliefs, according to this view, are justified, but we don't necessarily know how this justification is done. Such a position can guarantee both the possibility of knowledge and the truth-conductivity of knowledge.

However, if one modifies the original position of internalism in this way, one has to face the accusation of 'double standard' or 'philosophical dogma which exists only for itself' since only motivation for such a modification is to defend the original principle at any cost. After all, if a certain class of beliefs are exempted from the obligation of the condition of internalism, why can't other beliefs be? What can be the independent ground for this segregation other than the intellectual inertia that desires the preservation of a doctrine for the sake of itself?

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The fundamental problem of the modified internalism is that it has two modes of epistemic justification which contradict with each other: traditional internalistic justification and externalistic justification. This point becomes clear if we think about the origin of traditional internalism. After all, why do philosophers, from Descartes to Chisholm to BonJour, so ardently look for the possibility of traditional internalism? why do they apply the internalistic condition of epistemic justification to their beliefs? Isn't it because of their firm resolution not to accept anything as knowledge whose ground is unknown? But what motivates this resolution? Isn't it the conviction that we can achieve the rational ideal of knowledge in which rationality and truth coincide through and only through uncompromising application of this attitude?

If this is the case, the internalistic condition of epistemic justification is significant not because it has certain intrinsic epistemic value, but because its uncompromising application alone can lead us to the realization of the rationality of truth and the truth of rationality through our cognitive activities. However, the partial application of this condition advocated by the modified internalism is almost nonsense. What is the use of piling up applications of this principle whose only purpose is to give an unshakable ground for the whole

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edifice of human knowledge while we cannot apply this principle to the most basic part of knowledge on which everything else is based? The original goal is forgotten while the means to this end is treated as a goal itself. The end and the means are inverted in such a practice. Once the rational ideal of knowledge is given up, the effort to maximize quantitatively the number of applications of internal condition of epistemic justification will lose its independent motivation.

In a word, any compromise to externalism is nothing but the negation of the significance or the goal of epistemology itself, insofar as one still pursues the rational ideal of knowledge. Thus, from the point of view of pure internalists, any form of externalism, including modified internalism, looks impermissible. This is the ground for internalists' criticism of externalism exemplified by the following passage of BonJour:

> Nothing is said here of reasons or justification or evidence or having a right to be sure. Indeed the whole idea, central to the western epistemological tradition, of knowledge as essentially the product of reflective, critical, and rational inquiry has seemingly vanished without a trace. It is possible of course that such an altered conception of knowledge may be inescapable or even in some way desirable, but it constitutes a solution to the regress problem or any problem arising out of the traditional conception of knowledge only in the radical and relatively uninteresting sense that to reject that conception is also to reject the problems arising out of it. (BonJour 1978, in Moser 1986,

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p.105.)[15]

Insofar as one adopts an externalistic concept of justification only as a tactics for saving traditional epistemology from the attack of the Sellars-BonJour argument without giving up the rational ideal of knowledge, one cannot escape this type of criticism and has to suffer a sense of 'intellectual guilt'. Externalism in this limited sense is a self-contradictory position.

However, this doesn't mean that epistemological externalism is doomed to be a inconsistent position; it rather means that one has to take an attitude to the problem of knowledge that is completely different from that of traditional internalism in order to establish externalism as a philosophical position with a positive value. Epistemological externalism can become a topic of serious intellectual activities only when one is equipped with a new attitude and a new goal concerning the problem of knowledge. To understand this point clearly, we have to distinguish two different attitudes we can take to the problem of knowledge.

Insofar as we understand epistemology as a science about

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15. For the expression of similar emotions, see Moser 1985, pp.124-125, BonJour 1985, pp.34-45, and H. Siegel 1980, 1983.

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knowledge in the widest sense of the word "science", the most fundamental question in epistemology is "What is knowledge?" Though this question sounds simple, it is actually ambiguous, and there emerge different attitudes and goals for epistemology in accordance with different interpretations of this basic question. We can interpret this question as asking not the general nature of actual phenomena that we usually call "knowledge" or "knowing" but the nature of an ideal that alone should be called "knowledge" in the strict sense of the word. If we interpret the question this way and take it seriously, we leave it open whether or not we actually have any sort of knowledge. Under such an interpretation, the actual practice of epistemologists consists in the explication of our ideal of knowledge and the critical examination of what we usually call "knowledge". We call the attitude taken under this interpretation an idealistic attitude to the problem of knowledge. Needless to say, this is the attitude that underlies behind traditional internalism, and has dominated the philosophical activity of internalists from Descartes to Chisholm. Epistemic internalism as a doctrine is nothing but the expression of most fundamental thoughts of philosophers with such an attitude.

On the other hand, an epistemologist can interpret this question not as the one about knowledge as an ideal, which may not be actualized in the world, but as the one

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about certain actual phenomena concerning human beings called "knowledge", and take them as a kind of natural phenomena. According to this interpretation, epistemologists' question, "What is knowledge?", is essentially no different from a question of physicists, "What is gravity?" They are simply dealing with two different parts or aspects of the same natural world. The fundamental task of epistemologists, according to this interpretation, is to answer the question, "What kind of natural fact is it for a cognitive agent to know something?" We call the attitude taken under this interpretation a naturalistic attitude to the problem of knowledge.[16]

When an epistemologist (a cognitive agent who takes the study of knowledge as his/her vocation) takes this naturalistic attitude and tries to answer this question, he/she explicitly or tacitly makes the following ontological and methodological assumptions: (1) there exists the natural world one aspect of which is usually called "knowledge" or "knowing", (2) these phenomena of

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16. These two attitudes (idealistic attitude and naturalistic attitude) don't exhaust the possibilities. The attitude we took in the investigation of chapter 2 is different from both of them. We consider knowledge not as an ideal that may not be actualized in the world, but as something that is already actualized. However, we don't take an attitude to "knowing" that we take to natural phenomena like the motion of planets since we think it is a human activity for which the method of natural science cannot apply.

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"knowledge" are governed by the laws of nature that also govern other natural phenomena which are the objects of natural sciences, (3) basic methods for discovering the laws of nature can and should apply to the study of knowledge. We call the complex of these attitude and assumptions naturalistic epistemology. If these assumptions are correct and the naturalistic attitude is appropriate for knowledge as an object of theoretical inquiry, naturalistic epistemology will definitely constitute a legitimate branch of natural science, and knowledge will become a proper topic in natural science.

The doctrine of externalism can make sense under such an approach since if a cognitive agent actually knows something, there is no apriori reason to discredit it because he/she doesn't know why what he/she knows is true. If knowledge is a natural phenomena, and if a cognitive agent knows something as a matter of fact, an epistemologist has to assume this as a basic fact given prior to his/her investigation; otherwise, there would be nothing for an epistemologist to investigate. These considerations show that epistemic externalism as a thesis about knowledge has a positive significance only when it is held as a fundamental thesis or principle within naturalistic epistemology. Naturalistic epistemology is a place in which the doctrine of externalism makes its full sense.

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This means that if we are to criticize epistemic externalism, our criticism has to be a criticism of naturalistic epistemology as a comprehensive view about the relationship between knowledge and Nature.

Particularly, if we are to criticize naturalistic epistemology as a potential discipline of natural science, we have to show the following things: (1) why naturalistic epistemology as a potential discipline of natural science is problematic while other disciplines such as physics or biology are not, (2) that there is an internal conflict between the very nature of knowledge as it is taken by naturalistic epistemologists as their objects of study and the ontological and methodological assumptions behind naturalistic epistemology that cannot be solved within naturalistic epistemology.

(1) is necessary since naturalistic epistemologists definitely want to say, "We are just making empirical hypotheses about knowledge that may or may not turn out to be true. Our success depends not on any philosophical speculation, but only on empirical investigation. Let us have the freedom of studying knowledge within the method of natural science. Why do you interfere our enterprise while you don't bother to disturb physicists? If it is only because we used to be philosophers before, forget about the past; we are not philosophers any more, we are natural scientists." Certain plausibility of such a view no doubt

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derives its force from the actual success of natural science. Insofar as we acknowledge the validity of the method and the results of natural science in certain areas, we have to give some prima facie reason why we distinguish the study of knowledge from the study of natural phenomena such as gravity. We have to tell why naturalistic epistemology itself is a problem before it becomes a problem-solver.

Even after we give a reason to distinguish naturalistic epistemology from other branches of natural science in this way, it doesn't imply that naturalistic epistemology is doomed to be a failure since the failure of one version of naturalistic epistemology only calls for another theory; this is the attitude of naturalistic epistemologists. Only when we show (2), we can argue that not only particular "theories" of naturalistic epistemology, but naturalistic epistemology itself is wrong.

In the next two sections, we show (1). We show (2) in the rest of this chapter after that.

3.3.2. Naturalism and Modern Natural Science

We said that naturalistic epistemology itself is a problem. However, it is not an isolated problem, but one instance of

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the group of problems called naturalism, which we already mentioned in Introduction and chapter one. Now it is the time to characterize naturalism so that we can understand how the particular problem we are facing now (naturalistic epistemology or naturalism about knowledge) is one manifestation of a larger and more fundamental problem. This is the task of the following two sections. Once this has been done, we will have a perspective in which we can understand naturalism about language, which is our topic in chapter 5 (part II).

Each version of naturalism is very often characterized through the analogy with natural sciences by its proponents as we observed above. This indicates its deep connection with modern natural sciences as historically formed disciplines. However, natural sciences themselves are not a problem in the same sense in which naturalism is. For example, the problem in physics is not whether the method of natural sciences can apply to gravity, but whether a particular theory of gravity is correct or not. Naturalism in our sense has a complex relation with modern natural sciences.

This means that we have to clarify both the affinity and the difference between modern natural sciences and naturalism to understand the real nature of naturalism as a problem. In this section (3.3.2), we first show why

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naturalism in our sense has to be defined by means of its relationship with modern natural sciences, and what is the basic nature of modern natural sciences. In the next section (3.3.3.), we define the concept of naturalism on the basis of that analysis.

3.3.2.1. Inseparability of Naturalism and Modern Natural Science

The concept of naturalism we use in this work is a specific historical and philosophical one that was explicitly recognized as a problem by such philosophers as G.Frege, E.Husserl, and G.E Moore almost at the same time around the turn of the last century.[17] It now flourishes as a popular philosophical doctrine in certain branches of Anglo-American philosophy so-called philosophy of mind and philosophy of language after going through various historical processes. In a word, naturalism that was thus recognized by these philosophers is an idea that certain subject matters that have been traditionally dealt with as proper objects of philosophy really should be dealt with by means of the methods of natural science that have developed since the time of Galileo and Newton, and that the phenomena concerning these subjects are nothing but

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17. See Frege 1893, Introduction, Husserl 1900, Prolegomena to pure logic, and Moore 1903, chapter 2. Interesting analysis of some of their arguments against naturalism is given by Katz in Katz 1981, chapter V.

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certain aspects of Nature as the totality of all beings. Naturalism thus characterized has two aspects, namely the ontological one and the methodological one. On the one hand, it has an aspect of general philosophical view about the nature of existence. As such a doctrine, it says that any existence exists only as a part or aspect of Nature as a single system of existence, and that there is nothing outside Nature. On the other hand, it says about particular topics, such as logic, morality, or meaning, that they have to be studied by the methods ("scientific methods") that have been established through the historical development of Modern Natural Sciences that has its origin in the culture of the seventeenth century Europe. In this respect, naturalism we are talking about has a specific relationship with concrete historical events and processes of modern European history, and is distinguished from a general philosophical view that asserts that there is nothing outside Nature, which might be held by a thinker of any culture at any age. Naturalism in our sense cannot exist in ancient Greek or ancient China by its definition. It has a particular relationship with the activities of such people as Galileo or Newton.

These two aspects of naturalism no doubt have an internal connection with each other, and it is only when we clarify this connection that we can understand the real significance of naturalism. However, when we discuss

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naturalism as a problem, whether as its proponent or as its critic, there is always a strong temptation to treat it as a general philosophical doctrine that can be adequately characterized without mentioning the actual historical process through which Modern Natural Science has been formed. Before starting actual characterization of naturalism, it is in place to discuss why such a general and ahistorical characterization naturalism has to remain inadequate.

There are two reasons that any characterization of naturalism as a general philosophical view that transcends any particular historical processes cannot serve as an adequate ground for philosophical discussion about naturalism.

The first one is that naturalism characterized in such a way remains a formal concept without any substantial content to be discussed. If we are to characterize naturalism in general ontological terms, we definitely have to use such terms as "the natural world", "natural objects", "natural properties", "natural categories", "physical properties", or "physical objects" at a certain point of our characterization. This means that such a characterization remains empty unless we can give specific contents to these terms without any circularity, and we think that general and adequate characterization of

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"natural" or "physical" without circularity or arbitrary stipulations is highly hopeless. This is actually the approach G.E.Moore took in Principia Ethica to characterize "Naturalism":

> By 'nature', then, I do mean and have meant that which is the subject-matter of the natural sciences and also of psychology. It may be said to include all that has existed, does exist, or will exist in time. If we consider whether any object is of such a nature that it may be said to exist now, to have existed, or to be about to exist, then we may know that that object is a natural object, and that nothing, of which this is not true, is a natural object....
>
> There is indeed, no difficulty about the 'objects' themselves, in the sense in which I have just used the term. It is easy to say which of them are natural, and which (if any) are not natural. But when we begin to consider the properties of objects, then I fear the problem is more difficult. Which among the properties of natural objects are natural properties and which are not? For I do not deny that good is a property of certain natural objects: certain of them, I think, are good; and yet I have said that 'good' itself is not a natural property. Well, my test for these too also concerns their existence in time. Can we imagine 'good' as existing by itself in time, and not merely as a property of some natural object? For myself, I cannot so imagine it, whereas with the greater number of properties of objects -those which I call the natural properties- their existence does seem to me to be independent of the existence of those objects.
> (Moore 1903, pp.40-41.)

Here Moore tries to define "natural object" and "natural property" through the concept of existence in time in order to show that 'good' is not a natural object, and we agree that the concept of temporality is the best candidate for

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the feature by which we may give a general characterization of natural objects and natural properties, if there is any. However, a moment's reflection tells us that the concept of temporality doesn't give us the required distinction between 'good' and unproblematicaly natural objects such as stones or heat. For all instances of 'good' - good paintings, good music, or good deeds- exist only in the temporal process, just as all stones or all instances of heat exist only in the temporal process. On the other hand, if we think about the concept or universal itself rather than its instantiations, not only 'good' but also the concepts of stone or heat don't exist in the temporal process at all. Thus, whatever we have as the target of 'non-natural object' that is to be distinguished from natural objects cannot be effectively distinguished by the concept of 'existence in time'. Moore honestly acknowledged this point forty years later:

> I implied in Principia, p.41, that the difference between those properties of natural objects which I called "natural," and "good" which I declared not to be natural, was that all natural properties could exist in time by themselves, whereas the property which was that particular sense of the word "good" with which I was concerned, could not. Mr.Broad says he does not believe that those properties of natural objects which I called "natural," e.g., the property of being brown or that of being round, in the sense in which a penny may be brown and round, could exist in time all by themselves, i.e., without being, at any time at which they did exist, properties of some natural object which also existed at that time and possessed them. I entirely agree with Mr.Broad as to

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> this. I not only don't believe that such properties could exist in time by themselves; I feel perfectly sure that they could not. This suggestion which I made in Principia seems to me now to e utterly silly and preposterous. ...
> I agree, then, that in Principia I did not give any tenable explanation of what I meant by saying that "good" was not a natural property.
> (Moore, "A Reply to My Critics", in Schilpp (ed.) 1942, pp.581-582.)

Another reason for the inadequacy of this general concept of naturalism is that not only the philosophers who are the target of our criticism such as W.V.Quine, N.Chomsky, J.A.Fodor, and F.I.Dretske, but also ancient Greek atomists as well as Aristotle should be counted as naturalists if the characterization of naturalism is based on the general ontological concept of Nature. However, it is not something that is common to all of them that is recognized by Frege, Husserl, and Moore as a problem. The problem is more specific, and this specificity cannot be separated from the method and the assumptions of Modern Natural Science as a concrete historical process. We think that naturalism in this specific sense can be clarified only when we understand its relationship with Modern Natural Science. We have to capture the essence of Modern Natural Science to understand naturalism in our specific sense.

3.3.2.2. The Nature of Modern Natural Science and its Fundamental Assumption

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The essence of science - this is the central theme of modern philosophy of science, and this topic has been pursued most passionately by Logical Positivism. Their effort was basically directed to the analysis of scientific theories , and their analysis used such concepts as theoretical language, observation language, and correspondence rules. However, it is now almost an unanimous agreement among philosophers of science that their program turned out to be a hopeless plan beyond any possible amendments.[18] Given this outcome of Logical Positivism's attempt, there are two paths open to us with respect to the problem of the essence of science: one is skepticism, which holds that there is no common feature that distinguishes Modern Natural Science from all other intellectual activities in the history of human beings, and the other one is realism, which finds a significant unity among the activities we call Modern Natural Science.

We take the realistic path since we think that Logical Positivism's failure consists not in the nature of Modern Natural Science itself, but in its special approach to this problem. In a word, they thought that they could grasp the essence of science by analyzing the nature of scientific theories as entities separated from the activities of

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18. For an extensive explication and criticism of Logical Positivism's view of scientific theory, see Suppe 1977, pp.62-118.

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scientists who produce them. Logical Positivism took scientific theories themselves as their object of analysis without paying little attention to the activity of scientists whose products are the scientific theories. We think that this is what is wrong with their investigation.

We, on the other hand, think that what characterizes Modern Natural Science is not any intrinsic properties of theories produced within it, but a special unprecedented mode of activity directed to the attainment of new knowledge. Even if we found it difficult to specify common features in the theories of Galileo and Heisenberg, what makes us feel that both of them unquestionably belong to the same historical process called Modern Natural Science is this special mode of activity they share; it is the way of seeing, thinking and knowing that makes both of them scientists. Since this activity is a cognitive activity whose goal is the attainment of new knowledge through epistemic justification, our investigation of chapter 2 will help us understand the essence of Modern Natural Science. This is our basic approach.

The most fundamental characterization of Modern Natural Science is that a special mode of cognitive activity that scientists as the actual practitioners of this process share. This special mode of cognitive activity is the essence of scientists in the sense it is not because of the

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possession of knowledge of any definable facts or theories, but this special mode of activity that makes "scientists" of different generations or cultures scientists. Otherwise, there can be no reason to call both Newton and Einstein scientists as people with special vocational qualification. Let's call this activity sciencing. Modern Natural Science can be characterized only through essential features of sciencing.

That Modern Natural Science is a specific historical process means that this activity of sciencing is not a kind of activity that human beings have been always engaged in since the beginning of its history but an activity that has a particular origin in the history of Modern Europe. If we construe "science" as a general sophisticated intellectual activity directed to Nature without qualification, we have to acknowledge that Aristotle as an actual Greek philosopher, not as interpreted by medieval scholars, is one of the best "scientists" in the entire intellectual history of human beings. Nevertheless, there is a specific sense of "scientist" that doesn't apply to Aristotle, however intellectually sophisticated he may be, but does apply to any contemporary scientists, however intellectually mediocre they may be. Their difference consists in the fact that the latter are engaged in a specific cognitive activity we call "sciencing" which was originated long after the death of Aristotle. This is a

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specific historicity of Modern Natural Science as well as the vocation, "scientist". To understand their nature, we have to go back to their historical origin, and we think that it is in the activity of Galileo that sciencing was first actualized in its full-fledged form.[19] In the rest of this sub-section, we characterize sciencing through its most prominent features, and in the next section, we will see how they are actualized in Galileo's activity as well as how Galileo's activity contained the seed of naturalism.

The first prominent feature of sciencing is its historical continuity formed through the growth of the common cognitive theme, Nature. Sciencing is not a general cognitive activity that can take any possible objects of thoughts as its theme, but it has Nature as its specific theme. The cognitive activity of scientists is always about a certain part or aspect of Nature. It is by no means an accident that we almost always equate scientists with natural scientists, and feel a special kind of difficulty in calling mathematicians or logicians "scientists". As is shown in 2.2.2. and 2.4.4., every theme in the process of epistemic justification is incomplete and open in the sense that it is never given either as something

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19. The idea that Modern Natural Science has its specific historical origin in Galileo's way of thinking was already formulated by Husserl long before. See Husserl 1954, pp.23-42 in English translation.

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that is completely known or something that is completely unknown. The process of epistemic justification starts only when an unknown aspect of a known theme is recognized as such by a cognitive agent. What questions we can raise in our conscious pursuit of new knowledge is always determined by what we already know. In the case of usual epistemic justification, what is known by each cognitive agent is totally the function of the life history of each individual. Thus, the same epistemic (and non-pedagogic) justification experienced by a father may be repeated by his son exactly in the same way; it is possible that both of them raise the same question and arrive the same solution through their own efforts without the son's inheriting his father's cognitive experience the father had when he was young.

The situation is radically different in the case of a scientist. For him/her, the totality of the products of sciencing activity of previous generations of scientists (scientific knowledge) that has been handed down to him/her is recognized as the known aspect of Nature as his/her highest theme in his/her sciencing, and it conditions the questions he/she will raise. Without this specific cognitive heritage from the previous generation of scientists, he/she cannot be a scientist, however smart or generally knowledgeable he/she may be. Thus, each generation of scientists have more or less common concept

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of Nature which always grows as the result of sciencing of scientists over generations. This historical continuity and the growth of the theme (Nature) over generations, is one feature that distinguishes sciencing from cognitive (theoretical) activity in general directed to the attainment of new knowledge through epistemic justification. However, this feature of historical continuity itself is by no means unique to Modern Natural Science; we can observe this feature in many historical cultural processes such as classical Western music or Japanese Noh theater. What distinguishes Modern Natural Science from these cultural traditions is the specific features of sciencing as the essential activity of this special cultural tradition.

Sciencing has two elements or two types of activities since it itself is one species of theoretical activities directed to epistemic justification: these two elements are the activity of making suppositions, and the activity of recognizing facts through cognitive perception (e.g. seeing that such and such is the case) either as the recognition of an unknown aspect of the known theme (the beginning of the process of epistemic justification) or as the recognition of the truth or falsity of the supposition (the completion of the process). We call the first element of sciencing, namely the activity of making suppositions as a

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possible answer to the initial question, theorizing and the second element, the activity of recognizing the truth, observing.

In the most general terms, sciencing consists of theorizing and observing. The idea that science consists of theory and observation is a kind of commonplace. It is actually the idea that theory and observation are two essential elements of science that guided Logical Positivism's analysis of science. Behind such an idea, there is a hidden assumption that theory and observation, or theorizing and observing, are unique to Modern Natural Science.

However, these two activities are by no means unique to sciencing as the essential activity of Modern Natural Science. Any sophisticated cognitive activity directed to Nature can have these two elements. For example, we can unmistakably recognize quite sophisticated modes of these two activities in Aristotle; he by no means speculates without observation when he writes on the nature of various animals. What distinguishes Modern Natural Science from all other sophisticated cognitive activity, e.g. Aristotle's zoology, is special features of these two activities performed in Modern Natural Science. Without these features, Modern Natural Science cannot be distinguished as a unique phenomenon in the history of human beings.

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It is, we think, Galileo who first realized these features in his activity, and here is a specific historical origin of Modern Natural Science.

The theorization of Modern Natural Science is characterized by its abstraction and the idealization through mathematization of the properties of things. Nature, its parts, and its aspect as we experience them in our every day life have rich features. We don't experience the movement of fire, stones, and planets as the same type of phenomena. Aristotle's way of thinking about (and investigating) Nature may be characterized by his effort to do justice to these different features of different things in Nature as we experience it in our everyday life. Thus, he theorized that the movements of these three classes of objects are essentially different. It is in this respect that Galileo sharply departed from any his predecessors to become the initiator of Modern Natural Science. In a word, Galileo's way of thinking about (and investigating) Nature is characterized by his bold neglect of the variety of these features to capture the uniformity behind them. Thus, he abstracted the properties of mass, velocity, and position from various appearances of motion, and neglected all other properties of physical objects in order to discover the law that governs free fall of all types of bodies. Moreover, he expressed these properties through

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quantities by means of careful measurement.[20] Thus, once the abstracted properties are quantified, the basic nature of motion in general is expressed as mathematical relationship between variables. Galileo's supposition about the motion of physical objects, thus, is expressed as a set of mathematical equations. They are supposed to express the laws of nature that govern every thing in Nature in the same way. Thus is formed a mathematized concept of Nature.[21]

However, these equations obviously don't describe the phenomena we actually experience every day; for example, no objects move along a straight line forever in our everyday life, while Galileo's law of motion asserts that everything should. Here enters the process of idealization in Galileo's theorizing so that these equations are supposed to describe the effect of the laws of Nature when they work in a certain idealized condition such as the frictionless

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20. See Drake 1980, p.33, for Galileo's actual experiments and measurements.

21. This concept of Nature is well expressed by the following famous passage of Galileo in The Assayer:

> Philosophy is written in this grand book the universe, which stands continually open to our gaze. But the book cannot be understood unless one first learns to comprehend the language and to read the alphabet in which it is composed. It is written in the language of mathematics, and its characters are triangles, circles, and other geometric figures, without which it is humanly impossible to understand a single word of it... (Drake 1980, p.70.)

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motion in a vacuum. Galileo's essential assumption here is that the laws of Nature work in the same way in an idealized situation and the actual situation, and the actual difference between them is supposed to be explained additional features of the latter.[22]

These two features of Galilean theorizing (mathematization through abstraction and idealization) are what distinguish Galileo and our contemporary scientists from all their predecessors. Corresponding to these two features of theorizing, Galileo's activity of observing had two prominent features which were literally unprecedented. These features are experimental observation and observation mediated by technology. Since Galileo's theories tell him not how bodies move in their "natural" state as we observe them in our every day life, but how they move in an ideal situation that may not exist in such a "natural" state, it is necessary to create a situation that is similar to an ideal situation in order to see the truth or falsity of his theories, if it is possible at all. This is the basic idea of experiment. Moreover, since what Galileo's theories tell him is not necessarily what we can observe in our everyday life within the power of our innate sense organs, it becomes also necessary to use certain technology to enhance our ability of observing Nature beyond the realm of

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22. See Drake 1980, p.39.

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everyday life. The fact that this special mode of observing was really unique to Galileo is testified to by his dramatic discovery of satellites of Jupiter whose existence nobody had even imagined before Galileo.

These two modes of observing unique to Galileo, namely experimental observation and technologically mediated observation, are almost necessary consequences of Galilean mode of theorizing we just discussed, since otherwise such a theorizing cannot expect any process in which the truth of its suppositions may be recognized so that new knowledge is produced and, therefore, has to remain supposititious forever; there would have been no difference between "science" and "wild conjectures" without a new way of looking at Nature. In other words, if Galileo hadn't had such modes of observation, it would have been impossible even for Galileo himself to conceive his act of theorizing as a vital step to the attainment of new knowledge that can be transmitted to the public. It is these two features of observing activities as well as the specific features of Galilean theorizing - mathematization, abstraction, and idealization - that scientists of all generations since Galileo inherited from him. It is those features of Galileo's activity that make it <u>sciencing</u> and make Galileo's successors <u>scientists</u> as the practitioners of a vocation initiated by Galileo.

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Thus, we can characterize the activity of sciencing - in the roughest and most general terms - though the following three features: (1) its historical continuity since Galileo as a cognitive activity whose products are handed down from generation to generation, which is constituted by the common theme of Nature, (2) its special mode of theorizing characterized by abstraction, idealization, and mathematization, and (3) its special mode of observing characterized by experimentation and technological mediation that enable scientists to transcend the phenomena observable in everyday life.

An activity with these features -sciencing- was first actualized by Galileo highly successfully. Once the possibility of such an activity and its potentiality for producing new knowledge was exhibited by its ingenious initiator - Galileo Galilei - , Modern Natural Science has started its history, and gradually formed itself as a developing historical and cultural process. In this process, what is handed down from Galileo to generation after generation is not only sciencing as the Galilean mode of epistemic justification, but also the new concept of Nature. However, Galileo handed down this concept to his successors not as any general ontological picture of the universe which can be characterized by the closed list of elements like Descartes' res extensa, but as an actual entity open to the sciencing of future scientists by

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disclosing its particular but hitherto unknown parts, which excited his contemporary intellectuals. Thus, Galileo not only set the model for sciencing, but also placed the seed of new concept of Nature which has evolved though the sciencing of scientists generation after generation. Here we can recognize a special feature of the "ontology" of Modern Natural Science. It is based on no fixed lists of "elements" or philosophical principles; nor is it subject to the speculation of each individual scientist. Within the tradition of Modern Natural Science, the concept of Nature of one generation is conditioned by that of the previous one, not as a result of general influence of one generation over another, but as an outcome of a continuous historical process constituted by its common theme, Nature, and its specific mode of cognitive activity, sciencing. It is this historical process that we call here Modern Natural Science. This is why we cannot characterize the "ontology" of science by any closed set of philosophical concepts.

For our current discussion, one important aspect of sciencing as the Galilean mode of epistemic justification is that it is based on one fundamental assumption about Nature, while it is almost free from any particular fixed philosophical views about what Nature is. That is the assumption that the laws of Nature govern the objects or phenomena belonging to Nature always work in the same way without regard to the sciencing activity of cognitive

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agents who act on Nature in various ways in the course of technologically aided observation and experimentation. In other words, the most fundamental assumption of Natural Science is that Nature remains the same in the course of Galilean observing. If this assumption doesn't hold, and if the nature of an object observed in an experiment is radically different from the nature of the same object under other conditions such as its condition in everyday life, what a scientist observes is not the nature of the object in itself, but the nature of something that is artificially created by the scientist's own activity. If this is the case, Galilean observation fails to give an epistemic justification to Galilean supposition, and Galilean theorizing turns out to be nothing but a wild speculation. We call this assumption inherent in Modern Natural Science the assumption of Independent Objectivity of Nature, which asserts the mutual independence of the intrinsic nature of Nature as the object of sciencing and the knowing subject's activity of sciencing. As we will observe, it is this assumption that makes naturalism a problem.

3.3.3. Naturalism as a Problem

Our brief exposition of sciencing as the Galilean mode of

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epistemic justification indicates that the validity of this new mode of attaining new knowledge is by no means something that is given through an apriori ground, since it is crucially based on the assumption of the Independent Objectivity of Nature. Insofar as idealization,abstraction, and mathematization are essential for sciencing, this assumption is essential for the possibility of Modern Natural Science, since suppositions based on these operations (theories) have no chance to be epistemicaly justified through experiments or technologically aided observations, namely have no chance to become knowledge from mere suppositions unless this assumption holds. This means that insofar as the assumption of the Independent Objectivity of Nature remains problematic, sciencing itself, as a new "method" for studying Nature, becomes a problem rather than serving as a methodological background against which various problems concerning Nature can be discussed and solved. In other words, the sciencing activity of individual scientists over generations can constitute Modern Natural Science as a historical process that conditions the concept of Nature of each age through the production of new knowledge about Nature only when the sciencing activity itself ceases to be a problem and is established as a valid path to new knowledge about Nature. Only when the sciencing activity itself recedes from the focus to the background, the object

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of this activity comes into the focus, and the collective activity of individuals modeled after Galileo's activity becomes Modern Natural Science as a unique cultural tradition which governs the notion of Nature of an entire age. This obviously happens only when the assumption of Independent Objectivity of Nature becomes something more than a mere assumption. On the other hand, any attempt to imitate Galileo's activity becomes a problem if this assumption remains an assumption. This is the fundamental root of naturalism as a problem.

Thus, as an initial approximation, we can define our concept of naturalism as the complex of attitudes, assumptions, and suppositions concerning Nature that are actualized in the sciencing activity directed to a particular subject matter when this activity itself is problematized because Independent Objectivity of Nature remains an assumption. However, this definition has to be modified though it conveys the basic idea of what we mean by naturalism. For naturalism according to this characterization appears to be something that can occur only once in the history of science: it appears that naturalism is dissolved once and for all if Galileo's method is established and Independent Objectivity of Nature ceases to be a mere assumption. However, the naturalism we try to characterize is something that repeatedly appears in intellectual history since Galileo. Moreover, according to

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this characterization, Galileo himself has to be categorized as a naturalist since not only his particular theories but also his new mode of sciencing itself were always problematized throughout his life by his opponents. The famous affair of the trial of Galileo only symbolizes what he had to experience as the initiator of a new tradition. However, we by no means think that Galileo is a naturalist in our sense. The concept of naturalism we want to capture is not something that applies to Galileo himself, but rather something that applies to his "bad" replicas which fail to realize Galileo's cognitive experience of new knowledge through the activity of sciencing. In a word, naturalism is an attitude of the imitators of Galileo who don't practice or experience the new mode of recognizing new truth - sciencing. Now, we have to take a brief look at how Galileo himself experienced the recognition of new truth through his new mode of cognitive activity - sciencing -, and how his opponents problematized this "method", by taking his discovery of satellites of Jupiter as an example, in order to clarify our concept of naturalism.

When Galileo reported his discovery of four satellites of Jupiter to the public through the publication of The Starry Messenger in 1610, many Italian philosophers and astronomers of the time first reacted by declaring that

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what Galileo watched through his telescope is not something that really exists around Jupiter but an optical illusion that exists only on the telescope's lenses and the observer's retinas.[23] Here, what was problematized and questioned by them is not Galileo's thesis that Jupiter has satellites, but the validity of an unprecedented mode of observation aided by a telescope - a new technology of the age. They criticized Galileo not because he had a positive answer to the question,"Does Jupiter have satellites?" while they had a negative answer, but because Galileo attained the recognition of a new and striking fact through this new mode of observation that nobody had experienced before. They didn't believe that we can come to know new facts about Jupiter by means of a telescope.

On the other hand, from Galileo's point of view, such an observation is a natural consequence of his attitude to Nature. It is by no means an accident that Galileo became the first astronomer who used a telescope in the investigation of celestial objects. Galileo's quick response to the news of the invention of telescope in Holland is the reflection of his special attitude to Nature which is radically different from his contemporary scholars. Actually, it is only in less than one and a half years

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after a patent for telescope was applied for to the government of Holland that Galileo himself produced his telescope by reasoning a possible mechanism of this new technology and discovered the satellites of Jupiter by using it.[24] Galileo's use of the telescope shows his insight into the cognitive potentiality of new technology as well as his craftsmanship which can materialize this potentiality, which we can find in almost no scholars before him. They are now considered as great virtues for scientists. Galileo's discovery by means of the application of new technology to astronomy became possible only because of his sciencing activity that he had practiced for years.

It requires great care to understand correctly the nature of the debate between Galileo and his opponents concerning this discovery of Jupiter's satellites.

There are two possible mistaken ways to see this situation that fail to grasp the meaning of this event which is one of those that mark the birth of Modern Natural Science. One of them is to think of his opponents as irrational dogmatists who rejected to acknowledge what they really recognized. From our modern point of view, that Jupiter has satellites is a plain fact that can be recognized by an observation. It is a basic fact of

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24. Drake 1980, pp.42-43.

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astronomy beyond any doubts. It simply is a given fact for us. It is also a basic fact for us that, by means of telescopes, we can observe celestial phenomena that cannot be observed by naked eye. If we take these facts as basic facts also for the Italians of the early seventeenth century and if we think that the recognition of these facts by them is exactly the same epistemic process as the one through which we recognize these facts, we obviously have to say that the attitude of Galileo's opponents is irrational and insincere. However, we shouldn't forget that we now recognize these facts as basic facts only because of the discoveries of Galileo and his successors and that there had been nobody who recognized any new astronomical facts by looking through a telescope before Galileo. The experience of recognizing facts about celestial objects by means of a telescope that is taken for granted by us wasn't and couldn't be taken for granted by them. Therefore, if we are to be fair to Galileo's opponents, we have to re-create the epistemic situation of people who hadn't shared the experience of recognizing new celestial facts through observation aided by a telescope. For them, looking at a celestial object through a telescope was not a mode of experience through which one could recognize facts about it, but a novel mode of experience the cognitive value of which is not yet certain. Suppose that you were given a mysterious cylinder whose mechanism

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you didn't know, and suppose that you "recognize" a "new celestial object" that hasn't been known to or even imagined by the best astronomers of the time. In such a situation, that you really discover a new celestial body rather than are trapped by a new type of optical illusion is by no means a plain fact that can be recognized by anybody. The situation of Galileo and his opponents is similar to this story. We have to consider the significance of such a nature of the situation for understanding the real significance both of Galileo's discovery itself and of his opponents' objection. First, it tells us that Galileo's discovery of Jupiter's satellites, namely his achievement of a new recognition that Jupiter has satellites through the activity of using a telescope for astronomy, is by no means a simple act of observation that consists in seeing an object that exists out there. It took Galileo's knowledge of astronomy as well as his experience of measuring and experimenting with natural phenomena through a new attitude we call sciencing to realize the recognition in his experience of "looking at the night sky through a telescope". On the other hand, if a person doesn't have Galileo's knowledge, experience, and attitude, it is not unnatural for him to consider Galileo's "discovery" not as a new mode of recognizing facts, but as a mere supposition about Jupiter and a telescope.

Thus, if we separate what Galileo reported from what

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he experienced, then we cannot criticize Galileo's opponents' attitude as irrational or insincere. For insofar as the contents of the assertions are concerned, there is no logical or apriori reason to take Galileo's assertions as having stronger ground than that of his opponents. Insofar as the validity of the observation through a telescope is still questioned, the possibility of optical illusion is a real possibility. Galileo's opponents are far from being irrational or insincere given their epistemic situation. They weren't irrational; they simply didn't know what Galileo already knew.

Another possible erroneous way to look at the situation is that we ourselves adopt this attitude of Galileo's opponents (based not on their dogmatism but on the lack of the experience of recognizing the new fact) as our own attitude and ignore or forget Galileo's experience of the new mode of recognition of facts about Nature. If we ourselves take such an attitude, Galileo's opponents rather than Galileo himself appear to be closer to the truth. For it is not totally unreasonable to consider Galileo's opponents' criticism as saying that Galileo asserts something which he came to believe through observation aided by a telescope without having an adequate optical theory that justifies this new mode of observation.[25] When

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25. Drake 1980, p.45.

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we take such a view, we are seeing the situation as the conflict of two opposing beliefs or theories, namely Galileo's and his opponents'.

This way of looking at the situation is wrong in two aspects. First it trivializes the point of Galileo's opponents to a special problem of optics. However, what really was problematized by his opponents is not Galileo's lack of an adequate theory of optics, but the very assumption of the Independent Objectivity of Nature. What Galileo's opponents really problematized is a thesis that Nature as observed in its "natural" state and Nature as observed through technological mediation are the same. If Galileo had made the same discovery by using another technology, they would have made similar objections, too. The focus of the problem is not a telescope as a particular tool, but technology in general that enables us to transcend the range of our original experience conditioned by our unaided sensitivity.

Moreover this interpretation has another and more serious problem. That is that it ignores the fact that Galileo didn't believe but knew that Jupiter has satellites. It ignores Galileo's experience of recognizing a new fact by using a telescope, which marks the beginning of a new mode of recognizing facts about Nature. It is this experience that makes Galileo's activity sciencing, which is distinguished from a mere promise of new knowledge

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about Nature.

This interpretation sees the situation as if Galileo and his opponents were two groups of scientists at a conference who have opposite views on the same topic. However, the relationship between Galileo and his opponents is neither the one between two rival theoreticians nor between two scientists, the one who knows a certain fact and the other who doesn't. Their difference is much deeper. The relationship between them is the one between a person who recognizes the validity of the Independent Objectivity of Nature, insofar as Nature is construed as the totality of macrophysical objects, through the experience of the new mode of recognizing facts, and a person who hasn't experienced this new mode of observation and for whom the Independent Objectivity of Nature still remains a doubtful assumption.

When Galileo observed four satellites of Jupiter, his observation for him was not a new isolated experience like the one that a child who watches through a telescope for the first time in his life might have. It is an experience that is embedded in his past experience of sciencing and his knowledge about Nature. First, when he discovered four satellites of Jupiter, he already discovered the law of free fall through experimentation and measurement,[26] which

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26. See Drake 1980, p.33.

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itself is a new mode of recognizing facts about Nature. Therefore, to recognize new facts about Nature that cannot be recognized within our experience of everyday life was not something completely new for Galileo. Moreover, he observed Jupiter not as a layman who happened to look through a telescope out of curiosity, but as an astronomer-mathematician. His observations were placed in his systematic knowledge of mathematics, astronomy, and motion of bodies. It is this observation's embeddedness in knowledge and experience that prepared Galileo's achievement of recognition of new astronomical facts through a new mode of recognizing facts about Nature, namely recognition that transcend our familiar experience of Nature. Therefore, it is not the case that Galileo recognized four spots on the lens of his telescope when he happened to direct his telescope to a certain direction of the sky, and made a conjecture that they must be satellites of Jupiter, while his opponents made another conjecture that they must be optical illusions. To consider the difference between Galileo and his opponents as the difference of two theories or two beliefs means to see Galileo's discovery in such a way. Under such an interpretation, a series of Galileo's discoveries and achievement by means of the telescope --Jupiter's satellites, the moon's mountains, black spots of the sun, calculation of the periods of Jupiter's satellites and the

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prediction of their eclipse -- appears to be a miracle. Why could only Galileo discover them while his contemporary scholars didn't recognize these facts until Galileo taught them? Is this because Galileo was a genious? The mistake of this view is that it ignores Galileo's unprecedented type of experience of recognizing new facts about Nature, which alone make's Galileo's activity the beginning of Modern Natural Science.

It is by no means the case that Galileo was rational while his opponents were irrational. In terms of epistemic rationality, there is little difference between them. Given their epistemic situation, Galileo's opponents are by no means irrational. What distinguishes them is new truth and a new way of knowing it. Galileo experienced the new mode of recognizing a fact through his discovery of new facts about Nature, and he discovered these new facts through this new mode of recognizing a fact that had been cultivated through his past experience. These two things -- discovery of new facts and realization of the new mode of recognition -- are actually one single process Galileo experienced as the emergence of new knowledge, which would be eventually called "science". It is this actualization of the new type of knowledge in Galileo that makes him the real starting point of Modern Natural Science.

In this respect, Galileo's epistemic situation is quite different from that of Copernicus though both of them

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are deeply involved in the birth of Modern Natural Science. Copernicus gave a new bold interpretation to the astronomical facts that were already known without himself discovering any significant new facts. What he offered is a new way of looking at things that had been already known through the conventional mode of recognition. On the other hand, Galileo, who didn't give any new and original interpretation to the universe, discovered the new mode of recognizing facts about Nature through actual discovery of new facts based on this mode. When he recognized the satellites of Jupiter as such in his observation aided by a telescope, he also realized the validity of the observation through a telescope as a technological aid, just as when we recognize a distant tower as such by looking through a telescope, we also realize the validity of observation through a telescope. The validity of telescopic observation was no longer an epistemic assumiption on the basis of which something else is supposed to be known, but something recognized as such through the recognition of the fact that Jupiter has satellites. In this recognition, Galileo also realized the further extension of Independent Objectivity of Nature, which he already realized through his discovery of the law of free fall.[27] Through this discovery, Galileo became the first man who grasped a new

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27. Drake 1980, pp.33-39.

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concept of Nature as a uniform and objective entity whose laws can be discovered not only through observation in our everyday life, but also through experimentation and technologically aided observation coupled with mathematized theories.

The important thing for our current discussion of naturalism is the expansion of this concept of Nature and the range of Independent Objectivity of Nature after Galileo gave it to us. When Galileo made various discoveries, Independent Objectivity was grasped by him not as a rational principle or a conjecture that promises future discoveries like Leibniz's principle of sufficient reason, but as a epistemic-assumption-turned-into-recognition-of-truth[28] which gives a ground for his discoveries and is grounded on them at the same time. This was no longer assumption for him.

The concept of Nature based on Independent Objectivity, like all cognitive themes in epistemic justification, was given to Galileo only as something incomplete and open when he recognized new facts about Nature. When he recognized the validity of the Independent Objectivity of Nature, he didn't recognize it unconditionally but only insofar as the content of Nature

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28. See 2.5.

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is limited to the totality of physical bodies and their motions. This content of Nature and the range of Independent Objectivity is what he could recognize through his discoveries based on this concept. This, however, doesn't mean that the concept of Nature was recognized as something limited by a definite boundary. It rather means that the concept is given as something that invites whoever grasps it to its further extension whose validity has yet to be recognized. Facts discovered by Galileo inevitably raise new questions about Nature, and some of these new questions are answered through the sciencing activity of next generation of scientists. Thus, the discoveries of one generation introduce new questions to the next generation in accordance with the thematic unity of Nature initially grasped by Galileo; it grows through the sciencing activity of scientists over generations. This process of the development of the concept of Nature is identical with the history of Modern Natural Science. We can trace such a continuity from Galileo to our contemporary physicists. Thus, we can say that the scientists as the participants of this process are the offspring of Galileo in two aspects at the same time: they re-enact and re-experience the activity of sciencing as a new mode of recognizing new facts about Nature first experienced by Galileo and they share the same theme of Nature which was first recognized by Galileo. Thus, they

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are both ontologically and methodologically Galileans. However, they don't necessarily hold the Galilean heritage as explicit beliefs, doctrines, or any types of "-ism" since sciencing, which was a completely new mode of recognition about Nature for Galileo's contemporaries, and the concept of Nature, which was also novel in Galileo's days, have already become de-problematized for the scientists of new generations. They ceased to be the topic after the time of Galileo, and served as a background against which specific features or aspects of Nature become the theme, unless there arises a sign that indicates the limit of the extension of the Independent Objectivity of Nature like quantum mechanics under a certain interpretation. We call this type of growth of the concept of Nature originally grasped by Galileo the internal growth of Galilean concept of Nature.

However, there is another type of extension of the concept of Nature and the range of Independent Objectivity. Since sciencing as a new mode of recognition of facts about Nature was established as a valid "method" for Galilean Nature, it is not unreasonable for someone who is impressed by Galileo's work to think that this "method" is applicable to phenomena which exist outside of any direct outgrowth of Galilean concept of Nature within the tradition of Modern Natural Science. When such an extended application of Galilean "method" is proposed without actual discoveries

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being made by such an application, it is based on an assumption of the Independent Objectivity of Nature under an inflated interpretation of Nature. The Independent Objectivity of Nature for such a proponent of the extension still remains an assumption.

We call this type of extension naturalism as a problem. The reason we call it a problem is that the kind of questions raised by Galileo's opponents become real questions for such an extension since the assumption remains an assumption since any assumption ceases to be an assumption only when the truth of a thesis is recognized which used to be based on that assumption. In Modern Natural Science, the applicability of Galileo's "method" is no longer a problem but a background against which various problems are raised and solved. Such de-problematization or de-thematization of this "method" was essentially achieved by Galileo's own discoveries based on this "method". Thus, once the Galilean "method" is established, every new supposition concerning a certain aspect of Nature is considered as an "empirical hypothesis" whose validity should be determined by this "method" insofar as "Nature" is the result of the internal growth of Galilean concept of Nature. On the other hand, when a supposition is made about a certain feature of "Nature" as the result of external extension of original Galilean Nature, the applicability of Galileo's method always

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becomes a problem until each new field produces its own Galileo and new type of recognition. Metaphorically speaking, it is always a problem whether what is "observed" is "spots on the lens" or "satellites of Jupiter" when the concept of Nature is externally extended on the assumption of Independent Objectivity. Such an extension itself becomes naturalism as a problem. The question raised against each version of naturalism is, "Does Independent Objectivity hold for newly extended parts of Nature?" Since each naturalism inherits only "method" from Galileo, certain ontological arguments becomes necessary for showing the adequacy of the "method" borrowed from Galileo for the new target phenomena. Thus, it always becomes one of major tasks for any versions of naturalism to construct an argument that shows how the phenomena in the new territory might be related to the phenomena in Nature as the internal outgrowth of the original Galilean concept of Nature. It is a mark of naturalism as a problem that its activity mainly consists not in recognition or discovery of new facts but in such an argumentation that is often called an "empirical hypothesis" by naturalists coupled with a promise of future discoveries. We call such argumentation naturalization of the target phenomena.

One of the first naturalists in this specific sense is Thomas Hobbes, who visited seventy year old Galileo at Florence in 1634 certainly with an idea that Galilean

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"method" may be applicable to the phenomena of the civil society and the state.[29] Hobbes attempted to naturalize the civil society and the state in terms of the concepts of physical motion, and desire, and of human actions as the direct consequence of them. Hobbes' intention in using such concepts as "Nature", "the laws of Nature", or "the state of Nature", is no doubt to study civil society and the state in accordance with Galileo's "method", but it is also obvious that his concept of "Nature" is neither identical with nor the internal extension of Galileo's concept of Nature. Thus, not only the particular thesis about the origin of the state that Hobbes advocates, but also Hobbes' use of the concept of "Nature" and Galilean "method" become a part of the problem. In a sense, the entire Leviathan can be considered as Hobbes' attempt to naturalize the state.

The second half of nineteenth century experienced a surge of specific type of naturalism whose target is various human activities. What distinguishes this type of naturalism from Hobbes' naturalism is the fact that the former takes various phenomena concerning human agents such as morality, logic, knowledge, as psychological phenomena which in turn are considered as certain aspects of Nature,

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29. Macpherson 1981,pp.18-19.

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while Hobbes, more radically, considered everything as motions. Thus, it is also called psychologism. Psychologism as a new version of naturalism is a more indirect one than Hobbes'. It is this psychologism that was recognized by G.Frege, E.Husserl, and G.E.Moore as a problem.[30] It is also this psychologism that we recognize

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30. The target areas for Frege, Husserl, and Moore are logic, meaning or concept, and morality, respectively. Though their basic philosophical views are radically different, they share the same consciousness that naturalism in these area is a serious problem. See Frege 1893, Introduction, Husserl 1900, Prolegomena to Pure Logic, and Moore 1903, chapter 2.
The following passages of Frege and Moore clearly show the nature of naturalism they problematized:

> It will be granted by all at the outset that the laws of logic ought to be guiding principles for thought in the attainment of truth, yet this is only too easy forgotten, and here what is fatal is the double meaning of the word "law". In one sense a law asserts what is; in the other it prescribes what ought to be. Only in the latter sense can the laws of logic be called 'laws of thought'... But the expression "law of thought" seduces us into supposing that these laws govern thinking in the same way as laws of nature govern events in the external world. In that case they can be nothing but laws of psychology:for thinking is a mental process. And if logic were concerned with these psychological laws it would be a part of psychology; it is in fact viewed in just this way.
> (Frege 1893, pp.12-13 in English translation.)

> I have thus appropriated the name Naturalism to a particular method of approaching Ethics - a method which, strictly understood, is inconsistent with the possibility of any Ethics whatsoever. This method consists in substituting for 'good' some one property of a natural object or of a collection of natural objects; and in thus replacing Ethics by some one of the natural sciences. (Moore 1903, p.40.)

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as our contemporary problem.

One reason why this type of naturalism directed to these human activities is especially problematic is that there exists a fundamental asymmetry between the phenomena experienced by the agent and the same phenomena experienced by the observer in this area. Such an asymmetry simply doesn't exist in Galilean Nature.

It is true that we can observe other people recognizing something, thinking something, or making a moral judgment. However, the significance of our observations of these activities of other people comes from our experience of our own knowing, thinking, or morally judging. If we ourselves haven't had any experience of these activities, it is, at best, unclear what we are observing in our observation of other people's performing these activities. Thus, the observing subject's having had the same type of experience as the object become almost a necessary condition for the possibility of observation in this area. On the other hand, there is no such problem in the observation of Galilean Nature; we don't have to have had experience of moving around a planet to observe the motion of a satellite as such. It is because the concept of agent or sensory subject plays no role in mathematized Galilean Nature. Motion and its mathematical nature are almost everything for Galileo. Galileo's sharp distinction between sensory qualities and qualities of physical objects

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in themselves, (which are called "secondary qualities" and "primary qualities" by Locke long after) is one expression of this feature of Galileo's concept of Nature.[31]

Though this asymmetry between phenomena for the agent and phenomena for the observer is an extremely strong objection against naturalism in this area, (we actually think that it is decisive beyond any question) it doesn't constitute an apriori reason to conclude that naturalism in this area is doomed to fail. Logically speaking, it is always possible to naturalize these human activities since there is no logical impossibility in an assertion that these human activities are aspects or parts of Nature. Moreover, naturalists of this type construe their activity of naturalization not as philosophical activity but as the activity of making an "empirical hypothesis" which should be refuted not by any apriori philosophical arguments, but by empirical investigations. Of course, this doesn't mean that their "theories" are really empirical theories that can be tested by Galilean observation, since what is actually problematized is not their particular theories, but the very applicability of the "method" to this area whose results are claimed by them as possible "evidence" for their "theories". Nevertheless, naturalists can survive forever once they have determined to live in this

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31. See Drake 1980,p.70.

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cognitive limbo forever. The foods they live on are the pure logical possibility and the empty concept of "empirical hypothesis". In a word, what they claim is this, " My theory may have only a very slight chance to be true. However, you can not reject my right to have this theory. If this theory turns out to be wrong, I will make another. There is nothing wrong with this, since there is nothing that precludes the possibility that empirical discoveries may be made that support my next hypothesis. Why don't you stop your outdated philosophy. I am a scientist." Ironically, such a claim, whose spirit is rather close to that of Galileo's opponents, who loved arguments more than observations and experiments, than to Galileo's, get certain credibility from the glory of Galileo and Modern Natural Science. It is common for this type of naturalists to claim that their activity is modeled after natural science, at least, in spirit:

> ...I hold that knowledge, mind, and meaning are part of the same world that they have to do with, and that they are to be studied in the same empirical spirit that animates natural science. There is no place for a prior philosophy. (Quine 1968, p.26.)

They claim that they are Galileans in spirit, but we cannot forget that Galileans are only Galileans in deeds and recognition. Nevertheless, naturalism of this type now flourishes at least superficially, partly because of the

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sedimentation and the traditionalization of Modern Natural Science itself, which results in the obscuration of the very concept of science and Galileo's original experience. This is the reason we have to get into certain details of naturalistic epistemology, namely this type of naturalism directed to the subject matter of knowledge, however painful it may be.[32]

3.3.4. From the Causal Theory of Knowledge to the Reliability Theory of Knowledge

3.3.4.1. The Causal Theory of Knowledge and its Insufficienc

The first theory developed in contemporary naturalistic epistemology is the so-called causal theory of knowledge.[33]

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32. We won't deal with Quine's "naturalistic epistemology" developed in Quine 1967, Quine 1969, and Quine 1974 despite the fact that Quine is the inventor of this phrase. The reason is that we think that Quine's "naturalistic epistemology" is not naturalistic epistemology. Insofar as epistemology is a science of knowledge, naturalistic epistemology has to study the phenomena of knowing as an aspect of Nature; it has to be, at least, psychology of knowing. However, what Quine does or tries to do is, at best, psychology of belief formation without any regard to whether the formed beliefs are knowledge or not.

33. A. Goldman, "A Causal Theory of Knowing", in The Journal of Philosophy, vol. 64 (1967) 357-372. and D.Armstrong, Belief, Truth, and Knowledge (1973) are the most important representatives of this theory. Dretske, Knowledge and the Flow of Information (1981), also belongs

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The basic thesis of the causal theory of knowledge is that a cognitive agent knows that P if and only if he possesses a belief-like cognitive state whose content is P and this state is causally generated or sustained by the fact P, while a cognitive state is taken as a certain state of a human organism (usually a brain state) as a part of Nature. Though the particular characterization of this causal nexus may create some difficulties, the basic idea of this theory about the naturalization of knowledge is that for a belief to be knowledge, it has to have a certain causal connection with the fact which it is about. The paradigm case of this theory is perception, where we can correctly perceive

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to this type of theory though the latter is more sophisticated and extensively uses the concept of 'information'. See Dretske 1981 chapter 4. For the detailed criticism of Dretske's information theory of knowledge, see 3.3.7.

Churchland's naturalistic epistemology sketched in chapter five of Churchland 1979 also uses the concepts of causality and information, but is much less sophisticated than Dretske's. It rather belongs to a naive type of causal theory we are now discussing. His naive attitude is typically expressed by the following concluding words of his book:

> And what is human knowledge but a cortically embodied flower, fanned likewise into existence by the ambient flux of energy and information?
> (Churchland 1979, p.151.)

Here he has no awareness of the fact that the very question naturalism has to answer is why "a cortically embodied flower", but not a flower drawn on a sheet of paper, constitutes knowledge though both of them are the results of "the ambient flux of energy and information".

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something only when we have a certain causal connection with the object. The obvious attraction of the causal theory for naturalists is that it replaces the concept of 'intentionality' by causality and virtually eliminates the problem of 'content' from epistemology. The most troublesome problem for naturalism ,thus, would disappear.

However, even if we granted the best possible scenario of future science, this theory seems to be inadequate to capture the nature of knowledge, and ,in fact, was abandoned by one of its founders[34]. The basic problem of the causal theory of knowledge is that the contents of beliefs in many important cases of knowledge are universal statements while only a particular instantiation of a universal fact can causally generate a particular belief in a cognitive agent. Think about the piece of knowledge that AIDS is caused by viruses. If a researcher guessed in 1981 that AIDS is caused by viruses by observing the blood of a patient with AIDS, his true belief was caused by an instance of the content of that belief itself. However, this is not an instance of knowledge at all. Such a simple causal relation doesn't make a belief about a universal law knowledge, even granting that knowledge is a kind of beliefs. Causal connection is not sufficient to make a belief knowledge. As a matter of fact, whether our belief

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34. Alvin Goldman 1976.

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is caused by an instance of a universal law is irrelevant to whether we know that universal law. In other words, causal connection is not even a necessary condition to make a belief knowledge, either. We can now know that AIDS is cause by viruses without observing any instances of the AIDS virus, and we can know that there are infinite prime numbers without having any causal relation with the instances of infinite prime numbers. Causal connection is a crucial for the validity of perceptual knowledge of singular facts, but not for the validity of knowledge of universal statements. To know that P, it is neither sufficient nor necessary to have a belief caused by the fact or event <u>that</u> <u>P</u>, when P is a universal statement. Causal theory fails to account for our knowledge of universal laws including the laws of Nature, and any theory of knowledge that cannot account for our knowledge of the laws of Nature, the laws of logic and mathematics, and the laws of the state, among others, is intrinsically insufficient.

Moreover, the causal theory fails to account even for our knowledge of particular or singular facts since causal connection is not sufficient for a belief to be knowledge even if we suppose that knowledge is a kind of belief. The source of this insufficiency is the fact that the formation of a belief is usually mediated by other beliefs. Suppose that three girls, Jane, Mary, and Julia are coming to the

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party and I know nothing about Jane and Mary, but know that Julia is tall. When I go to the party, I see a tall girl and I think she is Julia, and she turns out to be Julia. But afterwards it becomes known to me that Jane and Mary are also tall. In this case, my initial belief that the tall girl I saw at the party is Julia is no more than a lucky guess, though my belief is true and was caused by an event or object which it is about.

What this example shows is that there are two kinds of causal relationships with respect to knowledge even if we accept the view that knowledge that P is a true belief caused by the fact or event P. One is epistemicaly relevant and the other is irrelevant. Their difference itself cannot be accounted for by causality. Therefore, causal theory has to be supplemented by a non-causal theory of epistemic relevance. In other words, causality itself is not sufficient to account for knowledge despite the initial contention of causal theory[35], and,as will be revealed in the following, what has to be supplemented is a theory of content whose avoidance was the direct motivation for the causal theory of knowledge.

3.3.4.2. Reliability Theory and its Merits

This causal theory of knowledge has been, to a large

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35. Exactly the same problem occurs to causal theory of meaning. See our section on Fodor 3.3.6.

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extent, replaced by the reliability theory of knowledge in contemporary naturalistic epistemology. The reliability theory of knowledge, which was created and developed by Alvin Goldman[36], among others, can be regarded as a product of reflection on the deficiency of causal theory. Think about the example of a guess about the cause of AIDS again. What makes this case non-knowledge is the fact that the process that generates this belief is merely guessing, though this process is causally triggered by an instance of the universal fact to be known, namely the fact that AIDS is caused by viruses. This indicates that what is crucial for the distinction between knowledge and non-knowledge is the nature of the formation process of each cognitive state rather than what event causally triggers such a process. According to this idea, the most fundamental theoretical framework for naturalistic epistemology is the typology of various cognitive-state-formation-processes, and the focus of the investigation is the specification of the conditions under which each type of process actually generates beliefs that are unproblematicaly recognized as knowledge. This typology contains at least such processes as the memory retrieving process, the reasoning process, the perceptual process, the imagination process, the intuition process, and the introspection process. The next step of this

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36. Alvin Goldman 1976, Alvin Goldman 1971.

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research project is the explication of the neuro-psychological mechanism of each belief formation process that makes its products knowledge. These processes that produce knowledge under certain conditions are called reliable processes. Thus, if the whole project of this reliability theory of knowledge is completed, knowledge will be naturalized as a particular type of cognitive states that has been generated by a reliable belief formation process under its proper conditions. In a word, "knowledge is a reliably produced true belief."[37] The natural unity of knowledge that makes diverse cognitive states instances of knowledge, according to reliabilism, is the higher order causal unity of cognitive states, namely, that they are all produced by a reliable cognitive-state-formation-process.

Though the reliability theory of knowledge has many difficulties concerning its details[38], it seems to be by far the best and almost only feasible hypothesis for naturalistic epistemology for several reasons.

For one thing, the reliability theory seems to be the only naturalistic theory according to which a tentative theory

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37. Kornblith 1980.

38. One is about how to define each type of cognitive-state-formation-process and each type of condition under which this process works in naturalistic terms. Another is how to deal with some internalistic element that some people consider not negligible. See A.Goldman (1979).

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about apriori knowledge has been developed.[39] Such an attempt is almost impossible within the framework of causal theory. How, after all, can we define the causal relation between the belief that there are infinite prime numbers and the mathematical fact that there are infinite prime numbers?

Another strength of this theory is that it can deal with various cognitive processes that can be only normatively studied within the framework of internalism. Think about 'inferential process', for example. In a typically internalistic study of cognitive activity like Artificial Intelligence, the study of 'inferential process' is nothing but the rational reconstruction of the rules that we think ought to govern our cognitive activity. As we have discussed it, the problem of such an approach is that it can tell us nothing about whether human beings actually are able to conduct such inferential processes or whether we actually use such processes. On the other hand, the term 'inferential process' in reliabilism designates an actual biological and psychological process that is at work when we acquire knowledge under certain conditions. The study of such a process can give us the answers to such questions as how we actually perform inferences, how that process brings us knowledge, and to what extent this process is

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39. P.Kitcher 1980.

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unique to homo sapiens.

Another merit of this approach is that it has a theoretical framework suitable for the psychological study of such processes as 'intuition' or 'introspection'. There is no reason for naturalistic epistemology to avoid the study of these intrinsically conscious cognitive processes to distinguish itself from internalism, since there is no reason to think that consciousness itself is an essentially non-natural phenomenon insofar as knowledge itself is considered as a natural phenomenon. When we consider the relative differences between human beings and animals, on the one hand, and between animals and stars, on the other, it seems to be a fairly neutral position to hold that consciousness is a natural phenomenon in the animal world. The only condition that naturalistic epistemology has to respect is that conscious phenomena are purely psychological processes and cannot serve as independent grounds for non-psychological facts which they are about. For example, particular types of conscious processes such as mathematical intuition are regarded as being the independent ground for non-psychological facts such as mathematical facts, by internalism. This is because these conscious processes are considered as the standard or norm of knowledge. When seen from the naturalistic point of view, these conscious processes will be described as having such properties as intensity, content, modes, and

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introspection itself has to be considered as an important method of observing these conscious processes. When these processes or states are described through these parameters, we can investigate the correlation between these parameters and the truth and falsity of the resultant cognitive states, determined by independent methods, in order to determine the reliability of these intrinsically conscious cognitive processes.

Thus, we consider that the reliability theory of knowledge is the best and the only theory according to which the naturalization of knowledge is, at least prima facie, conceivable. Our next task is to consider what kind of problem will arise for this theory when everything is ideally achieved within the limit of natural science. Our criticism is focused on a single problem, namely the problem of the code.

3.3.5. The Code Problem - The Problem of Intentionality -

3.3.5.1. The Inevitability of the Problem of Intentionality for Naturalistic Epistemology

Suppose every technical difficulty surrounding the reliability theory of knowledge has been solved thanks to the progress of related natural sciences. Can, then, 'knowledge' be naturalized? If the category 'knowledge'

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has been naturalized along this line, what we expect epistemology to do is to tell whether a given cognitive agent possesses knowledge or not, from the complete description of his body states (probably brain states) as a cognitive state. It is like scientists' having developed a blood test based on the antibody of the virus after they discovered the AIDS virus. Once we have identified the natural unity of the category of "knowledge", we can tell whether a given phenomenon belongs to that category by detecting this natural unity itself.

How should this scientific "knowledge test", in principle, proceed? First, there has to be a complete list of all cognitive-state-formation-processes, and the working mechanism and the reliability of each process has to be specified so that it can be decided whether the given cognitive state was produced through a reliable process or not. So far there seem to be no serious problems for this project. However, to be produced through a reliable process itself is not enough for a brain state as a cognitive state to be knowledge since a cognitive state (belief) cannot count as knowledge if it is false even if it was produced through a reliable process (e.g. careful reasoning).

It is at this point that the most serious problem for the project of reliability theory emerges. If reliability theory of knowledge, as the best hope for the

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naturalization project, is to complete itself as a natural science of knowledge, at certain point it has to face the following problem : how can a belief (a brain state or other kind of natural states) be true or false? It doesn't make sense to say 'being true' or 'being false' of instances of usual natural categories we now know. For example, it doesn't make sense to say that this glass of water is true or that this electron is false. The reason is that water or electron doesn't 'say' or 'mean' anything; it doesn't have the capacity of being true or false since it doesn't have any content. For something (e.g. a story or a map) to be true or false, it has to have content by whose relationship with something else (an event or geography) it becomes true or false. Thus, the ultimate question is: how can a brain state 'mean' or 'say' a certain content so that it becomes true or false? This is the problem of intentionality, and it is the question that not only reliability theory but all naturalistic theories of knowledge have to eventually face since knowledge contains the element of truth. In a sense, our description of reliability theory is simply intended to show how this problem eventually emerges in the naturalization project of knowledge.

Thus naturalistic epistemology, sooner or later, has to face the problem of how to identify the content of a brain state (or any other natural states) as a cognitive

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state from its complete biochemical (natural) description, namely how to naturalize 'content'. Moreover, this naturalization of content has one rigid condition: the description of brain states cannot contain any cognitive concepts whose identity depends on a brain state's (natural states') capacity to be true or correspond to reality. Let's call these concepts truth-related cognitive concepts. For example, factual perception (perception of a fact that P) is a truth-related cognitive concept since for a cognitive agent to perceive that P implies the truth of P, while sensation is not a truth-related cognitive concept since my feeling that my hands are burning doesn't necessarily imply my hands' actually burning. If we describe a brain state as a perceptual state, we, by this description itself, presuppose the brain state's capacity to be true or false. Of course, the project of naturalization of knowledge can use these concepts at some stages of its development, but the point of our description of reliability theory is that naturalism eventually faces the challenge of naturalizing intentionality without using any concepts that already presuppose intentionality. The truth-related states include such concepts or activities as 'know', 'recognize', 'apprehend', 'intuit','cognize','be

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aware of ' as well as 'perceive' [40].

This condition, however, doesn't mean that naturalism cannot use the concept of 'consciousness' since this concept itself is not truth-related or content-related when we use it in the sense that we have consciousness when we are awake. However, if naturalism uses the concept of conscious state with a content, e.g. a thought, then such a use is not legitimate unless it is shown how a conscious state can be a natural category and have a content at the same time. Water, electron, rabbit, neuron, as such don't have any content. Naturalism owes us an explanation of how a conscious state can have content if it is to be considered a natural category.

Thus, the ultimate challenge to naturalistic epistemology is to account for intentionality, content, truth-capability without presupposing knowledge or its cognates.

3.3.5.2. The Causal/Mirror View of Intentionality

The most easily conceivable approach to this problem of the content of cognitive states of the brain is the idea that our brain is a kind of sophisticated 'camera' or 'mirror' that 'reflects' or records various parameters of our

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40. For a more complete list of cognitive terms whose appearance makes the naturalization of knowledge void by the circularity, see A.Goldman (1979), in Moser 1986 p.172.

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environment and that the cognitive states are the output of such a recording device. Let's call this the mirror view or causal view of the intentionality of the brain. According to this view, the content of each cognitive state is a description of a singular event in the environment, including the cognitive agent itself, and the cognitive agent or its brain is a kind of recording device of events in its environment. Therefore, according to this view, scientists can retrieve and read the content of each brain state if we discover this mechanism just as we can know the air pressure from the reading of a barometer. However, this is exactly the view we rejected when we considered the causal theory of knowledge. Whether we take this mirror view of mind/brain as an account of the concept of knowledge or of other cognitive states such as belief or thought, it is inadequate for epistemology. Let's review why the mirror view of the intentionality of natural states is inadequate for the study of knowledge.

This mirror view of the intentionality of natural states (primarily brain states) no doubt takes perception as the model of human knowledge. The merit of perception as a model of knowledge, from the naturalistic point of view, is that we can assume a regular causal ,therefore, natural relation between the environment as the object of knowledge and our internal representation of it as knowledge itself. Thus the knowledge/object of knowledge

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relation is easily naturalized. This rigid correlation, however, is at the same time the most serious defect for any theory of human knowledge.

What is characteristic about knowledge and, therefore, should be captured by naturalistic epistemology is that it is distinguished from such non-knowledge cognitive states as opinion, guess, hunch, and superstition, partly because they are false and partly because they are not produced in a proper way (a lucky guess is not knowledge). Thus, the naturalistic concept of knowledge as a certain kind of belief presupposes the possibility of false as well as true cognitive states. It is this distinction between truth and falsity that cannot be given by the mirror view of intentionality. Think about the surface of a lake reflecting the mountains. When there is no wind and the surface is quiet, it 'correctly' reflects the mountains, and when the surface is disturbed, its reflection is 'distorted'. Thus, the mirror view might seem to give an account of the distinction between 'correct reflection' and 'incorrect reflection'. However such an account is valid only when we regard the surface of the lake as reflecting mountains, but such view already presupposes the intentionality of the surface of the lake in relation to mountains. On the other hand, if we see the surface in terms of pure causal relation, it is not the mountains but the totality of the universe which includes

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both mountains and the winds that the surface causally reflects. Thus, a disturbed surface as well as a quiet one reflects the totality of the environment in the same way, namely in terms of causal interaction among the parts of the universe. There is no 'correct' or 'incorrect' causal reflection in Nature. This is the so-called error problem for the mirror view, that is, the causal view of intentionality.[41] This problem occurs at the level of perception.

Another feature of human knowledge that seems to be difficult to account for by the causal view of intentionality is the fact that an intentional representation can take much more abstract and universal things as its objects than the things that can be the objects of perception. We already mentioned the difficulty of accounting for the relationship between a belief and its universal content in terms of causation. Thus, even if the intentionality of perception were accounted for in terms of causality, cognitive states that take universal or general propositions as their intentional objects involve another problem that is unique to human knowledge. Aristotle describes this feature eloquently in the famous passage at

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41. For more detailed argument about an error-problem, see the section on Fodor 3.3.6.

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the beginning of Metaphysics[42].

Thus, the mirror view or causal view of intentionality is essentially inadequate for a theory of knowledge. The ultimate source of this difficulty is that the causal theory sees a cognitive activity only as a passive and receptive state and, thus, misses its essentially active aspect. If a cognitive state is regarded as a purely passive state that faithfully reflects the environment's effect on it, there is no way to tell which part of that total effect is its intentional object any more than we can say whether a lake expresses mountains or winds. When there is no unique intentional object related to a state in a non-causal relation, there is absolutely no way to distinguish 'true' and 'false'. In the intentionality of cognitive states, there is an active element that selects something as their unique objects independently of the causal effect of the environment on them and thus exposes them to the possibility of error. Something can err only when it acts. Human cognitive activity shows a high degree

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42. There he lists the following hierarchy of types of cognition: sensation, memory, experience, art, science. Aristotle see the difference between animal and human beings in the gap between memory and experience. Animals, according to Aristotle, can have sensation and memory, but they cannot have any cognitive activities higher than them. This amounts to the Aristotelian thesis that the unique feature of human knowledge is that it takes universals as objects. See Metaphysics, Book I-1.

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of activeness that results in freedom of judgment. Without such an active element, a cognitive state has to be immediately and automatically connected with its environment and there is no possibility of a distinction between truth and falsity.

3.3.5.3. The Biological-Functionalistic View of Intentionality

As we have seen, to tell whether a state is true or false, or whether it has the capacity to be true or false poses an enormous problem for naturalism. However, there is a school of naturalism that sees the possibility of circumventing this problem by referring to the concept of the proper function of biological organs.[43] The concept of proper or normal function is used in such a way as to assert, for example, that the proper function of the heart is the circulation of blood. The idea of the normality or the properness of a biological function, according to this view, is to be ultimately explained by the function's survival value for its possessor in terms of evolutionary theory. According to this view, a belief's or an indicative sentence's capacity to be true or false, i.e. its intentionality, has its basis on its proper biological function, that is, on its survival value. The answer to

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43. See Millikan 1984 , especially chapter 6.

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the problem of intentionality, in short, is that cognitive states can be true or false because of the function they are supposed to perform for the survival of an organism. However, we think that this approach fails to provide the proper concept of content or intentionality that is related to the concept of truth, unless it begs the question.

If intentionality of cognitive states is to be naturalized along this line, biological functionalism has to explain the utility of intentional states for an organism without using any cognitive terms that presuppose intentionality or cognition. These terms include "information", "be informed of", "communication", "communicate with each other", in addition to the cognitive terms we mentioned above.[44] Of course, we can in general tell whether a state of the body is effective or ineffective for the survival of its possessor with respect to that state's biological function, whether the state is cognitive or non-cognitive. However, it is only a particular sub-class of biological functional states that we can call cognitive and intentional. Certain states of the heart have positive survival value over other states, and certain functional states of kangaroo's tail have survival value over other states, but we don't think that heart-states or tail-sates have intentionality and

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44. For the use of the concept of "information" in naturalistic epistemology, see 3.3.7.

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contents. Heart or tail can be functionally normal or abnormal, but cannot be true or false.

The concept of intentionality or content that is needed in naturalistic epistemology is a special property by virtue of which something has the capacity of being true or false, unlike heart-states or tail-states.[45] It is this

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45. In a sense, there are two concepts of intentionality, a wide one and a narrow one. The wide concept of intentionality is the general concept of of-ness ,about-ness, or essentially-related-ness. In this sense, biological organs and their functional states are intentional since there is a certain class of objects such that they have to selectively react to these objects in order to realize their proper function by virtue of which they have their identity as organs. Thus, the stomach has a certain class of nutrients as its intentional objects. On the other hand, intentionality in the narrow sense applies only to those states about which we can say 'true' or 'false'.

Millikan seems to have decided to dismiss this distinction between the narrow and the wide senses of intentionality for the reason that there are intermediary cases between heart-like cases and belief-like cases, such as the case of the bee dance. See Millikan 1984, pp.95-96.

However, we think this cannot constitute a reason to dismiss the uniqueness and importance of narrow cognitive intentionality. In general, that there are intermediate cases between the two distinguished cases doesn't constitute a legitimate reason to think that the distinction has no ground. In the present case, it is only because we have a definite concept of narrow intentionality exemplified by beliefs or sentences that we can interpret the bee dance as meaning or designating a certain state of affairs. We don't understand what it is for a sentence to have meaning by gradually extending our understanding of heart-function via that of bee-dance function to the function of beliefs or indicative sentences. There is a clear distinction between the heart case and the sentence case, and we understand the bee-dance only by metaphorically extending our understanding of what an indicative sentence is, not the other way around.

Moreover, when she defines the concept of intentional icon and its sense by using the concept of mapping, she seems to presupposes the concept of true sentence. In other words, she seems to take the concept of being true as

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concept that has to be naturalized and seems to be hard for biological functionalism to naturalize without begging the question.

It is true that our cognitive states have certain survival value for us: beliefs with intentionality as well as sentences with intentionality have a certain unity by virtue of which we can know important things about our environment and can inform our fellows of these facts. This is the utility of cognitive states. However, we here

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the normal function of indicative sentence as a primitive concept. For example, she says the followings about 'true sentence':

> The most basic or most direct kind of correspondence, then, is the correspondence between a true sentence and a world affair. (Millikan 1984, p.104.)

> My claim is that if we analyze the notion "reference" correctly, we see that it depends upon more fundamental kinds of relations, such as the relation of a true sentence to the world affair it maps, which relation cannot be analyzed in terms of reference for the same sort of reason that "pumping blood" cannot be analyzed in terms of "being designed to pump blood." (Ibid., p.106.)

If she really means that "true sentence" is the primitive concept, we have to consider that she gives up the naturalization of knowledge, meaning or intentionality. The question whose answer she here presupposes and the question that she, as a naturalist, is supposed to answer is why a normal heart state cannot be true while a normal indicative sentence is true. Here we have only a generic concept of normal function while what naturalists need is a specific concept of cognitive normal function.

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use essentially cognitive terms "know" and "inform" to express this idea. The real challenge to biological functionalism is that the concept of cognitive utility has to be expressed without any truth-related cognitive concepts being used. The fundamental question is, "What are sentences, beliefs, and cognitive brain states for?" The answer cannot contain any truth related cognitive terms. This is the basic condition for any attempt of naturalism.

If we answer this question by saying that a brain state has the capacity to be true or false because it has a special cognitive survival value for the organism which a heart-state doesn't have since it informs or sends information about the environment, the answer is not a naturalistic one, and we don't know what other types of answers biological functionalism can offer us. Biological functionalism about intentionality seems to presuppose an unnaturalized concept of 'truth', 'knowledge' or 'meaning'. It is not a view that naturalizes intentionality but a position that has to presuppose a group of concepts that are deeply interrelated to intentionality.

3.3.5.4. The Code View of Intentionality

3.3.5.4.1. The Brain-Computer Analogy Once the inadequacy of the mirror view and the functional view of intentionality is recognized, there is only one type of

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view that can account for the possibility of natural states' (brain states') having content. That is the view that a cognitive state of the brain has the content that P or carries the information that P or means that P because of its biochemical properties and the brain code that connects these biochemical properties with the proposition that P. Let's call it the code view of content or of intentionality. According to this view, each cognitive state is regarded as the concatenation of brain symbols and each brain symbol has a particular meaning or content or carries a certain piece of information according to the brain code that matches each type of brain symbol -- which may be an intra brain substance like endorphin, a particular neuron activation pattern, a pattern of the electromagnetic field of the whole brain, or something else still unknown to our brain science -- with its proper content or intentional object.

There can be various views concerning the nature of this brain code. It may be a relation like the one between an object and its name[46], or the one between an object and

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46. This is a view that takes the brain code something like our own natural language. Cognitive states of brain, according to this view, are called mental representations. This view, which is very widespread now, is called the Representation Theorem of Mind, or the Language of Thought Hypothesis. See J.A.Fodor 1975, and J.A.Fodor 1987, chapter 1.

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its picture[47], or the one between the name of a person and his social security number, or the one between cause and effect.

Whatever the nature of the brain code is, and whatever the unit of the brain symbol is, this code view of content is deeply rooted in the analogy between the computer and the brain. For it is the computer that is the ideal realization of this code view of the content of a cognitive state. In the computer, its physical states have meanings, contents or intentional objects or carry pieces of information because of their physical properties and the machine code that connects basic states of the semiconductor with the primitive commands and addresses of the machine language, so that there is a parallelism between the logical relation among the contents and the physical relation among the states of the semi-conductor.[48]

3.3.5.4.2. The Nature of a Computer Code This computer analogy itself poses a serious problem to naturalistic epistemology. For after all, these computer codes were made by either I.B.M. or other industrial or academic institutions, and it is because the operation system is

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47 An example of such a view is recently developed in C.McGinn 1988.

48. For the detail of the theory of content based on computer analogy, see Fodor 1975 chaps 2 and 3, and Pylyshyn 1980.

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implemented in a computer according to the industrially standardized machine code that each computer state has a content or meaning or carries a piece of information. Each physical state of a computer itself has no intrinsic meaning or information. Thus, insofar as the computer is concerned, carrying information or having meaning is not an intrinsic property of any physical state, but a property relative to an artificial code. Thus the same computer state can carry or can be interpreted as carrying one content under one code and another under a different code. The reason we think that a computer state has its own intrinsic code and content is that we usually think about such states only in the context of using a particular computer, and assume the existence of the code of the computer as an artifact, not as a natural object. A machine has its own code because it has been designed according to that code, but a machine state as a purely physical state has no intrinsic code or content. Thus, the fact that a computer state carries certain information is conditioned by the history of computer science and industry, by no means is it a fact about the natural world unless we naturalize the concepts of technology, industry, artifact, machine and history without referring to the concepts of meaning or knowledge.

How can such a concept of code, when applied to the brain, be naturalized? How, on the one hand, can we rely

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heavily on analogy with the computer, and, on the other hand, reject the non-naturalness of a computer code?

3.3.5.4.3. The Nature of a Causal Code There is a small hope in nature itself for the solution to this dilemma. This lies in the group of such concepts as causal code, causal information, and causal communication. Molecular biologists, for example, without hesitation, talk about genetic information or the genetic code, and, by doing this, they don't mean that genes are written according to an artificial code like the American Standard Code for Information Interchange (ASCII). Immunologists also talk about the communication between immune cells, the storage of information about antigens by immune cells (this is the core of the concept of immunity), or the recognition of viruses by immune cells, but they don't mean that these cells know a particular language or code like English or ASCII. How can they talk about code, information, and a communication, without going beyond the range of Nature defined by Modern Natural Science?

They can do so because they are talking about the causal code, the causal concept of communication, and the causal concept of information, which have no intentional element at all. Let's take an example. Molecular biologists say, e.g. that a certain sequence of DNA carries the information that its possessor has blue eyes.

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What is meant here is not that the sequence of DNA can be translated into a proposition that its possessor has blue eyes according to one code. If this is what is meant, the concept of genetic information is tied with a particular code, and the same DNA sequence can be interpreted in different ways according to different codes, and thus, has no intrinsic content. There are no such codes or languages in Nature. What is meant here is that that particular DNA sequence is causally determinant of the fact that its possessor has blue eyes. When a person's gene contains that sequence of DNA, that person has blue eyes because of the causal effect of that sequence mediated by a very complex mechanism. Therefore there is no specific code that connects the natural symbol(gene) and the information it carries (phenotype). If there is any, it is the laws of Nature themselves. A natural symbol (gene) and the information causally carried by it (its possessor has blue eyes) are connected by the biological necessity that regulates the production and reproduction of bio-organisms. Such concepts as information, code, or communication, in molecular biology or immunology have no cognitive elements. However, they are useful and important when there are many independent biological causal elements that can be combined in many ways as in molecular biology or in immunology, but the relation between natural symbols and the information carried by them can be always cashed out in terms of causal

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determinant relations without any residue insofar as the concept used is the causal concept of information and its derivative. We can define causal information (meaning or content) in the following way:

The natural symbol S in itself causally carries information P or causally means that P or has a causal content that P
if and only if an S causally brings about the state of affairs P according to the laws of nature that involve the natural category S.

Since the essential relationship between the natural symbol and its content (information) is the existence of causal connection and the direction of the causal action is less relevant, we can also imagine that people talk about the natural symbol and its content when the symbol is the causal result of the content. Thus we can say that a fossil carries information that the animal lived ten million years ago if the laws of nature allow us to determine the age of the fossil from the proportion of C14 contained in it.

3.3.5.4.4. What Can a 'Brain Code' Be? Does this causal concept of content(information), as a matter of

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fact, apply to the brain state as a cognitive state? If it does at all, each brain state as a cognitive state has to be regarded as a natural symbol. Then what sort of contents can be causally connected with these brain symbols through the laws of Nature? They cannot but be biochemical events or other events causally related with them, as in the case of the gene. On the other hand, what do these brain symbols have to express or represent if they are to properly function as the cognitive states of a human being? Every thing we can think about -- literally, every thing thinkable by human beings, since the brain states as cognitive states are supposed to be the universal medium of all possible human thoughts and beliefs.

Are these conditions compatible with each other? Are there any laws of Nature that connect the brain states as such not only with biochemical events or entities, but with all thinkable things from romance to taxes. One would have to say no.

Besides this almost impossible requirement on the laws of Nature, which have to support the universality of natural symbols of brain states, the concept of causal content is essentially inconsistent with human knowledge. The causal concept of content requires that the brain states as cognitive states have rigid and determinant relationship with the events that are expressed as their contents, like the one between a gene and its phenotype.

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This means either one or the other of the following things: (1) the occurrence of a brain state, namely our holding a certain belief, insofar as the boundary conditions of relevant laws of nature hold, i.e. under normal conditions, is always caused by an event that is described by the content of that belief, or (2) the occurrence of a brain state , insofar as the boundary conditions of the relevant laws of nature hold, always brings about an event that is described by the content of that belief. (1) is nothing but another version of the mirror view of intentionality. (2) is an amusing fantasy that all our beliefs are self-fulfilling. Therefore, the contents of our beliefs cannot be causally carried by brain states.

Then why can't the brain or Nature use an ASCII-like code? Why, after all, can't the computer codes be naturalized? Because they are made by human beings? But why can't artifacts be naturalized? Aren't human beings parts of Nature? if we are, why can't the things made by us be naturalized? Can't birds' nests be naturalized? If they are, why not ASCII? To answer these questions, we have to understand how non-causal codes are different from causal ones.

A gene carries certain information <u>in itself</u> since its informativeness only depends on the laws of Nature. In

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other words, it has information insofar as it is a integral part of Nature. On the other hand, a computer state carries certain information only under a certain non-causal code since it is not any laws of Nature but a specific non-causal code (a kind of language) that connects or correlates the computer state with its content. The symbols of a computer are non-causal symbols.[49]

Then what does this phrase "under a certain non-causal code" mean? What does it mean for a symbol to be under a code like ASCII or English or any cryptographic code? Suppose I say that it is raining in Japanese to a person who doesn't know Japanese. Do my words carry the information that it is raining? Are they under the code of Japanese? Suppose I randomly write a sequence of twenty numerals on a sheet of paper. Suppose that sequence, in one cryptographic code, means that New York is going to be bombed, and in another, that it will snow tomorrow, without my knowing either code. Does my sequence mean anything? Does it carry any information? Is it meaningless or is it ambiguous? If it is ambiguous between meaning that New York is going to be bombed and meaning that it will snow tomorrow, how many other hidden cryptographic codes are needed to exhaust the meaning of my sequence? Does any script have infinitely many meanings since there are

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49. It is Grice who made this distinction between natural meaning and non-natural meaning. See Grice 1957.

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infinitely many logically possible codes? Suppose I am eager to convey to a girl with whom I share no language that I love her. Suppose I say, "I love you." with the full strength of the mental act of intending to convey the information that I love her. Do my words have meaning?

All these questions are answered by one concept, namely the knowledge of a code. On the other hand, until we think about the sender/receiver's knowledge of a code as the essential condition of a signal's having a meaning or carrying information, these questions cannot be answered, and we will get lost in the forest of information, code, and communication. A non-causal symbol or signal carries information only relative to a code, but this "relative to a code" doesn't mean "under the existence of the code as an abstract system", or under the sender's intention to convey information according to a code. It means "relative to the sender and the receiver's shared knowledge of the code". Even though the code as an abstract object itself exists, if neither sender nor receiver knows the code, the signal cannot carry any information. Even if the sender has a strong intention to convey the information, if he doesn't know the code, he cannot send a signal with information. Even if the sender sends a signal according to a code, if the receiver doesn't know that code, it is highly problematic whether the signal carries any information at

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all. If it does, you could send a message even to a rock.

When a signal carries certain information according to a code, it carries that information relative to the sender/receiver who knows the code. The relativity of code- dependent-information is the relativity to the knowledge of the code. In usual situations, such knowledge of a code is just assumed. Thus, when we talk about the state of a computer, we assume we know or can learn the code if necessary.

This knowledge relativity of the non-causal code has important relevance to our current discussion. Suppose brain states as cognitive states carry information or have content relative to a certain non-causal code. What we want to know is the information a brain state carries under that code from the complete natural description of that state. Since this information is relative to that code, it is relative to the receiver (the knowing agent) since only if the receiver knows that code, does it carry the information. Thus to know the content of a given brain state of a cognitive agent, we have to know whether the agent knows that code unknown to us according to which the brain state as a belief has the content.

Remember where we started. We assume that everything we can expect from the progress of the sciences in the future is already given, and we started applying the scientific "knowledge test" to our cognitive agent, and we realized

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that we have to identify the content of the given brain state. In this process, it has turned out that we have to know whether the agent knows a certain code to know the information carried by that brain state if that state does carry any information. We cannot determine whether this agent knows this code, even if there is any, by the very scientific "knowledge test" we are applying now since its reapplication only requires another application of this test to know whether the cognitive agent knows the code. We cannot also expect the further progress of science to help us in the future since, by hypothesis, we already have all we can have in this world. The path we initially found most promising is now leading us to an impasse.

3.3.5.4.5. The Behavioristic View of a Code Can we, then, independently investigate this concept of the knowledge of a code from a different perspective, for example, from a purely behavioristic point of view? Our earlier discussion already suggests a negative answer, but let's see what is the necessary outcome of this behavioristic approach to the problem of the knowledge of a code.

Even if we are behaviorists and try to define knowledge of a code like speaker's knowledge of his own langauge or an engineer's knowledge of a particular industrial code in terms of input-output relationship

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between stimuli and communicative behavior of a cognitive agent, we cannot take a straightforward dispositional view of knowledge, as we argued in our discussion of an Aristotelian view of knowledge, though such behaviorists as Quine or Ryle seem to believe otherwise. For there is simply no deterministic or even probabilistic relation between 'input' and 'output' of a code knower that constitutes knowledge of a code since each code knower exercises his knowledge of the code according to his particular purpose and situation and such purpose or situation is independent of his knowledge of a code. In other words, two people who are completely different in other respects can share the same knowledge of a code. Thus, as Aristotle already remarked in Metaphysics Book IX[50], this input-output relation has to be mediated not only by knowledge of a code but also by the desire or conscious choice or intention of the knower, among other things. In other words, if behaviorism is to understand knowledge of a code in terms of communicative behaviors, it has to account for how this inter-relationship between knowledge of a code and 'desire' or 'intention' determines the communicative behaviors of the knowers. For behaviorism, of course, this relation has be a causal one, and knowledge of a code, in this case, has to be considered

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50. 1048a:1-15.

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as an internal state that is causally effective for the production of communicative behavior in conjunction with 'desire', rather than a disposition which independently and necessarily manifests itself under certain conditions. Thus behaviorism, which started with the rejection of the code problem, has to face the problem of the content of internal representation and code once again, since knowledge and desire are not determinant of behavior as knowledge as such, or desire as such, but rather as knowledge of particular contents and desire of particular objects and contents. Behaviorism can not invoke the concept of disposition this time, either. Our behaviorism started trying to naturalize knowledge of a code in terms of behavior or disposition in order to avoid the problem of contents. In such a process, it is now facing the very thing it tried to avoid.

In short, dispositional behaviorism about knowledge of a code and about knowledge in general seems to have two choices: one is to halt only after long delay as discussed above; another is to bite the bullet and narrowly restrict the concept of knowledge to that of conditioned behavior. In any case, it doesn't seems to be a theory of human knowledge with independent merit.

3.3.5.4.6. Conclusion The whole story above tells us that the category 'knowledge' cannot be naturalized insofar

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as we identify each instance of knowledge with a certain type of brain state or any sort of natural state. Insofar as these states are characterized by the laws of Nature as the common language of Nature, naturalization of knowledge seems to have little hope, even if we granted that such a project is not wrong-headed from the beginning.

Despite this conclusion, we have to continue our painful journey for a while longer to examine two other important attempts to naturalize the concept of knowledge or that of meaning. They are J.J.Fodor's attempt in his Psychosemantics to naturalize meaning and F.Dretske's attempt in his Knowledge and the Flow of Information to naturalize knowledge. Though these two books don't belong to the literature of epistemology in the narrowest sense, the essential problem involved in their arguments is the relationship between knowledge and nature.

3.3.6. J.A.Fodor's Defense of the Naturalization of Meaning

J.A.Fodor develops an argument in the chapter called "Meaning and the World Order" of Psychosemantics[51] to the effect that the naturalization of meaning is, at least,

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51. J.A.Fodor 1987, chapter 4.

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possible. In a sense, his argument there is the mirror image of our argument above. We pursued the possibility of naturalization of knowledge, and we encountered the problem of code or meaning, which in its turn referred us back to the problem of knowledge again. There he pursues the possibility of the naturalization of meaning or code, and seems to encounter the problem of the naturalization of knowledge. Thus Fodor's main effort is directed to the naturalization of knowledge though he doesn't present the problem in explicit form. Let's see how his argument goes.

The brain code for Fodor -- the "Language of Thought" -- , as it was initially introduced by him along the computer-brain analogy -- is to be considered as a non-causal code in our sense[52]. It is postulated mainly because of the need to give a realistic and naturalistic basis to belief-desire psychology. The result is the so-called Representational Theory of Mind or Intentional Realism, which asserts that when we have a particular propositional attitude (e.g. belief) to a certain proposition, there exists a corresponding brain state with that propositional content.[53] Because of its non-causal nature, the Language of Thought can be a vehicle of human thoughts that are held

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52. J.A.Fodor 1975, pp. 65-78, 99-123.

53. J.A.Fodor 1981, chapters 6 and 7 ("Computation and Reduction", and "Propositional Attitudes")

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to a great extent independently of the causal determination of the environment, internal or external.

What he tries to show in "Meaning and the World Order" is that this brain code can be based on the causal relation, or in our terms, that this code can be interpreted as a causal code. The virtual conflict between a non-causal aspect of the Language of Thought and the requirement of causal determination from the naturalistic point of view is the basic theme of "Meaning and the World Order".

Fodor gives the following as the first formulation of this brain code as a causal code.

> ...the symbol tokenings denote their causes, and the symbol types express the property whose instantiations reliably cause their tokenings. (J.A.Fodor 1987, p.99.)

Such causal and determinant relation doesn't exist between brain symbols of the Language of Thought and what they mean. We think about a certain thing in drastically different situations, and this is what distinguishes thought from perception. We think about a rabbit sometimes in the presence of a rabbit, sometimes in its absence, sometimes because we want to have a rabbit as a pet, sometimes because we want to eat the meat of a rabbit, sometimes because we want to think about Quine's example of indeterminacy of translation. This is why the

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dispositional view of knowledge or the causal theory of knowledge is wrong and why the Language of Thought has to be postulated. Fodor, of course, sees this difficulty, and considers and tries to solve two problems that embody this conflict.

The first problem is the "error problem". If symbols are totally naturalized by causal laws, it means that whenever I say,"It's a horse", this utterance is caused by an actual horse, hence there can be no error. However, we sometimes mistake something other than a horse, say, a cow for a horse. Therefore, meaning cannot be naturalized. What is his solution? It goes like this: Assume we actually make mistakes and say,"Horse" when we see a cow. Of course, we also say "Horse" when we see a horse. Thus, both a cow and a horse cause the utterance of "Horse ". If the causal theory cited above is to be true, "horse" has to mean HORSE OR COW, but it doesn't. Why? Fodor's answer: Because there is asymmetry between a horse's relation with "horse" and a cow's relation with "horse". He says:

> ...misidentifying a cow as a horse wouldn't have led me to say 'horse' except that there was independently a semantic relation between 'horse' tokenings and horses. (J.A.Fodor 1987, p.107.)
>
> ...the fact that cows cause one to say 'horse' depends on the fact that horses do; but the fact that horses cause one to say 'horse' does not depend on the fact that cows do. (Ibid., p.108.)

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> So, the causal connection between cows and 'horse' tokenings is, as I shall say, asymmetrically dependent upon the causal connection between horses and 'horse' tokenings. (Ibid., p.108.)

What he is talking about is the fact that I wouldn't say, "Horse!" even if I mistook a cow for a horse <u>if "horse" didn't mean a horse</u>. Fodor's insight that this fact is essential for explicating the difference between relations horses and cows have with the word "horse" is no doubt correct. We actually have an asymmetry between "horse"-horse relation and "horse"-cow relation as he points out. We, however, think that the essence of this asymmetry exists in a simple and basic linguistic fact about English that "horse" means a horse. Fodor , on the other hand, thinks that a more basic difference exists in the natural world that is the source of this asymmetry and that this difference is the one between two <u>different kinds of causal relation</u>, one that is independent and another that is dependent on the other.

We agree with Fodor that in the "horse"-cow relationship, the error depends on something about the "horse"-horse relationship. But we think that this 'something' in the latter is not the causal relation between the symbolic type "horse" and the natural kind horse but the linguistic fact about English that "horse" means horse.

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To clarify this point, we have to distinguish between the singular causal relation and the universal causal relation, obscured by this example. When we regard two events as instantiations of two universals and consider the relationship between them as an instance of nomological and determinant relationship between these two universals, the causal relationship we recognize between these two events is universal causation. When we plan our action, we have to explore this type of causation since we can only expect a certain type of result for a certain type of action when there is such universal causal relation. On the other hand, if we consider one event as caused by another but don't think that the same type of consecutive occurrence of two events will be repeatable, the causal relation we recognize between these two events is singular. We can use the singular causal relation for the explanation of historical events, but it is usually hard to use it for the planning of future action. For example, we 'explain' World War I as caused by the assassination of an Austrian archduke, but cannot plan to cause another world war by assassinating the prince of some country.

Now, we have to recognize that it is a singular causation that is supposed to exist between "horse" and a cow, while it is a universal causation that is supposed to exist between "horse" and a horse if Fodor's examples is to

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"Horse", my seeing that cow and my producing that utterance "Horse" are related only as singular cause and effect. In this example, this is not a part of the supposition that there is a causal relation between symbolic type "horse" and natural kind cow, and, as a matter of fact, there is no such relation between them. On the other hand, the causal relation supposed to exist between "horse" and a horse is a universal causal relation, and not a singular causal relation between someone's seeing a particular horse and producing a particular utterance of "horse". Therefore the point of this example should be that singular causation between a particular cow and a particular "Horse" is dependent on universal causal relation between the natural kind horse and the symbolic type "horse". Then, the example at least makes sense.

However, the problem is that there is no such universal causal relation between the natural kind horse and the word "horse", whether in English or in Mentalese. We very often utter "horse" or think about "horse" in the absence of a horse and we very often don't even think about a horse in the presence of a horse. It is this absence of universal causal relation that dooms the causal theory of knowledge to fail as we have argued earlier. Thus, Fodor seems to be trapped by a naive sort of causal thinking that he had supposedly rejected when he introduced the Language of Thought.

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However, the most serious problem of Fodor's argument is the way he sees this asymmetry, as a result of which he seems to miss the point of this example. This asymmetry is expressed by the following counterfactual conditionals: I wouldn't say,"Horse", even if I mistook a cow for a horse if no horses would cause me to say,"horse", namely if "horse" didn't mean a horse, while I would still say, "Horse", if I recognize a horse even if no cows would cause me to say,"horse". He sees that this asymmetry is an asymmetry between two causal relations in the natural world. Thus he concludes that we can differentiate cow-"horse" relation and horse-"horse" relation in purely naturalistic terms. However these two counterfactuals are based on one relevant assumption, namely the assumption that I know that "horse" means a horse. If I don't have this knowledge, cow-"horse" relation and horse-"horse" relation would show no difference since I would be mute both before a cow and a horse. In other words, speaker's knowledge of language, whether English or Mentalese, is essential for this asymmetry to be manifested in different linguistic behaviors. This means that the asymmetry expressed by that pair of counterfactuals is not <u>a fact about the natural world</u> unless knowledge itself is naturalized. In other words, the naturalization of meaning depends on the naturalization of knowledge, provided that

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the error problem is crucial for the naturalization of meaning.

Fodor's understanding and the solution of the second problem has exactly the same structure. He correctly notices the essential problem of the causal account of meaning, but he fails to see that the source of the problem is knowledge. The second problem is that of theoretical terms. They pose a serious problem to the causal theory of meaning since the correlation between the utterance of these terms and the observation of the denotations of these terms is not uniform from one speaker to another. In short, the heterogeneity of linguistic behavior of different speakers with respect to theoretical terms like 'proton' reflects the heterogeneity of theoretical knowledge among them. Therefore we cannot explain this discrepancy among the speakers without mentioning this difference of knowledge. Such difference cannot be explained in purely naturalistic terms unless knowledge is naturalized, which we think impossible. Let's see how Fodor deals with this problem.

For example, we always have causal connections with protons, but it is only when an expert sees the trace of a proton in a picture of a cloud chamber that such causal interaction between us and the proton prompts the utterance of ,"proton". Even if I see the same photograph, that

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would not prompt me to say, "proton", if I don't have expertise in modern nuclear physics. This is a correct observation, and this difference , of course, consists in the difference of my knowledge of physics and an expert's knowledge of physics. Actually Fodor correctly says that we cannot specify when the utterance of the word "proton" is actually caused by protons without using a concept such as "knowing physical theories". However, Fodor tries to put things into mechanical and naturalistic terms:

> What we need is some process that will put a token of 'proton' into the belief box whenever a proton in the world is causally responsible for a token of 'red' being in the belief box [since a red spot, in Fodor's example, is a marker of a proton that a person who knows physics can associate with a proton]. ...
>
> But though protons typically exert causal control over 'protons' via the activation of intentional mechanism[knowledge], a naturalistic semantics doesn't need to specify all that. All it needs is that the causal control should actually obtain, however it is mediated. The claim, to put it, roughly but relatively intuitively, is that it's sufficient for 'proton' to express proton if there is a reliable correlation between protons and 'protons' effected by a mechanism whose response is specific to psychophysical traces for which protons are in fact causally responsible. (J.A.Fodor 1987, p.121.)

Fodor here equates theoretical knowledge of physics with the 'mechanism' that mediates the presence of theoretical entities such as protons with the utterance of their names. Learning physics is acquiring this 'mechanism'. His solution depends on this 'mechanism'. The question we

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cannot help asking is "How is this 'mechanism' different from 'disposition' in the sense we defined above?" If this is nothing but a disposition, Fodor seems to take the path he originally rejected, again. If this 'mechanism' is different from a disposition, then Fodor's naturalism owes an explanation of what kind of natural entity it is since to call something "mechanism" itself doesn't naturalize it. If his mechanism is something like our concept of non-dispositional entelecheia whose actualization is the recognition of truth, then he is no longer in the sphere of naturalism. In any case, his solution is, at best, vastly incomplete and potentially betrays his representational naturalism.

The recurrent theme in "Meaning and the World Order" is Fodor's tacit return to what he originally rejected when he introduced the Language of Thought, namely dispositional behaviorism and the causal theory of knowledge. This is the move he is forced to make when he tries to complete his naturalism, and such a move seems to be caused by his relative neglect of epistemology as such. If such a return is not his intention, he has to formulate a different type of epistemology, which is neither dispositional behaviorism nor representationism. Of course, such an epistemology is possible; the problem is how it can be a naturalistic one.

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3.3.7. The Information Theory of Knowledge: The Case of Dretske

There is a school of naturalistic epistemology called the information theory of knowledge (ITK). The basic idea of this school is that to know is to have a cognitive state (brain state) that carries information about the world. When expressed by the magical word 'information', it may sound like something radically different from other variations of naturalism, but, as will be seen, it is nothing but another variation of the causal theory of knowledge and the criticism of causal theory also serves as the essential criticism of ITK. However, because of the especially ambiguous nature of the term 'information', there is slightly more complication in ITK than in a straightforward causal theory. That is why we here briefly examine Dretske's ITK, who is the most prominent advocate of it, to show what is the inherent difficulty of ITK as a variation of causal theory.

Before considering Dretske's ITK, let's see why ITK is a variation of causal theory, and how the ambiguity of 'information' masks this basic nature.

A 'signal' is said, in a theory of information, to carry certain piece of information about its source and to

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transmit this information to the receiver who receives this information about the source and thereby is informed about the source. In short, a signal's carrying information consists in the possibility of its potential receiver's 'knowing' about its source by the reception of the signal, and thus there is an essential connection between the concept of information and the concept of knowledge. This is the ground for the possibility of information theory's successfully accounting for knowledge as well as the possibility of its circularly presupposing the concept of knowledge. The relationships between these two concepts are, at least, very subtle.

In this informational relation among the source, the signal,and the receiver, the signal carries information about the source not by miracle, but by its relationship with the source. There are two types of concepts of information depending on the nature of this source-signal relation.

In the prototypical case of the informational relation, namely communication between two human agents, this relation consists in the signal's being encoded in non-causal code that the source(the sender of the message) knows. Thus, a letter carries information about its source because it is written in the language known by the sender. Unless the source initially knows this non-causal code, there is no possibility for the signal to carry information

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this way. This is the non-causal concept of information. In this type of informational relation, the signal and the source have to be mediated by the source's knowledge of this mediation itself (the code). Without this knowledge of mediation (code), there can be no information in this sense. From the receiver's point of view, he has to know the code shared by the sender to retrieve the information carried by the signal. Knowledge is essential for both the existence and the retrieval of the information in this case.

However, we use the concept of information far beyond such a prototypical communication situation, and this extension and the analogical relationship between the prototypical cases and the extended cases is the strength of the concept of information. We, for example, say that a fossil carries information about an extinct species, say, a dinosaur. In such a case, the signal, fossil, and the source (the dinosaur) are mediated not by the source's knowledge of this mediation but the causal relationship between them governed by the laws of Nature. This is the causal concept of information. The fossil carries information about the dinosaur because it retains the traces of the dinosaur produced in accordance with laws of Nature. Whether the source, the dinosaur, knew about this mediation, causal relation, is irrelevant to the very existence of information in the signal; indeed, whether the

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source can have knowledge at all is irrelevant for the existence of information. Thus, the existence of information in this sense doesn't depend on the pre-existence of knowledge; it exists on the signal in itself, whether anybody knows about it or whether there are any intelligent agents in the universe or not. We can call this concept of information the objective concept of information. Of course, even this objective and causal concept of information has a certain connection with knowledge in that the receiver cannot retrieve information from the signal without minimum knowledge of the laws of Nature. However, the existence of the information itself is independent of any knowledge. Whatever we know about the history of the earth, the fossil carries information about the dinosaur for potential receivers.

If we are to naturalize knowledge, the concept of information to be used is, therefore, the causal and objective one, and the main difficulty for the Information Theory of Knowledge is how to consistently apply this objective concept of information to human cognitive activity as well as to examples like the fossil, in order to account for what knowledge is. One form of this difficulty is how to disqualify apparent non-knowledge information carriers such as fossils, artifacts like thermometers, digital or analog, and biological systems like immune systems. These objects possess states that

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carry information in the objective sense, but the concept of knowledge to be accounted for is the one that clearly doesn't apply to them.

Another form of difficulty is how to account for beliefs and thoughts independent of the causal necessity constituted by the laws of Nature and, thereby, how to account for the possibility of error. That these problems are the ones we have already encountered in the case of straightforward causal theory shows that the Information Theory of Knowledge is nothing but another variation of causal theory, and this is because the concept of information used by ITK is based on the concept of causality. In many cases, ITK only abuses the systematic ambiguity of the concept of information and looks as if it could successfully naturalize knowledge[54]. Namely, it usually starts with an objective concept of information when it defines knowledge in general terms , and ends with the non-causal concept of information when it describes how the informational concept of knowledge successfully applies to actual human knowledge.

The strength of Dretske's analysis in his Knowledge and the Flow of Information is that he is well aware of these problems as well as the danger of ambiguity, and tries to solve them. Let's see how he copes with them.

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54. For such an example, see Churchland 1979, chapter 5.

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Though Dretske's 'definition' of information in this book is complicated and vague[55], it is clear that the concept of information he uses there is what we would call an objective and causal one. For example, he says:

> This is one way of thinking about information. It rests on a confusion, the confusion of information with meaning. Once this distinction is clearly understood,, one is free to think about information(though not meaning) as an objective commodity, something whose generation, transmission, and reception do not require or in any way presuppose interpretive processes. (Dretske 1981, vii.)
>
> The ultimate source of the intentionality inherent in the transmission and receipt of information is, of course, the nomic regularities on which the transmission of information depends. (Ibid., p.76.)[56]

Once he adopts this objective concept of information, it is necessary for him to confront the questions we have raised earlier. He discusses them extensively in Part III of

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55. See Dretske 1981, chapter 3. There, he talks about the necessary involvement of knowledge in the definition of information, but what he talks about is not the source's knowledge of the mediation, but the receiver's pre-knowledge about the source. Thus, Dretske's concept of information doesn't presupposes the source's (sender's) knowledge about the medium (the code) as the necessary condition for the existence of information. In this sense, Dretske's concept of information is different from the non-causal one.

56. The nómos Dretske here talks about is, of course, not the law in general but the laws of nature. See Ibid., p.76. Thus, whether linguistic code is a law of nature of not has to yet be asked.

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Knowledge and the Flow of Information, which starts with the following passage:

> We have provisionally used the concept of belief to distinguish genuine cognitive systems from mere processors of information. A tape recorder receives, processes, and stores information. But unlike a human subject exposed to the same acoustic signal, the electronic instrument is incapable of converting this information into something of cognitive significance. The instrument does not know what we can come to know by using it. The reason the tape recorder does not know is that the information it receives neither generates nor sustains an appropriate belief.
>
> But what is a belief? What makes some systems capable of occupying belief states but not others? Can computers have beliefs? Frogs? Flatworms? We do not speak of a thermostat as having a belief when it "detects" a drop in the room temperature ... Yet, if I did this,... I would be credited with a constellation of beliefs... Why? What is the difference? (Dretske 1981, p.171.)

How does Dretske solve this problem? How does he distinguish the cognitive structures[57] such as human beings or frogs from mere information processing mechanisms such as thermostats or voltmeters? The strategy he employs here is to set the three modes of structure, namely (1) structure merely carrying information, (2) semantic structure[58], (3) cognitive structure[59] by defining the distinctive feature for each, and relegating the

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57. See Ibid., p.175.

58. See Ibid., p.180.

59. See Ibid., p.193.

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information processing mechanism to the first category and the cognitive agents to the third category, with the second category used as a mediating concept. It at least sounds like a reasonable strategy. Let's see how it works.

It is the concept of digitalization that Dretske uses for distinguishing the second category of structure , namely semantic structure, from the structure merely carrying information in general[60] In a word, a signal is called a semantic structure if it carries information not in analog form but in digitalized form, and the information thus carried in digitalized form is called its semantic content. The concept of digitalization, in its turn, is defined in the following way:

> I will say that a signal (structure, event, state) carries the information that s is F in digital form if and only if the signal carries no additional information about s, no information that is not already nested in s's being F.
> (Dretske 1981, p.137.)

Thus, if a signal carries information in digital form, that information can be called the signal's proper and unique information; Dretske calls it the signal's semantic content.[61] On the other hand, if a signal carries

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60. Ibid., pp.177,180-181.

61. Ibid., p.177.

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information in non-digital form, namely analog form, it cannot have any unique information we can call its proper content. For example, a person can send a letter or a picture to his friend to inform him of his current state. If he sends a letter, it has definite content expressed by the sentences. We can call this content the semantic content of the letter. On the other hand, if he sends a picture, there is no way to define the semantic content of the picture about that person. Depending on how carefully one watches the picture, the amount of information he can retrieve drastically differs.

Dretske sometimes sounds as if he can define cognitive structure and distinguish cognitive states from other information carrying states solely or basically by this analog-digital difference. He seems to imply that the difference between seeing and knowing consists in the one between the analog form of information and the digital form of information when he says:

> The difference between seeing (hearing, smelling,etc.) a t which is F and believing or knowing that t is F is fundamentally the difference between an analog and a digital representation of the fact that it is F. (Dretske 1981, p.182.)[62]

Though the distinction between analog and digital in this

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[62]. Also see Ibid., p.181.

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sense is important and may have some relevance to the distinction between perception and cognition, the analog-digital distinction itself cannot be used to draw this line. For example, think about an analog thermometer and a digital thermometer. The concept of knowing or believing that Dretske tries to capture is the one that doesn't apply to either of them. There is a difference between these two devices, but it is not such a difference that one thermometer becomes a knower or believer because of it, while the other remains a mere information processing device. It may seem that this distinction at least draws an important line between the causal concept of information and non-causal code related concept of information, since the digital thermometer no doubt depends on a certain industrial code in its construction.

However, this is not the case, either. The concept of the digital form of information exists in Nature, at a very primitive level. Think about the molecular structure of water. It becomes crystallized below the freezing point and takes liquid form between the freezing point and the boiling point. Thus, from the molecular structure of water, we can know whether the temperature is below or above the freezing point <u>just as</u> from the sentence "I am ill" in the letter from a friend we can know that he is ill but not what disease he has. The molecular structure of water carries information about the temperature in <u>digital</u>

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form. Such a digitalized form of information in nature is no exception at all. Electrons around an atom carry information about their energy level in digital form, the gender of an organism carries information about how the conception took place in digital form, and all natural processes that have so-called 'singularity' such as black holes carry information in digital form. In other words, many things in Nature which have no cognitive function react very selectively to external causes. It is not true that the distinction between continuity and discreteness corresponds to Nature without cognition and Nature with cognition. In the history of the universe, discreteness is as old as most basic particles themselves. If we use the concept of digital form for delineating cognitive structure or a non-causal code, what we have to say is what kind of digital form constitutes them.

Though it seems so, digitalization is not the only device by which Dretske tries to delineate the cognitive structure. His account has more depth, and that depth consists in the observation of the difference between semantic structure and cognitive structure.

Even if we assume the definition of semantic structure in terms of digitalization as a first positive step to the delineation of cognitive structure, it is clear that this concept is still insufficient in one crucial point: semantic structure thus defined is still tied by the

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necessity of causality though it reacts to external causes only selectively. Thus, molecular structure of water, electrons of an atom, and a digital thermometer react only selectively to the external actions on them, but they always react to particular selected actions, and they cannot act without these selected causes.

> Hence, of all the information carried by an incoming signal, a semantic structure is causally sensitive to a unique component of this incoming information. It is sensitive, selectively sensitive if you will, to that component of the incoming information that defines the structure's semantic content. (Dretske 1981, p.180.)

The immediate consequence of this causal determinedness of semantic structure is the now familiar error problem. For semantic structure as such there is no error or misrepresentation, which has to be possible if we are to adequately account for belief or knowledge. However, Dretske doesn't ignore this problem; indeed the whole of chapter 8 of Knowledge and the Flow of Information is devoted to this problem, and the intended solution is to define cognitive structure as a special category. Dretske characterizes this cognitive structure as follows:

> Suppose that during the period L a system is exposed to a variety of signals, some of which contain the information that certain things are F, others of

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> which contain the information that other things are not F. The system is capable of picking up and coding this information in analog form (i.e.. giving it a perceptual representation) but, at the onset of L, is incapable of digitalizing this information. Suppose, furthermore, that during L the system develops a way of digitalizing the information that something is F: a certain type of internal state evolves which is selectively sensitive to the information that s is F. This semantic structure develops during L in response to the array of information-bearing signals (assisted, presumably, by some form of training or feedback). Once this structure is developed, it acquires a life of its own, so to speak, and is capable of conferring on its subsequent tokens (particular instances of that structure type) its semantic content (the content it acquired during L) whether or not these subsequent tokens actually have this as their informational content. In short, the structure type acquires its meaning from the sort of information that led to its development as a cognitive structure. Subsequent tokens of this structure type inherit their meaning from the type of which they are tokens. What this means, of course, is that subsequent tokens of this structure type can mean that s is F, can have this propositional content, despite the fact that they fail to carry this information, despite the fact that the s (which triggers their occurrence) is not F. (Dretske 1981, p.193.)

This is Dretske's Genesis of 'meaning'. Does he successfully tell us the true story? The key, of course, is the concept of cognitive structure. Cognitive structure is, according to this crucial passage, a semantic-structure-developed-into-something-other-than-itself, and it differs from its origin in that its token can be generated without the cause which determined the informational (semantic) content of the original semantic structure. In short, a cognitive structure is a semantic

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structure whose content is determined by a selective causation but whose tokens can be generated in the absence of this cause. It is clear that this feature of generatability in the absence of its denoted content is the feature that words as linguistic categories universally have. We can produce "horse" in the absence of a horse. Does Dretske successfully construct the concept of cognitive structure with this seemingly non-natural feature out of natural categories?

To see the answer, we have to think about the relationship between type and its token or universal and its instantiation. There are no tokens as such or instantiations as such any more than there are fathers as such. As all fathers are fathers of certain children, all tokens are tokens of certain types and all instantiations are instantiations of certain universals. A token is a token of a certain type not by accident or by our arbitrary decision , but because it has certain properties that constitute its type. If you don't hate Aristotelian jargon, it is a token of its type because it has the essential or constitutive properties that constitute its type. According to Dretske's description, his cognitive structure is a kind of semantic structure, and one property that constitute a cognitive structure is to react selectively to the external actions in a certain way. Thus, a token of a cognitive structure, insofar as the former is the token of

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the latter, has that property. However, the extra thing Dretske tries to put into the concept of cognitive structure is that its tokens are sometimes generated without that cause, however selective one that may be. If a token is thus generated, it is not a token of a cognitive structure any more whose semantic content is defined only by means of selective causation. On the other hand, if it is a token of a certain cognitive structure and has the semantic content of its type, this token has that semantic content only if it has the selective causal sensitivity. Otherwise, if we are given an instance of structure, how can we identify this token? how can we identify what type of cognitive structure it is a token of? In a word, Dretske describes under the name of cognitive structure something impossible. Let's see this impossibility in an example.

Suppose the whole universe is the system that develops in the duration L of Dretske's passage. It is not before some time has passed that the molecular structure of water is first generated. Thus, we can consider this generation of water as the universe's digitalization of the information that the temperature is below water's freezing point. Namely, through the generation of water molecules, the universe gained a new way to digitally encode this piece of information (i.e. that the temperature is below water's freezing point), and we can call water a semantic

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structure in the authentic Dretskean sense. A token of water can carry information that the temperature is below water-freezing point by becoming ice. So far so good.

Suppose that a cognitive structure called 'super-water' has developed out of water. This means that each token of super-water can carry semantic content that the temperature is below water's freezing point in a digitalized form, but a token of super water with this semantic content can also be generated under the temperatures above the freezing point. In other words, tokens of super water can mean that the temperature is below the freezing point.

Now the question we have to ask is this. Suppose that we actually have a token of super-water that means that the temperature is below the freezing point when the temperature is actually above zero. What molecular structure does this token of super-water have? On the one hand, if it takes the form of "ice" under this temperature, it is not a token of water, but has to belong some new kind of substance. This means that the semantic content it carries is not that the temperature is below water's freezing point, but that the temperature is below this new substance's freezing point. On the other hand, if this token takes the form of liquid, it can carry information that the temperature is above water's freezing point by being water, but it now loses semantic relation with the

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content that the temperature is below water's freezing point. This token can carry information or have a semantic content, but cannot mean anything, since it has to be water and non-water at the same time to mean something.

We cannot find any way out by making the case more and more complex, since the essential point is that we cannot sever a token of a type which has a certain semantic content because of its nature from the chain of the laws of Nature. Of course, if we define the content of a type (e.g. the word "horse") through non-causal code, tokens are free from the causal connection with what they mean, but we already here cross the line which all naturalists vow that they will never cross.

In short, Dretske's attempt at naturalization is one of the most profound ones and gives us an excellent occasion to deepen our understanding of the relationship between nature and knowledge. Nevertheless, we have to conclude that his attempt fails at the exact same point where Fodor fails. That is the error problem. Dretske's analysis shows us that this problem is by no means a technical difficulty that naturalism can solve when the natural sciences have developed enough. It is deeply rooted in the nature of knowledge and its relationship with Nature. If a naturalist says that he postpones this problem for a while, we have good reason to suspect that he doesn't understand

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the nature of the problem. For if we postpone this problem, there is nothing, almost nothing, to discuss about the relationship between Nature and knowledge.

3.3.8. Conclusion.

Naturalistic epistemology can be as bold and exciting an intellectual enterprise as Hobbes' theory of the origin of the state, if it is seriously pursued. The central question of this enterprise is what facts in Nature make it true that a person knows something. Real naturalistic epistemology should take this question with the seriousness of Hobbes.

However, any type of naturalism is always subject to a strong seduction that might undermine the whole project of naturalization. That is the seduction to make use of things that the very concept of naturalism excludes from the realm Nature by the very concept of naturalism. For example, Hobbes uses such concepts as "promise", "agreement", "covenant", and "contract" at the crucial point in the transition from the state of nature to civil society, but there is a good reason to suspect that such things can exist only in the realm of civil society, but not in the state of nature. If this suspicion is correct,

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we have to say that Hobbes' use of these concepts undermines his project of naturalization since what he uses in naturalization doesn't belong to Nature at all. For naturalistic epistemology, the concepts of "meaning", "information", and "code" are what seduce the naturalist. When a naturalist tries to naturalize knowledge, he is always tempted to assume that these entities belong to Nature. On the other hand, when a naturalist tries to naturalize "meaning", he is seduced to think that he can assume that knowledge itself belongs to Nature. However, of course, such assumptions would be valid only if these two projects of naturalization (i.e. naturalization of knowledge and naturalization of meaning) are conducted independently, namely only when naturalization is undertaken without these assumptions. A naturalist cannot naturalize "knowledge" by presupposing that meaning is a natural entity nor can he naturalize "meaning" by presupposing that knowledge is a natural state. If naturalism is to be correct, there would have to emerge some sort of heroic naturalist who either naturalizes knowledge without assuming that meaning belongs to Nature, or naturalizes meaning without assuming that knowledge belongs to Nature. And for there to emerge such a hero, all naturalists have to be brave enough to attempt this formidable enterprise, i.e. attempt to be heroic. Are we really observing such an age of naturalistic heroes? Are

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our naturalists really such brave intellectual soldiers or just cowards who avoid the most difficult and essential problem only through self-deception? We have to remember that even that great Hobbes fails to be such a hero though he definitely tried to be one.

Our examination indicates that contemporary naturalistic epistemology undermines its own project by surrendering to this seduction, of course, without being aware of the surrender. All naturalists we have examined at one place or another betray the spirit of naturalism by smuggling in the exact thing whose existence they deny, in effect, by begging the question. We deeply suspect that this is not because of any particular limitation of current naturalists in this field, but because of the specific nature of naturalism directed to "knowledge" and "meaning".

If knowledge itself is naturalizable, this question may be given a full answer in the future as the result of the progress of science. If, however, it isn't, naturalistic epistemologists are doomed to be poor caricatures of Galileo because of the very nature of knowledge, and naturalistic epistemology itself will remain a problem forever. In such a case, naturalistic epistemologists have little opportunity to investigate knowledge itself; they always have to discuss the possibility of their own activity. Our examination of the internal structure of naturalistic epistemology strongly

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suggests that the latter is the case.

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PHILOSOPHICAL FOUNDATIONS

FOR

A HUMANISTIC ONTOLOGY OF LANGUAGE

by

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CHAPTER 4 LANGUAGE AND KNOWLEDGE OF LANGUAGE

4.1. Our Atheoretical Knowledge and Its Origin

In the second chapter we established a minimum plausibility for the view that our knowing something consists not in our assertions being grounded, but in our coming to achieve recognition as the actualization of our fundamental ability of knowing. From this point of view, our theoretical knowledge's being grounded is a result of a special way by which we have achieved this activity of recognition, and our atheoretical knowledge's being ungrounded is a reflection of another way by which we have achieved this recognition. The purpose of this section is to explicate fundamental features of atheoretical knowledge to facilitate our later discussion of knowledge of language.

4.1.1. Critical Attitude and Theoreticality of Knowledge

The groundedness of our theoretical knowledge is, as has been shown at 2.4.4., is the result or reflection of the fact that we acquire this type of knowledge by going

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through the four stages of epistemic justification. The most important element in this process is the formation and the resolution of a critical attitude. We acquire theoretical knowledge only when we resolve our critical attitude towards a particular supposition that we have made about an unknown aspect of a known object. This process of resolution of the critical attitude, by its nature, is always consciously experienced by us through explicit grounding processes such as reasoning, proving, experimenting, and so on. It is this explicitness of the grounding process (epistemic justification) that makes it possible for us to give reasons why what we know is true.

Ungroundedness of atheoretical knowledge, on the other hand, consists in the lack of such a conscious process in our achieving the recognition. It doesn't mean that the process by which we achieve a recognition that is a manifestation of atheoretical knowledge is unconscious or unnoticed by us, but it means that we don't take any critical attitude to the content of our knowledge in such a case and, therefore, don't experience any conscious process of the resolution of the critical attitude. When we unmistakably recognize an utterance as an instance of our own language, for example, in a foreign country where we don't expect any speakers of our language, we don't achieve this recognition by first forming a supposition that this is an example of our language and afterwards checking this

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supposition by matching the utterance with a certain standard or criterion that specifies what constitutes our language. We don't experience the formation and the resolution of the critical attitude in such a case because we already know that our judgment is correct. Our recognition in such a case may be called immediate not because we grasp an object (a utterance) directly, which can hardly make sense since there are always various kinds of mediation between the object and us, but because our achievement of recognition contains no formation and resolution of the critical attitude. This is why we cannot give any significant reason or ground for why our judgment is correct. If, on the other hand, we recognize an utterance as an instance of a particular foreign language by comparing the utterance with a grammar book of that language, it is a manifestation of theoretical knowledge which is a result of our own reasoning and linguists' theoretical knowledge about that language represented in that grammar book. We can observe the same contrast in the cases of knowledge of laws in our sense. When we recognize that the law of non-contradiction is universally valid, our recognition is immediate in that the achievement of this recognition doesn't contain any critical attitude and its resolution. We cannot ground our judgment in such a case though we know that it is correct. Our knowledge of our own language or of basic laws of logic is atheoretical

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because the actual recognitions as the manifestation of our knowledge of these categories and laws are immediate in that special sense.

4.1.2. Uncriticality of the Learning Process of Atheoretical Knowledge

This immediacy of recognition as manifestation of knowledge in these cases has its origin in the nature of the process through which we originally learn or acquire knowledge of these categories or laws. Think about the case of the category of "sentence-of-English". If a linguist constructs a grammar of English that specifies this category, he/she constructs it as a grammatical theory. This grammar becomes a representation of knowledge about English only through the process of critically checking it against actual uses of English or immediate judgments of speakers of English. This process contains the formation and resolution of the linguist's critical attitude towards his/her own theory. If the grammar is established through such a critical process, what the linguist acquires is theoretical knowledge of the category of "sentence-of-English". When the linguist judges that a particular utterance is an instance of English by applying this grammar, he/she can justify his/her judgment by referring

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to the grammar, and can justify the grammar by going back to the process by which the grammar was established though this chain of justification has to ultimately be based on ungrounded judgments of the speakers of English. The process by which we learn or acquire theoretical knowledge is critical in the sense that we consciously experience the formation and the resolution of the critical attitude towards what we know in this process.

On the other hand, we can quite certainly say that the process by which a native speaker acquires this category of "sentence-of-English", which is same as the process of coming to be a speaker of English, is not critical in that sense although still very little is known about this process. Of course, it doesn't mean that children don't have any conscious experience about their languages in the process of acquisition. All of us no doubt have such experiences whether we remember them or not. The crucial point is that children don't seem to experience the formation and the resolution of the critical attitude that results in theory about what constitutes the category of "sentence-of-English". The process of language acquisition seems to be uncritical in that it doesn't contain the process of the formation and the resolution of the critical attitude.

In general, the process by means of which we acquire atheoretical knowledge of categories and laws is

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uncritical, and it is because of this uncriticality that we don't have any original experience to which we can refer in order to ground our judgments. Since this is the most crucial point in the characterization of atheoretical knowledge, let's take a closer look at this problem of the origin of atheoretical knowledge.

4.1.3. Primitive Atheoretical Categories and First Language Acquisition

There are two reasons we believe that acquisition of first language is uncritical. One is specific for the process of this first language acquisition, and the other is generally applicable to the acquisition of all types of atheoretical knowledge, e.g. atheoretical knowledge of the category of chess-game.

It is by no means the case that any entity in the world can go through this critical process (epistemic justification). Only those entities that have the capacity (in the sense of entelecheia) of those activities that are necessary for the formation and the resolution of the critical attitude can go through this process. These activities include recognizing the truth of something, making a supposition, questioning the reason, doubting the truth of an assertion,

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taking something as evidence for an assertion, and recognizing logical connection among assertions. The common feature of these activities is that they are cognitive activities in the sense that they take contents or propositions as their objects. This feature is not only common among them, but also essential for them since these activities can establish the truth of a theory which always has a propositional content only by this cognitive feature. Moreover, we (adults) can explicitly perform these activities only through language since we have no other way to explicitly express the propositional content of a theory than using language. Thus, we can say that the critical activities are essentially linguistic activities, and they can be performed only as speech acts. Now, that children learn or acquire language means that they still don't have the capacity (in the sense of entelecheia) of using language or performing speech acts. Therefore, an obvious question we have to raise against the idea that children go through critical activities such as formation of a theory in the process of language acquisition is how an entity that cannot use langauge can perform these cognitive activities. We cannot assume that children who are learning a language are little scientists who observe linguistic events surrounding them and construct a theory about the grammar of that language. If they have to learn their first language, they seem to acquire the capacity of

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these critical activities in that same process.

There seem to be only two possible replies to this reasoning against the idea that first language acquisition is a theoretical process. One says that children potentially or tacitly perform these cognitive activities when they learn their first language, and the other says that children already know their full-fledged real first language (Ur-language) when they start learning what we usually call 'first language'.[1]

To the first reply, we have to ask the meaning of 'potentially' or 'tacitly'. If this means that these activities are potential in the sense that children have the potentiality (in our sense of State I in 2.3.3) to acquire the capacity of these activities, which is true, it is like saying that a person who has never learned to play the violin potentially performs Mendelssohn's violin concerto. We have to say that this is nothing but an abuse of dynamic concepts such as 'potentiality' or 'actuality'. If, on the other hand, this means that these activities are potential in the sense that they can be made conscious whenever the agent wants, it doesn't seem to be correct; children don't seem to be able to do this. Of course, it is possible to assume that children actualize these cognitive activities without reporting the experience of

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1. This strong view about the innateness of language is taken by J.A.Fodor. See J.A.Fodor 1975, p.82.

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these activities to us. This means that children already know their full-fledged Ur-language when they start learning their so-called first language, and thus, this amounts to the second reply mentioned above.

The apparent difficulty of the second view that children learn their so-called first language by using their Ur-language for the cognitive activities is that children don't tell us (adults) about their experience of these cognitive activities when they come to speak a common langauge with adults. It is like the situation of, e.g. a Japanese native speaker who has learned English by using Japanese for performing cognitive activities that are necessary for second language acquisition but cannot tell us anything about his/her past experience of Japanese in English. We have to say that a theory that has to assume such a total and quick amnesia for children is too ad-hoc unless this assumption has other independent motivation, e.g. an indication that they actually possess Ur-language.

The only solution to this problem is to assume that knowing language, speaking or using language, and performing cognitive activities, have nothing to do with consciousness, and rather consists in possessing certain physical states or structures of one's body (presumably one's brain). However, we already know that such an externalistic view of knowledge has to face the code problem since it requires a full-fledged brain (or body)

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symbol system that can express any propositional content that has to be expressed in the sciences as well as in children's theory formation about the world surrounding them (see 3.3.5.).

Therefore, we have to conclude that the process of acquiring the first language is atheoretical, and that our knowledge of those categories or laws that have to be learned together in this process of first language acquisition is atheoretical, since the process of learning them cannot be critical.

These categories and laws are the categories or laws without knowledge of which it is impossible to acquire the ability to speak. Let's call these categories or laws primitive atheoretical categories and our knowledge of them primitive atheoretical knowledge. Primitive atheoretical knowledge is our first knowledge, and its acquisition and the acquisition of first language is actually a single process of becoming a linguistic subject; to know one, we have to know the other. Any theoretical activity and acquisition of theoretical knowledge is possible only on the basis of this primitive theoretical knowledge. Primitive atheoretical categories presumably include such abstract and fundamental categories as "object", "action", "spatial relations", "temporal relations", and "quantity", and laws that express their basic nature. These categories that come to be known first to us also seem to be most

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fundamental in a science of meaning.[2] Thus, linguistic semantics as the science of meaning no doubt seems to be able to benefit by paying serious attention to the study of language acquisition.

4.1.4. The Origin of the Atheoreticality of Atheoretical Knowledge.

Let's discuss the second reason of the atheoreticality of first language that is common for all types of atheoretical knowledge. What makes the process of acquiring theoretical knowledge <u>critical</u> is the fact that we are <u>actually</u> engaged

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2. Traditional philosophical theories of category such as Aristotle's or Kant's can be interpreted as theories of these original atheoretical categories. The concept of "theta-role" that plays an important role in the current theoretical framework of generative grammar (Government and Binding theory) seems to be deeply related to our original atheoretical categories. In a word, a theta-role (thematic role or semantic role) is an abstract semantic relation that a constituent noun phrase in a sentence has with the predicate verb of the sentence. For example, in the following sentence in which noun phrases are unified by the verb "open" that designates an action, "John", "the door", and "this key", have the roles of "the agent of the action", "the object of the action", and "the instrument" respectively:

John opened the door by this key.

For the early treatments of this concept in generative grammar, see Gruber 1965, Fillmore 1968, and Jackendoff 1972 (chapter 2). For the details about how this concept is used in the current G.B. theory, see 5.1.4. and 5.2.2.

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in the cognitive and critical activities such as supposing, questioning, or reasoning. In other words, our attention in that process is cast on the objects as the objects of cognitive activities; we take a theoretical attitude towards these objects in this sense. When our theoretical knowledge is manifested in a particular judgment, we often take the same theoretical attitude by being consciously engaged in the cognitive activity of judging. For example, when we recognize a sentence as a sentence of English by comparing it with rules or examples in a grammar book, we have this sentence as the object of cognitive activity.

On the other hand, when our atheoretical knowledge manifests itself or is in operation, we are often engaged in a non-cognitive activity such as eating or drinking that cannot take any propositional content as its object, and even when we are engaged in a cognitive activity, we often don't take the object of atheoretical knowledge as the object of our focal consciousness. In other words, the most common way for our atheoretical knowledge to manifest itself or to operate is to do so in our background consciousness where it is always ready to be called into focal consciousness while we are engaged in other activities (very often non-cognitive ones) rather than as the explicit recognition of a certain fact as an actualization of this atheoretical knowledge. For example, when we drink a glass of water at dinner, we are very

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likely to be engaged in other activities than recognizing it as water in our focal consciousness unless we are not sure what that liquid is before drinking it; these activities may be chatting with our friends, just having a dinner , or recollecting what happened during the day. Nevertheless, as we have repeatedly remarked in chapter 2, it doesn't necessarily mean that we are not aware of what this liquid is; we know what it is in our background consciousness in that we can put a potential judgment into the focal consciousness without making a judgement anew. In this case, we know what we drink without taking a theoretical attitude towards this object since we have atheoretical knowledge of the category "water", and we don't take this object as the object of focal consciousness because we have other things as the objects of our focal consciousness or because we take this liquid as the object of non-cognitive activity of drinking and tasting. Let's take another example, that of our knowledge of language. When we speak, we are not engaged in the cognitive activity of judging the grammaticality or correctness of other people's utterance. We are engaging in the activity of speaking, understanding what the speaker says, thinking about the topic of conversation, thinking what we are going to say next, guessing the real intention of the speaker, thinking about how to terminate the conversation and so on, and our attention is focused on the topic of conversation,

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new information brought about by an utterance, or the facial expressions of the speaker. But this, of course, doesn't mean our knowledge of atheoretical categories such as "sentence-of-English", "sound-pattern-of-English", "words-of-English" doesn't work and we don't know whether the utterances of other people belong to these categories or not insofar as we know and speak English; we know that they do or they don't all the time during our conversation, just as we know what we drink when we drink wine and talk with our friends about football. If the speaker makes a slip of the tongue, our attention may be temporarily drawn to a particular word, and a potential judgment about the word-hood of this utterance is immediately actualized; or if a new speaker with an accent joins the conversation, our phonological judgment is immediately actualized in the recognition that the speaker has an accent. That these judgments are always potentially made is seen from the fact that we always are aware of the accent of the speaker in our background consciousness even when our attention is cast on the topic of the speech without being disturbed by the accent of the speaker. Our consciousness of foreign or local accents is the manifestation of our atheoretical knowledge of the phonology of our own language.[3]

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3. This atheoretical knowledge of phonology has to be distinguished from our "musical" and non-linguistic recognition of "how a foreign language sounds". We often have the latter type of "knowledge" about a langauge we don't know, and comedians exploit this type of "knowledge"

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The point of these examples is that our atheoretical knowledge of these categories can manifest itself and we can know the correctness of particular judgments about certain objects' belonging to them without taking these objects as the objects of cognitive activities. Since grounding or justification has its source in our critical and cognitive activities that take the object of judgments as the object of focal consciousness, we usually cannot ground these judgments even when they are actualized by being called to the focal consciousness since we know the correctness of these judgments while we are doing something else and our attention is directed to this other activity. Our knowledge in such cases is ungrounded.

From another point of view, we can say that the working of our atheoretical knowledge is usually done in background consciousness by being combined with other focal activities, some of which are even not cognitive activities, and we don't take a theoretical attitude towards the objects of judgments that are the manifestation of atheoretical knowledge. In this respect, the way our atheoretical knowledge works is similar to the way our

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when they mimic a foreign language. That this "knowledge" doesn't constitute atheoretical knowledge of phonology of foreign languages is seen from the fact that in such cases we cannot distinguish sound-sequences that sound like e.g. German to foreigners but doesn't sound as "real" German to native speakers of German from ordinary utterances of German. When we learn spoken German, we acquire different type of knowledge, namely atheoretical knowledge of German phonology.

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skills work; both of them are usually not focalized when they work normally. However, the crucial difference between them is that atheoretical knowledge has cognitive content that can be actualized while skills don't. We know something without taking a theoretical attitude to it; this is the essence of atheoretical knowledge.

This atheoreticality of these particular manifestations of atheoretical knowledge no doubt has its origin in the way the corresponding categories or laws come to be known by us. Though we cannot say much about the details of how we acquire atheoretical knowledge of them, and there is a great variety in the ways we learn them from one category to another, we can say that we do not learn them by taking them as the objects of a theoretical attitude. In other words, we learn them as the objects of atheoretical knowledge through activities other than cognitive activities directed to these categories and laws, while we have to be engaged in these cognitive activities if we are to learn them as the objects of theoretical knowledge. Think about the case of the category "sentence-of-English. If we are to learn the category of "sentence-of-English" as an object of theoretical knowledge, we have to keep this category itself as the focal object of our cognitive activities and, for example, we have to ask the question, "What constitutes sentence-hood in English?", to ourselves first. However, the resultant knowledge of such

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a process is only theoretical, and it means that we cannot learn English through such a process since we have to know this category of "sentence-of-English", among others, as an object of atheoretical knowledge in order to speak English. To speak English means, among others, to know whether an utterance belongs to English without taking the utterance as the object of cognitive activity for certain basic cases. To learn English we have to disengage ourselves from the cognitive activities directed to English itself and be engaged in another important activity, namely the activity of speaking English itself, though we have to start it in an incomplete form. Moreover, an activity of speaking English is always another activity at the same time such as asserting, asking, ordering, joking, or singing. To learn English we have to be engaged in these activities in speaking English, and such a process makes the resultant knowledge atheoretical.

Of course, the cognitive activities directed to such categories as "sentence-of-English" or "sound-pattern-of-English" are sometimes performed by speakers of English. However, what makes our learning of something as atheoretical knowledge is the fact that other activities than the cognitive activities directed to that object <u>have to</u> be performed in the process of learning. To learn what water is as an object of atheoretical knowledge, we have to take this liquid as the object of non-cognitive activities

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such as drinking, washing something with it, or bathing in it. These activities are necessary for the acquisition of atheoretical knowledge since what marks the completion of our atheoretical knowledge is not the resolution of the critical attitude towards a supposition about the object, but the capacity of letting our knowledge work in the background consciousness while we are engaged in other activities than the cognitive activities directed to the object of our knowledge. We may characterize this feature of atheoretical knowledge by saying that we learn it only through experiences. Thus, our having theoretical knowledge of a certain object doesn't imply our having atheoretical knowledge of the same object any more than the latter implies the former.

These two modes of knowledge, thus, have completely different processes of coming into being, and this difference is the origin of their manifest difference, namely one's groundedness and the other's ungroundedness.

4.2. Our Knowledge of Language as Primitive Normative Knowledge

We have atheoretical knowledge about many things, e.g.

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water, wine and, language, but, as mentioned in 1.4., our atheoretical knowledge of such entities as language or game has a special character of the inseparability of the object's existence and its' being known by human beings, and is called normative knowledge because of this character. This normative knowledge is further classified into primitive normative knowledge and rule-constituted normative knowledge. Our knowledge of language is distinguished from our knowledge of games by the fact that the former is an instance of primitive normative knowledge while our knowledge of the latter is rule-constituted normative knowledge. To characterize our knowledge of language as primitive normative knowledge is the purpose of this section. We have to start with clearly establishing the concepts of normative entity, normativity and normative knowledge which we left in their sketchy stage in chapter 1.

4.2.1. The Proper Activity of a Normative Entity

In the essential characterization of the normativity of our knowledge of an object X (e.g. language), there are involved three fundamental concepts mentioned in the first chapter. They are: our atheoretical knowledge of X, the

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proper activity of X, and the natives of X.[4] If our knowledge of an object is normative, that object is called a normative entity. We can characterize our knowledge of a normative entity X (normative knowledge) and the nature of normative entity X only through the concepts of the proper activity of X and the natives of X. Among the two latter concepts, that of the proper activity is the fundamental one since it is only through this concept that we can characterize the natives of a normative entity, and it is only through the concept of native's knowledge that we can characterize any normative entity. The way we present these concepts here might sound unnecessary complicated, but we think that this is the only way to capture the special nature of our knowledge of such entities as language or game at the most essential point.

The first and essential characteristic of a normative entity is that it has the proper activity in the sense specified below. The proper activity of an normative entity is a special type of activity that is essential both for the acquisition and the possession of atheoretical

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[4]. The term "natives of X" here may sound awkward since it reminds us such expressions as "natives of Paris". However, we need the term "native" to express a special mode of knowledge that is more specific than "atheoretical knowledge" in general to characterize our knowledge of language. We use this term as our "technical term". At this stage of discussion, "a native of X" should be understood as a person who has a special cognitive relationship with X that can be typically but not exclusively observed between a person and his "mother tongue".

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knowledge of that entity. In this respect, normative knowledge is distinguished from atheoretical knowledge in general since the objects of our atheoretical knowledge in general don't necessarily have the proper activity in this sense. Thus, the proper activity is a fundamental factor that characterizes a normative entity since an normative entity can be characterized only through our atheoretical knowledge of it.

Let us clarify the concept of the proper activity of a normative entity by using language as an example. The proper activity of language is the activity of speaking in the sense that includes both the activities of producing utterances and of understanding them.[5] However, there is

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5. The idea that the nature of language is deeply rooted in the activity of speaking is by no means new. A powerful and profound expression of this idea is found throughout Humboldt 1836. The following passage gives us a glimpse of his thought:

> Language, regarded in its real nature, is an enduring thing, and at every moment a transitory one. Even its maintenance by writing is always just an incomplete, mummy-like preservation, only needed again in attempting thereby to picture the living utterance. In itself it is no product (Ergon), but an activity (Energeia). Its true definition can therefore only be a genetic one. For it is the ever-repeated mental labor of making the articulated sound capable of expressing thought. In a direct and strict sense, this is the definition of speech on any occasion; in its true and essential meaning, however, we can also regard, as it were, only the totality of this speaking as the language. For in the scattered chaos of words and rules that we are, indeed, accustomed to call a language, there is present only the particular brought forth by this speaking, and this never completely, and first calling for new

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no language as such any more than we are engaged in the activity of speaking as such. We know only particular languages such as English, French, Chinese, or Japanese, and when we speak, we speak these particular languages. When we talk about language as a normative entity, we primarily mean these particular natural languages; these particular languages are different normative entities. Therefore, speaking as the proper activity is nothing but the generic term for such particular activities as speaking English, speaking French, speaking Chinese, or speaking Japanese. When we think about the nature of normative entity in general and that of the proper activity of a normative entity in general, we first have to think of these particular entities and activities. Now, take English as an example of a normative entity.

There are many activities related to English that we can be engaged in such as speaking English, learning

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> work, so as to detect from it the nature of living speech and to provide a true image of the living language. (Humboldt 1836, English translation p.49; the underlines are of the original author.)

By the way, Chomsky mentions this passage in Cartesian Linguistics (Chomsky 1966, p.19), and he assimilates his concept of "generation" with Humboldt's ("Erzeugung) (ibid. p.19, Chomsky 1965, p.9). However, it is clear that this assimilation doesn't do justice to Humboldt's philosophy of language since Humboldt's concept of activity or generation means a concrete activity of individual speakers while Chomsky's concept of generation, at least as of 1965, is purely a formal one as he explicitly remarks (Chomsky 1965, p.9). See 5.1.2.3. for Chomsky's concept of "generation".

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English, teaching English, or studying English, but we call, among them, the activity of English-speaking the proper activity of English because of a special relationship between English and this activity. Similarly we can be engaged in many activities related to water, but unlike the case of English we don't call any of them the proper activity of water since there are no activities related to water that have the special relationship we observe between English and English-speaking. This difference between English and water makes the former an example of normative entity and the latter that of non-normative entities. These two cases are different in the following way.

As we remarked in the previous section, one characteristic of atheoretical knowledge of X in general is that it is combined with activities other than the cognitive activity directed to X both in our acquisition of it and in its manifestation. In the case of our atheoretical knowledge of water, which is a typical example of non-normative atheoretical knowledge, they include such diverse activities as drinking-water, washing-hands-with-water, and swimming-in-water; we learn what water is through these activities and our atheoretical knowledge of the category of water most clearly manifests itself in these activities. However, we cannot select any single activity from among them such that without it we cannot

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acquire our atheoretical knowledge of water and this knowledge is most clearly manifested in it. For example, children or babies don't have to drink water to learn what water is, though drinking water is one of the most important relationships between human beings and water. As a matter of fact, it is often at a later stage in a child's life that he/she drinks water instead of milk. Our first relationship with water is not "drinking", but one mediated by such activities as washing-face-with-water or bathing-in-water. We can learn what water is by washing our hands with it or swimming in it, just as we learn what soil is not by eating it but by walking on it, touching it, digging it, and so on. We are engaged in many activities related to water in our life, and there is no single activity that characterizes our relationship with and our atheoretical knowledge of water. In this sense, there is no proper activity related to water; which activity is most important greatly depends on the particular life-style and interest of an individual, though drinking water is no doubt the most important one in many cases. Water has no fixed place in the totality of the activities of our life determined by its nature. This is one manifestation of the fact that water is not a normative entity.

The situation is quite different in the case of language. It is true that with respect to the formal feature of being atheoretical knowledge of a category, our

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knowledge of English and our knowledge of water show no difference: we have to tell whether a given specimen belongs to the category or not for the basic cases, in order to be qualified as the possessor of this type of knowledge. However, our atheoretical knowledge of English has a special connection with the activity of English-speaking that non of our activities related to water possesses. Not only do we have to be able to speak English to have atheoretical knowledge of English, but also we have to speak English to acquire this knowledge. Moreover, a native speaker's knowledge of English manifests itself in the clearest way when he/she speaks English. A speaker may find it difficult to judge whether a sentence in an abstract form is a grammatical English sentence or not, but he/she can make a more accurate judgment when the same expression is actually used when he/she is speaking English. Both in the process of acquisition and in the manifestation, the activity of English-speaking has such special relation with our knowledge of English. Thus, the speakers of English are related to the entity called English in a special way, and this special relationship is characterized by the activity of English-speaking.

In general, we have a special relationship with a normative entity that is expressed by its proper activity. For example, we have a special relationship with an entity called 'chess', and this relationship is expressed by the

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activity of chess-playing as the proper activity of chess. In this respect, normative entities are distinguished from non-normative entities such as water. Because of this special relationship characterized by the proper activity, every normative entity has a unique significance to us, namely has a special place in the totality of the activities of our life determined by its nature, and becomes a meaningful object to us in itself while there is no single meaning of a natural object in itself such as water.

4.2.2. Normative Entities and Tools

At this point of the discussion, it is very important to distinguish these normative entities from tools as artifacts constructed for particular purposes since their superficial similarity might mislead us so that we lose the grip of the notion of normativity.

They are similar in that both normative entities and tools have a special relationship with us while natural objects such as water don't have such special relationship. Water as such has no special single relationship with us, and water is water however we are related with it. On the other hand, a knife is a knife only insofar as we can cut something with it, and English is English only insofar as

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it is spoken by a particular group of people. Thus, normative entities and tools have a specific relationship with the way we exist and live as human beings, and thus, are structurally incorporated in our human world; they are meaningful objects in themselves while the meaning of natural objects depends on an individual's profession and life-style (e.g. the meaning of water for a fisherman is different from the meaning of water for a cook).

However, normative entities and tools are distinguished from each other by the fact that our special relationship with normative entities is characterized by their proper activities while the one with tools is characterized by their proper functions. Proper activity and proper function are distinguished in that a proper activity itself is an energeia-process in performing which we can complete various other kinesis-processes[6] while a proper function of a tool is definable only by referring to a certain kinesis-process with a special goal. In short, the concept of proper activity is not connected with any single particular goal while the concept of proper function is definable only through a single particular goal.

For example, the proper function of a saw can be definable only by referring to the act of cutting something whose goal is to have cut that object. The act of cutting

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[6]. For the rigid distinction of energeia and kinesis, see 2.3.3.

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is a kinesis-process since while we are cutting a tree down, we haven't cut it down yet. The meaning and the value of a saw cannot be separated from this goal. In this sense, we can say that each tool has its proper function. On the other hand, normative entities such as languages and games have no proper functions in this sense since their proper activities in which we are related with them are energeia-processes, which have no goals external to them. When we speak English, we always have already spoken English, and when we play tennis we always have already played tennis. However, it doesn't mean that languages or games have no connection with the concept of goal or utility, or that the purpose of our performing their proper activities is this performance itself. We are rather engaged in many purposeful actions or 'businesses' in the performance of the proper activity of a normative entity, but what distinguishes a normative entity from a tool is that there is no unique kinesis-process or goal attached to a normative entity and the proper activity is not a 'business' in that it has no goal attached to it. For example, when we speak English, we are always engaged in an other action that is achieved in speaking English such as asserting, informing, questioning, warning, answering, joking, giving a speech, and so on. They are what J.L.Austin calls illocutionary acts while he calls the act

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of speaking a locutionary act.[7] Furthermore, each illocutionary act constitutes a part of larger kinesis-process which Austin calls a perlocutionary act since we perform it by speaking. In Austinian terms, therefore, what distinguishes a langauge from a tool is that there is no single illocutionary or perlocutionary act or 'business' specific to language that we can call the proper function of language. Proper activity of a language, i.e. speaking, is not a functional act, and language is not a functional entity; it has no 'business' of its own.[8] When I ask you

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7. Austin 1962, pp.94. 98-99.

8. This anti-functional view of langauge that language itself or linguistic expression abstracted from the context has no proper function is very explicitly held by E. Sapir.

> The candle-blowing sound is a physical by-product of a directly functional act, the extinguishing of the candle by means of a peculiar method of producing a current of air. So far as norman human interest is concerned, this sound serves merely as a sign of the blowing our, or attempted blowing out, itself. We can abbreviated our record of the facts a little and say that the production of the candle-blowing sound is a directly functional act. On the other hand, the articulation of the wh-sound in such a word as when has no direct functional value; it is merely a link in the construction of a symbol, the articulated or perceived word when, which in turn assumes a function, symbolic at that, only when it is experienced in certain linguistic contexts, such as the saying or hearing of a sentence like when are you coming? In brief, the candle-blowing wh means business; the speech sound wh is stored-up play which can eventually fall in line in a game that merely refers to business. (Sapir 1925, p.38.)

A similar idea that a statement has no proper function or

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your name by saying "What's your name?", my purpose is not speaking English unless I am learning English, and if I am learning English, that means that I still don't have knowledge of English and the present discussion doesn't apply to such cases. When we speak, we do various things other than speaking; language has no single proper function since it is used for many different purposes.

The situation is the same for games. Playing tennis itself is an energeia-process that is not a process with a goal to be completed by doing its constituent parts. We rather perform such various acts as serving a game or winning a game in playing tennis, and we achieve such goals as amusing ourselves, amusing the audience, or making money by playing tennis.

Metaphorically speaking, we can say that playing tennis is the locutionary act of tennis, and these acts constituted as such by the rules of tennis are illocutionary acts of tennis, and the social functions of tennis are perlocutionary acts of tennis. We perform the second in the course of playing tennis, and we perform the third by means of playing tennis. Such an expansion of

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that it has many different functions is the original thought from which Austin developed his theory of speech act. The interesting thing is that Austin also uses the term 'business' to designate a function. For example, he says, "It was for too long the assumption of philosophers that the business of a 'statement' can only be to 'describe' some state of affairs..." (Austin 1962, p.1) Chomsky also holds a similar anti-functional view of language. See Chomsky 1980, pp.229-230.

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Austinian concepts is possible to all normative entities because they have the proper activity of their own. Thus we can conceive a general theory of actions related to normative entities one of whose applications is Austin's theory of the speech act. This doesn't mean that we devaluate Austin's work; it rather means that we think that it is Austin who 'discovered' and extracted the essential structure of the actions and activity related to normative entities.

4.2.3. Normative Knowledge as Native Knowledge.

By using the concept of proper activity thus defined, we can now characterize normative knowledge as natives' knowledge with the mediation of the concept of natives of a normative entity in the following way.

If the proper activity of a normative entity X (e.g. English language) is Y-ing (English-speaking), natives of X can be defined as Y-ers (English-speakers), i.e. those people who have acquired the full-fledged ability (entelecheia)[9] of doing X (English-speaking) whenever they

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9. The terms "ability" and "capacity" very often connote potentiality in the sense of dynamis or skills. In the present context, what we mean by "ability" is neither of them. It is a cognitive entelecheia. When we characterize knowledge with respect to its manifestation such as judgment, we cannot avoid the use of these terms.

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like by learning Y-ing in having been doing Y as an apprentice[10] of X.

This acquired ability of Y-ing (English-speaking) of natives has an ineliminable cognitive element in it and, therefore, cannot be reduced to a complex of various skills each of which has no cognitive element in the sense specified in 2.2.4 though the possession of this ability presupposes the possession of various skills necessary for doing Y (e.g. moving lips and a tongue in certain ways in the case of English-speaking). This cognitive element in

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10. The concept of apprentice or its equivalent is very important for the full understanding of normative knowledge. As shown in 4.1.2.1., we have to learn a normative entity X whose proper activity is Y-ing by actually being engaging in Y-ing since otherwise the resultant knowledge cannot be atheoretical knowledge. However, we cannot be engaged in Y-ing in the full-fledged form while we are still learning X, but we cannot just observe others' Y-ing to learn X; we have to actually do Y to learn Y-ing. Thus, there necessarily exists a special mode of being engaged in Y-ing for the people who are learning X. For example, when we are learning a foreign language, we have to experience a period in which we are actually engaged in the conversation in that language without having the full capacity of speaking that langauge. During this period, we are in an intermediate state between the speaker of that language and people who don't know that language at all. We call this state apprenticeship in the generalized sense of the word. During this period, natives of X, i.e. those whose possess the full-fledged capacity (entelecheia) of Y-ing, recognize the apprenticeship of a learner and take a special attitude to an apprentice similar to that of older children to younger ones who haven't mastered a certain game when the latter learn that game in playing that game with the former.
Apprenticeship and the native's special attitude to apprentices are essential for the possibility of learning any normative entity as we will see below when we analyze the communal character of a proper activity of a normative entity.

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this ability (entelecheia) of Y-ing (English-speaking) basically consists in atheoretical knowledge of those categories that are essential for the identification and differentiation of the performances of Y-ing as 'locutionary act' of X, those of illocutionary acts' performed in Y-ing, and the identification of natives of X themselves.

Let's call these categories normative categories of X. For example, the normative categories of English include such categories as sentence-of-English, sound-of-English, sound-pattern-of-English, proper-expression-of-English-in-a-particular-context, word-of-English, meaningful-expression-in-English, and others related to them. Being a native of English, i.e. having full-fledged ability of English-speaking means to have atheoretical knowledge of these normative categories of English as well as physical skills to produce English sounds acoustically. A person who has the latter without the former may be regarded as an excellent mimicker of English sounds and accent, but not as an English-speaker since he/she cannot really say or understand something in English, in other words, he/she cannot speak English.

To clarify this distinction between cognitive element and no-cognitive element in natives' ability of being engaged in the proper activity of a normative entity X, it is in place to go back to Austin again, who shows a

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remarkably keen sense about this distinction. In the middle of How to Do Things with Words, Austin makes another type of classification of the acts we perform when we say something in the following way:

> We had made three rough distinctions between the phonetic act, the phatic act, and the rhetic act. The phonetic act is merely the act of uttering certain noises. The phatic act is the uttering of certain vocables or words, i.e. noises of certain types, belonging to and as belonging to, a certain vocabulary, conforming to and as conforming to a certain grammar. The rhetic act is the performance of an act of using those vocables with a certain more-or-less definite sense and reference. Thus 'He said "The cat is on the mat"', reports a phatic act, whereas 'He said that the cat was on the mat' reports a rhetic act. ....
>
> To pursue this for its own sake beyond our immediate requirement, I shall mention some general points worth remembering:
>
> (1) Obviously, to perform a phatic [sic] I must perform a phonetic act, or, if you like, in performing one I am performing the other (not, however, that phatic acts are a sub-class of phonetic acts: we defined the phatic acts as the uttering of vocables as [underline is Austin's] belonging to a certain vocabulary): but the converse is not true, for if a monkey makes a noise indistinguishable from 'go' it is still not a phatic act.
>
> (2) Obviously in the definition of the phatic act two things were lumped together: vocabulary and grammar. So we have not assigned a special name to the person who utters, for example, 'cat thoroughly the if' or 'the slithy toves did gyre'. Yet a further point arising is the intonation as well as grammar and vocabulary.
>
> (3) The phatic act, however, like the phonetic, is essentially mimicable, reproducible (including intonation, winks, gestures, &c.). One can mimic not merely the statement in quotation marks 'She has lovely hair', but also the more complex fact that he said it like this: 'She has lovely hair' [Austin's underline] (shrugs).
>
> This is the 'inverted commas' use of 'said' as we get it in novels: every utterance can be just reproduced in inverted commas, or in inverted commas with 'said

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> he' or, more often, 'said she', &c., after it. But the rhetic act is the one we report, in the case of assertions, by saying 'He said that the cat was on the mat', ... This is the so-called 'indirect speech'.
> (Austin 1975, pp.95-96.[11]; the underlines are A.K's unless remarked otherwise.)

We said that there are cognitive elements and non-cognitive elements in the activity of speaking. Now, by using Austin's three terms phonetic act, phatic act, and rhetic act, we can describe this distinction as follows. The phonetic act is a purely non-cognitive act that consists in the production of sounds with special acoustic features since its performance requires no recognition, judgment, or even perception. Insofar as these acoustic properties are actualized in sound waves, a phonetic act is performed, and the capacity of performing this act consists in the complex skills of controlling vocal organs in certain ways. Fundamentally, this capacity is not very much different from the capacity of screaming in a loud voice. The nature of the phatic act is tricky. It might be thought that the phatic act as well as the phonetic act consists in producing sounds with particular acoustic properties. However, what distinguishes phonetic act from phatic act is that the latter is relative to each language while the former is universal. There are no phonetic acts specific to English since as far as sounds with certain acoustic

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11. See also Ibid., pp.92-93.

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features are produced, there is no point of calling this act English or French. On the other hand, what makes an act a phatic act of English is that the produced acoustic objects sound like English and not like French. Thus, we have to mention the recognition or perception of products (not what they are in themselves, but how they sound) to define the phatic act. This means that the ability to perform the phatic act contains some element of recognition of "English-sound-hood" in addition to the ability of controlling our vocal organs. To perform the phatic act of English, we have to know what it is for a sound to sound in "English style". Thus, the phatic act contains some cognitive element in it, but the content of what is recognized is minimum since "English-sound" and "English-sound-pattern" are almost the only categories to be recognized in this act.

However, the capacity of performing the phatic act itself is not sufficient for performing the proper activity of language, i.e. the activity of speaking as Austin remarks. Mimicking a speech in English doesn't constitute speaking English if the mimicker doesn't know what the speech he mimics means or how each expression in the speech can be used on other occasions. To perform the rhetic act and to speak to say something, a person has to know these things, and this knowledge constitutes an important part of the ability (entelecheia) of performing the rhetic act.

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Since we have to perform phonetic, phatic, and rhetic acts in a single activity to speak a language, our ability of speaking a language necessarily contains the elements that are responsible for the performance of these acts, and this means that our ability of speaking a language contains both cognitive elements and non-cognitive elements.

This distinction and co-existence of cognitive and non-cognitive elements in an ability to perform the proper activity of a normative entity can be extended to the cases of games. Actually, it is quite convenient to metaphorically extend Austin's terminology (phonetic, phatic, and rhetic) into these cases as we did for locutionary, illocutionary, and perlocutionary. Think about the case of tennis. If one can hit a tennis ball with a racket, one has an ability of performing 'phonetic act' of tennis, i.e. basic physical act that is necessary for playing tennis. If a boy with excellent athletic ability can hit a tennis ball in the way a professional player does, he has an ability to perform the 'phatic act' of tennis, i.e. to perform that fundamental physical act in a certain style that has a special value in tennis. However this boy with an excellent ability to perform the 'phatic act' of tennis still doesn't perform the 'rhetic act' of tennis, i.e. tennis-playing, if he doesn't know whether or not he is serving the game or how he can get a point. To perform this rhetic act of tennis, i.e. tennis-

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playing as the proper activity of tennis, we have to know what constitutes a tennis game or a point in a game in addition to having the physical skills necessary for playing tennis. In a word, we have to have atheoretical knowledge of the normative categories of tennis such as game, set, match, service, point and so on to play tennis.

Thus, we can say that tennis-playing as well as English-speaking are cognitive activities in the full sense of the term while activities related to no particular normative entities such as walking, running, swimming, or hunting are skills with no cognitive elements necessarily involved though they can be very intelligent activities.[12]

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12. We shouldn't here confuse being cognitive and being intelligent. Intelligence is a general measure of smartness or wisdom which doesn't necessarily contain a cognitive element in our sense. On the other hand, being cognitive is a property that is definable only in relationship with the possibility of recognizing the truth of a certain propositional content. They are independent of each other; being cognitive doesn't mean being smart or being wise, and being smart or wise doesn't necessarily require being cognitive. We can and do often speak foolishly, and a gorilla can behave in a much wiser way than all human beings without recognizing the truth of anything in the way we do, i.e. through the medium of language. The failure of Ryle's criticism of 'intellectualism', as we noted already, consists in his confusion of cognition and intelligence.

According to the view that we try to construct through this work, it is not the property of being intelligent, but the property of being cognitive that essentially distinguishes the natural world and the human world. In a sense, we humans have the fate of both failing to recognize the truth and of having to recognize the truth because of our possession of the cognitive capacity in this sense. The concepts of tragedy and comedy , among other human categories, don't make sense without human beings'

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It is because of this ineliminable cognitive element that it is possible to call our capacity of English-speaking or tennis-playing knowledge in the full-fledged sense of the word without any danger of ambiguity, vagueness, or confusion.

Thus, we are now in the position to be able to characterize normative knowledge of X as native knowledge. However, before doing so, we have to emphasize the fact that this normative knowledge of English or tennis is atheoretical knowledge to avoid any misunderstanding. Austin's and our analysis of speaking as the proper activity of language into cognitive and non-cognitive elements (phonetic, phatic, and rhetic acts) might give an impression that they are actually separable, and are learnable independently. However, it is not the case since they are atheoretical knowledge and the cognitive element (knowing) and the non-cognitive element (doing) can exist only as an integrated and amalgamated form in atheoretical knowledge.

Atheoretical knowledge is like a cocktail; atheoretical knowledge of something can exist as such only when all elements in it that are extractable in our analysis exist in an integrated and amalgamated form, just as a highball can exist as such only when whiskey and ginger ale are mixed so well that we cannot separate them.

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cognitive capacity.

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If we acquire the cognitive element of knowledge of English separately by making these normative categories of English the object of our cognitive activities and without experiencing English-speaking in the process of acquisition, the resultant knowledge inevitably becomes theoretical knowledge by reflecting the way it has been acquired. Theoretical knowledge of a language is like the whiskey separated from a highball; as a chemical ingredient, it is the same as whiskey-in-highball, but to drink this separated whiskey and to drink ginger ale afterward cannot be a substitute for drinking a highball. Having knowledge of English in the sense of being a English-speaker only means having that knowledge in a form of atheoretical knowledge.

Thus, we can use the term knowledge of a normative entity in the sense of atheoretical knowledge of a normative entity in two ways. First it can mean the actual full-fledged ability to perform the proper activity of this normative entity. It can also mean the abstracted cognitive element of this ability. Let's call the first one normative knowledge in a concrete form and the second one normative knowledge in an abstracted form.

We call this normative knowledge in a concrete form native knowledge. Native knowledge of an entity is a concrete ability (entelecheia) to engage in the proper activity of that entity. This ability contains within

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itself both cognitive and non-cognitive elements in a totally integrated way, and is called knowledge because of the former. Natives of a normative entity are those who have this native knowledge. Natives of tennis are tennis-players, and natives of English are English-speakers.

4.2.4. Normativity of Normative Entities and Critique of Linguistic Platonism

We have mentioned names of normative entities such as English or tennis throughout our discussion directed to the characterization of the concept of normative entity. We mentioned them when we talked about the concepts of proper activity, native, and native knowledge since we cannot refer to a particular proper activity (e.g. English-speaking), particular natives (English-speakers), or a particular native knowledge (knowledge of English) without mentioning the normative entity (English) of which they are the proper activity, natives, and native knowledge. After all, there are no natives as such, no proper activities as such, or no native knowledge as such; they are all proper activity of something, native of something, and native knowledge of something.

No doubt, such usage that is forced on us by the very structure of these names mediated by "of" creates an

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impression that a normative entity's being or existence is independent of and (logically and temporally) prior to that of its' proper activity, its natives, and its native knowledge.

As a matter of fact, such an ontological inference implied by the structure of "of" is very often correct. For example, there can be no national flag of France without France, no picture of George Washington without George Washington, or no knowledge of water without water. In these cases, B in "A of B" has existence independent of and prior to that of A of B. Let's call this type of of-relation ontologically well-ordered of-ness. However, not all of-nesses are ontologically well-ordered, and the fact that we have to mention English to refer to "English-speakers", "English-speaking", or "knowledge of English" doesn't necessarily means that English is something independent of or prior to these things. For example, the following of-nesses are not otologically well-ordered, and it is nothing but a fallacy to infer the independent and prior existence of B from the existence of A of B in these cases: "selector of a winning number (of a lottery)", "father of Mary", "plan of a trip", "dream of a success", and "hope of the existence of heaven". In these cases the existence of B in A of B is not prior to that of A of B, thus we cannot say e.g. that there exists a success because we have a dream of success. Such a fallacy is called

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hypostatization.

The essential feature of normative entities is that neither "native of a normative entity", "proper activity of a normative entity", nor "native knowledge of a normative entity" is ontologically well-ordered. In other words, what makes something a normative entity is the fact that this entity has its natives, proper activity, and native knowledge, but its existence is not independent of or prior to them.

Among these three ontologically non-well-ordered ofnesses related to a normative entity, the most important one is that of "native knowledge of a normative entity" since "knowledge of an object" relation is usually ontologically well-ordered. Water can and does exist independently of and prior to our knowledge of water, and dinosaurs could and did exist independently of and prior to our or anybody's knowledge of them. The objectivity of our knowledge of these objects consists in the possibility that they exist in themselves independently of cognitive activities of any cognitive agents. In these cases, we can infer from our possession of knowledge of X the existence of X.

On the other hand, a normative entity, say, English, cannot exist independently of or prior to English speakers' native knowledge of English. It is not the case that there has existed or eternally exists an entity called English

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prior to the cognitive activity of any people and it is not the case that this entity was discovered by a group of people who came to be called English or English-speakers because of this discovery. If this were the case, contrary to the reality, then the relationship between English speakers and English would be similar to the one between a special mathematical structure, say a special type of group, and a group of mathematicians who happened to have discovered this structure. In such cases of mathematics what makes mathematicians' activity a discovery is the existence of an independent standard (e.g. the theory of groups) according to which their claim of the discovery can be judged correct or incorrect. It is always conceivable that these mathematicians collectively make a mistake and that other mathematicians point out this mistake. On the other hand, we just cannot conceive such a possibility of a collective mistake of a whole speech community of English since there is no standard of correctness about English independent of what English speakers actually know about English.[13] If there are no people who are the natives of English and who speak/know English, there can be no English. Existence of English, if we are to speak of its existence at all, cannot be separated from English

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13. As will be discussed soon, this doesn't mean that English speakers can explicitly state all grammatical facts about English. This, however, means that nobody can make judgments about grammatical facts of English independently of English speakers' native knowledge of English.

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speakers' native knowledge of English. We call this special ontological non-well-orderedness between an entity and its knowledge mediated by the concept of natives normativity. If the relationship between an entity and its knowledge is normative in this sense we call this entity a normative entity and natives' knowledge of it normative knowledge. A normative entity and natives' knowledge of it cannot be separated. For a normative entity, being means being known by its own natives. Since natives' knowledge of a normative entity is based on their activities, the existence of a normative entity depends on the activities of its natives. Even a dead language necessarily used to have its natives engaging in the activity of speaking it. What we have called "normative entities" such as languages and games are normative in this sense, and they are distinguished from mathematical objects in this respect since the concepts of natives, the proper activity, and the community[14] have no clear applicability to them.

If we look back at the history of the name of each language, this language's dependency on its natives (people) becomes less paradoxical. For each human language there had originally existed a community of people who recognized and identified themselves as people sharing,

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14. For the relationship between a normative entity and its community, see 4.1.2.6.

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among other things, the same way of speaking, and afterwards their language came to be named after the name of this group by other groups of people. Only when a language gains a wide inter-communal currency like present English, is its name separated from the name of its original speech community, and do people come to be named after the language they speak, as English speakers are. In such a case, a language creates a new unity of people independent of its original soil.

From this point of view linguistic platonism is nothing but hypostatization based on the false assumption that "knowledge of language" is ontologically well-ordered. To say that English is a platonic object whose existence is independent of natives' knowledge of English since knowledge of English and English itself are different,[15] is

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15. This is one of the main arguments for platonism developed by J.J. Katz, who is the most prominent advocate of linguistic platonism. See Katz 1981,pp.76-82.

Another problem of linguistic platonism is that linguistic facts are not necessary facts in the sense that facts about natural numbers are necessary. According to platonism, abstract (platonic) objects exist independent of all contingent features of the temporal world and facts about them hold in all types of possible situations (see ibid.,pp.185-186). This characterization applies to mathematical objects and facts about them, but not to linguistic facts. It is true that the fact that modern English has a rigid word order is a consequence of the historical fact that English has lost case ending system of nouns. However, the relationship between these facts is not the one of necessitating, but the one of motivating. Particular facts about modern English grammar are not necessary consequences of any facts and we cannot logically deduce them. Therefore, even if it is granted that mathematical objects are platonic objects, we cannot apply this idea to linguistic objects. This problem is already

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based on the same fallacy as saying, when we have a plan of a trip, that the trip has to exist in a certain realm because the plan of a trip and the trip of which it is the plan are different.

Of course, we can separate the objects of knowledge from knowledge at the level of native knowledge in an abstracted form. For example, we can say that linguistic categories of sentence-of-English, word-of-English, and sound-of-English are different from natives' knowledge of them when we abstract cognitive elements from native knowledge in a concrete form. However, if we conclude from this that they exist as platonic objects like numbers, we commit the fallacy of hypostatization based on obliviousness of the fact that this knowledge in an abstracted form derives from native knowledge in a concrete form possessed by actual natives of English.

This fallacy based on the obliviousness of the existence of natives becomes clear when we compare these normative categories of English with such a basic mathematical category as natural number. When we want to know the basic nature of natural numbers, there are no special group of people whose atheoretical knowledge of numbers is their ultimate factual ground. In other words,

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pointed out by Itkonen in his review of Katz 1981. See Itkonen 1983a, p.242.

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there are no natives of natural numbers, and every human being, in principle, has equal access to the category of numbers. On the other hand, if we want to know the nature of the normative categories of English and if we are not natives of English, we have to ask natives of English or become natives of English by learning English. Whatever deep linguistic or mathematical insight one may have, one's "intuition" has no use unless one is a speaker of English. In this respect, there exists a crucial difference between natural languages (and other normative entities) and mathematical objects.

Of course, the mathematical structure of English itself trivially has the same ontological status as other mathematical objects and can exist without any natives specific to it. However, if there didn't exist natives of English, we have no reason or motivation to call that mathematical object the structure of English or even the structure of a language; it is nothing but one of infinitely many mathematical structures. Facts about this structure would be not facts about English as one natural language, but facts about one mathematical structure. It is the activity of a particular group of people that makes this abstract object the structure of English. If linguistic platonism means by "language" the mathematical structure of a language, there is nothing wrong with this terminology except the resultant awkward situation in which

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we cannot distinguish linguistics from mathematical linguistics. If platonism means by "language" actual natural languages spoken by certain groups of people,linguistic platonism seems nothing but a fallacy of hypostatization.

4.2.5. Normative Knowledge as Self Knowledge.

We thus define normative knowledge as native knowledge, and this definition shows the origin of the normativity, i.e. it shows that the normativity of an entity (inseparability of being and being known) derives from the fact that a normative entity like languages or games ontologically depends on its natives and their activity though we have to talk as if it were the other way around in some cases.

There are another pair of prominent features of normative knowledge we have to emphasize. One is that it is self-knowledge, i.e. knowledge about the knower him/herself, the other is that it is communal knowledge, i.e. knowledge because of sharing which people form a community within which alone a genuine communication is possible. In this section we deal with the aspect of self-knowledge, and in the next section we will deal with the aspect of communal knowledge.

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As we indicated in 1.4., our normative knowledge is knowledge about ourselves. However, it is also clear that our normative knowledge, say, knowledge of English, is not of the same nature as our knowledge about our own body. For example, when we feel pain in our body, we unmistakably recognize this phenomenon as belonging to ourselves. On the other hand, when a native of English recognizes an utterance as an English sentence or a sequence of English sounds, this utterance is initially recognized as an object external to the native's self. In such cases we, as natives of our own language, are prone to think that we observe and make judgments about other people's utterances as objects external to ourselves, just as we observe and make judgments about water as a purely external object. The fact that this recognition of the English-hood of an utterance is also tne recognition of one's own linguistic identity as an English-speaker is not immediately recognized in such cases though if we ask the native the standard of that judgment, he/she can ultimately find the answer in no other place than his/her own linguistic identity, i.e. the fact he/she him/herself is an English-speaker. Thus, language has a tendency to be taken as an external object, i.e. to be externalized even by its natives though natives' knowledge of language is self-knowledge in a significant sense. Because of this special character, we have to clarify in what sense we call

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normative knowledge self knowledge. This question is nothing but that of what our knowledge of language is about.

The question of what the native knowledge of a normative entity is about, is ultimately reduced to the question of what the normative categories of that normative entity are about. For it is the native's atheoretical knowledge of these categories that carries the cognitive element in native knowledge and makes it possible to ask what that knowledge is about, since it makes no sense to ask what a skill is about though it makes sense to ask what a skill is for. Thus, for example, what the native knowledge of English is about depends on what normative categories of English such as sentence-of-English, word-of-English, or sound-of-English are about since it is only in judgments about the application of these categories that the cognitive element of native knowledge of English manifests itself. What, then, are they about?

As remarked above, they always appear as external objects even to natives themselves when we take them as independent categories. For example, if a native of English thinks about the category of word-of-English, this category hardly appears as telling something about him/herself. Of course, the native's relationship with this category consists in the fact that this is a category of a language which is the native's own, but this general

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possessive relationship itself doesn't make his/her knowledge of this category knowledge about the native him/herself, just as the fact that Edward Koch is the mayor of someone's own city doesn't make this person's knowledge of Edward Koch self-knowledge. On the other hand, as remarked above, if a native is asked why he/she judges a particular object as an instantiation of word-of-English, he/she eventually has to go back to no other fact than the one that the word belongs to his/her own language. Of course, he/she can answer that the word is listed in e.g. the OED; but this answer is usually nothing but a trick since he/she usually hasn't actually consulted the OED to know that that word belongs to English, but rather assumes that the OED should contain that word since he/she already knows that the word belongs to English. Even if he/she actually has consulted the OED, it can be a reliable source only because its editors are natives of English or have consulted other natives of English.

This paradoxical situation, namely the fact that normative categories of English themselves appear external to natives of English while the ultimate standard of their application seems to exist in no other place than the natives themselves, can be resolved only when we remember the relationship between native knowledge in a concrete form and native knowledge in an abstracted form. When we think that the normative categories of a normative entity,

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say, English, are independent of each other and applicable in isolation, we think about native knowledge in an abstracted form. When we think about native knowledge in an abstracted form, we think that natives of English know such categories as sentence-of-English, word-of-English, or sound-of-English, independently of each other, just as they know such categories as water, tree, dog, independently of each other. However, the essential difference between these two groups of categories is that the former can apply to an object only when that object has the structured relationship to an actual performance of the proper activity of English -- English-speaking activity -- while the latter can apply to an object if that object has a particular property in itself. The conditions of the application of normative categories cannot specified by general terms that characterize the intrinsic properties of an object.[16]

This difference becomes clear when we remember how Austin analyzes the locutionary act into phonetic, phatic, and rhetic acts. Even if a monkey produces the sound of the word "go" in a perfect intonation, to ask whether we should count this object as an instance of word-of-English is as absurd as whether a gust of wind that sounds exactly like the word "who" should be counted as an English word.

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16. For more detailed discussion about the special nature of normative categories, especially linguistic categories, see 5.1.2.2.

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It is not because this object was produced by a monkey rather than a human being. It is because the category of word-of-English applies significantly only to an object that forms a part of another object produced in the performance of the proper activity of English, i.e. English-speaking by an English-speaker, and the monkey's "go" is not a part of the activity of speaking English according to our tacit assumption that the monkey hasn't acquired the ability of speaking English through living in a speech community of English as an apprentice for a while as children do. Thus, we will have the same difficulty even for a human being when hearing the sound /gou/ produced by a person who doesn't know English. The only situations in which these normative categories of English are applicable to isolated objects are pedagogic and academic ones where people teach and investigate English, but what makes such application meaningful is the fact that people who teach, learn, and study English have a relevant relationship with the actual performance of English-speaking such as being able to speak English or acquiring the ability to speak English, which the monkey or the mimicker doesn't have.

Thus, contrary to our initial idea that normative categories of a language such as "word", or "sentence" are applicable to independent objects separated from the activity of speaking and that we can identify something as

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an instance of the word e.g. "go" by investigating its intrinsic property, we can properly apply them only to the objects produced in its proper activity, namely English speaking. We often have that wrong idea because when we think about our own language, we more likely to think about the native knowledge of language in an abstracted form -- i.e. an abstract system of categories-- than the native knowledge in the concrete form --our actual knowledge which is manifested in our activity of speaking--. This proper application of normative categories is nothing but the manifestation of our own native knowledge in the concrete form, namely our own activity of speaking itself. Our application of the normative categories of our own language is not any separate activity other than that of speaking or understanding. When we speak ourselves, we don't produce utterance, on the one hand, and monitor and identify it on the other. When we understand other people's utterance, we don't first observe it, and afterward analyze it by applying categories of our language. They are actually the single activity of speaking, which is the manifestation of our native knowledge of language.

Thus, when located in their proper and original place on which their secondary applications in pedagogic and academic settings depend, it becomes clear that the normative categories of our own language are not about any external objects other than ourselves, but about the very

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activity we are engaged in as natives. It is about our selves as natives.

When we recognize, identify, and understand our fellow natives' utterances through our normative categories, we recognize it not as an observer who is engaged in some different activity than the speaker's, but as a participant of the same activity of speaking. By the very act of recognizing and understanding our fellow native's utterance, we already let our own native knowledge work and are engaged in the same activity the speaker is engaged in. If we disengage ourselves from the activity of speaking and objectively observe every detail of bodily movement of the speaker, we can hardly understand his/her utterance though such a disengagement is extremely hard. For the understanding of an utterance consists in its identification through the proper application of the normative categories of our language, and such an application cannot be done unless our native knowledge works properly and we are engaged in the activity of speaking.

The activity of our fellow natives we recognize and understand is the same activity we are engaged in by this act of understanding, and it is this sameness of activity between the speakers that makes the understanding possible. When we understand others speaking, we already speak ourselves; we can't understand them unless we ourselves

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speak. Thus knowledge of language when it works in its proper activity is self-knowledge.

This feature of self-knowledge applies to other normative knowledge, too. When a batter of baseball who is waiting his at-bat understands what is going on the bases, he is already engaged in the same activity the fielders are engaged in by the very act of understanding their activity though he himself physically does nothing. What he is understanding is the same activity he is engaged in by the act of understanding.

4.2.6. The Concept of Community and Normative Knowledge as Communal Knowledge

It was shown that our normative knowledge is self knowledge, but it is quite different from another case of self knowledge that is often taken as a paradigmatic case of self-knowledge, namely our knowledge about particular conditions of our own body such as the possession of certain sensations. To explicate this special feature of normative knowledge as self-knowledge is the purpose of this section. Let us first give a sketch of how these two cases of self-knowledge are different.

When I feel a pain in my arm and recognize this sensation as my own, my recognition is about the present

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state of "I" as an individual and nothing more. The content of this recognition is that I as a particular individual now has this sensation of pain in this particular part of my body. Even if I feel how another person suffers from the wound, the content of my recognition is about the present state of that particular individual. On the other hand, when I as a native of Japanese recognize an utterance as an instance of Japanese produced by another person, my recognition is not about "I" as an individual even less the present state of "I" as an individual. When I recognize that the other <u>says</u>, "Ohayo", what I recognize is not only about this particular person, but also about something that connects that person and me, namely Japanese language, since I have to know that "Ohayo" belongs to the category of Japanese-word to achieve this recognition. Moreover, this part of what is recognized is not about I and that person as a particular pair of people like my knowledge about a promise made between two of us, but about general people who speak Japanese. My recognition is about the way the speaking activity is articulated for whoever knows the same language as mine. In a word, my recognition of an utterance of Japanese is self-knowledge not because it is about "I" as an individual, but because it is about "I" as a member of "we" whose common feature is that of being a speaker of Japanese. It is this aspect of normative knowledge that we here call <u>communal</u>. For each

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normative entity X, members of this "we" are connected by the relation of sharing native knowledge of X, and they form a special mode of collection because of this relationship. We call this mode of collection of individuals community. In the case of language, it is called speech community. The purpose of this section is to clarify how the relationship of sharing the native knowledge ties individuals into a community in the sense close to that of ordinary use of the word "community", which means more than a mere collection of people and that very often implies that people in it "know" each other.

The sense of "community" that we want to capture here is that of a group of people in which communication in the genuine and generalized sense can take place. Therefore, we first have to clarify this concept of communication. Let's think about the case of linguistic communication first, and then extend this case into that for normative entities in general.

Linguistic communication, in a simple case, is an activity by two participants in which they say something to each other and understand what each other says or intends to say. When we understand the "say" in this process in a metaphorical way, the process of communication is extended so that it includes these cases in which two people with no common language manage to communicate with each other

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through a non-linguistic medium like gestures. However, for a theory of natural language, what we have to capture is the type of communication in which two natives with common language communicate with each other by saying something in that language. We call this type of communication a genuine communication in a common language. Any theory of communication that fails to account this type of communication has little significance to our discussion on the nature of human languages as particular entities. With respect to the relationship between these two types of communication (genuine communication between natives and extended sense of communication), there are two possible positions we may take, and each position has its own condition for adequacy. On the one hand, if we think that these two types of communication are essentially different, then we have to clearly state in what their essential difference consists, and, on the other hand, if we assimilate these two types, we have to show how the "mechanism" at work in one of them also makes the other possible. There is, we think, no apriori ground for arguing for either of these approaches, but we believe that the former is correct. To show some grounds for this view is a part of our purpose here.

There are two major views about the process of communication that are often encountered in the

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literature.[17] One is called the inference model, and the other, the code model. We think that both of them are deeply inadequate for the goal we set above. The inference model sees the process of linguistic communication as a process in which each participant constructs and tests a theory about what the other means by means of the observation of overt verbal behaviors with the aid of various background assumptions. The code model, on the other hand, sees linguistic communication as a process in which each participant decodes the overt signs into messages by matching these signs with an internalized code. The common feature of these views is that both of them see the process of understanding what the other participant says as a cognitive process directed to what he/she says, e.g. the process of constructing a theory about what the other participant says, or the process of matching what he/she says with an internalized code. In other words, the process of understanding is, according to these view, the process of epistemic justification whose result has grounds such as consistency with overt behavior or matching with the code. From our point of view, it is this account of understanding process as a theoretical process that is wrong in both of these views. We have to examine their

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17. For the critical summary of these two views, see Sperber and Wilson 1986, pp.2-38. Though they focus on Grice type theory when they discuss the inference model, Quine-Davidson type view (communication as radical interpretation) also belongs to this view.

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inadequacy before exploring our own view.

About the code model, it is true that we sometimes communicate with each other in such a fashion. For example, we have to use such a mode if we don't know the language well and always ask our memory the meaning of words. However, it is exactly the lack of such a process of "decoding" that marks the genuine linguistic communication between two natives. The code model simply seems to avoid the problem of bridging the real communication between natives and the theoretical model based on the concept of code. It might be thought that the code-mode theorist can appeal to the concept of 'tacit matching with the internal code' and say that natives tacitly use this code. However, the concept of native speakers' internalized code of their own language itself is very hard to make sense of, whether it is explicit or tacit. The concept of "code" or "internalized code" can have a full significance when applied to a language which we don't know well since such a code can consist of the set of pairs of an expression of that language and the corresponding expression(s) of our own language; such a code ("translation manual") tells us what foreign words mean in our language. However, what does an internal code of the language of a monolingual person look like? What is each expression of his/her language coupled with? with a picture? Then, what kind of pictures can be matched with

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such abstract but fundamental words or concepts as "time", "space", "object", "action", and so on? There are so many words for which pictures cannot be used in the code such as "is", "a", "the", "can", and so on. Even if there were some entities --e.g. symbols in a brain-- that can be assigned to any words in the code, in what sense can this "code" be called a code? Does it tell the speaker what these words mean? Or does the speaker "know" another language --Ur-language-- with which his language is matched? Then why don't the same problems occur to this new language? All of these questions point to one fundamental problem: the code model owes its plausibility to the fact that we can actually understand things unknown to us by replacing them by things already known to us while things we already know or understand don't have to be and cannot be replaced by other things by means of a code in order to be understood. Therefore, the proper range of the code model for communication is the one in a language we don't know well since we can replace it by our own language. By what can we replace our own language to understand it? [18]

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18. These questions are those raised by Wittgenstein concerning the problem of "rule following". See Wittgenstein 1953, sections 185-201. His own solution to these questions is concisely exhibited in the following passage, to which my attention was directed by J.J.Katz:

> This was our paradox: no course of action could be determined by a rule, because every course of action

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As for the inference model, the obvious difficulty is that according to this model the process of communication between two natives has to be considered as a process of a kind of a guessing game between two players that has no definite solution since any theory about the intention of the speaker is underdetermined by overt evidence in a non-trivial sense. This picture is what Quine's story of radical translation or Davidson's story of radical interpretation[19] tells us it is like to communicate in

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> can be made out to accord with the rule. The answer was: if everything can be made out to accord with the rule, then it can also be made out to conflict with it. And so there would be neither accord nor conflict here.
> It can be see that there is a misunderstanding here from the mere fact that in the course of our argument we give one interpretation after another; as if each one contented us at least for a moment, until we thought of yet another standing behind it. What this shews is that there is a way of grasping a rule which is not an interpretation, but which is exhibited in what we call "obeying the rule" and "going against it".
> (Wittgenstein 1953, section 201.)

From our point of view, "a way of grasping a rule which is not an interpretation" is nothing but a actual manifestation of atheoretical knowledge.

19. Quine 1960, chapter 2, and Davidson 1973. Quine gives no explicit picture of how the communication in the same language occurs, but if we consider his discussion that indeterminacy of translation occurs even in one's own language, it seems quite natural to understand that Quine's view on communication in the same language is essentially the same as Davidson's, namely a view of communication as a process of mutual interpretation aided by the principle of charity. See the following passage:

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language. However, our experience of communication tells us that what is really going on when we speak is quite

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> On deeper reflection, radical translation begins at home. Must we equate our neighbor's English words with the same strings of phonemes in our own mouths? Certainly not; for sometimes we don not thus equate them. Sometimes we find it to be in the interests of communication to recognize that our neighbor's use of some word, such as "cool" or "square" or "hopefully," differs from ours, and so we translate that word of his into a different string of phonemes in our idiolect. Our usual domestic rule of translation is indeed the homophonic one, which simply carries each string of phonemes into itself; but still we are always prepared to temper homophony with what Neil Wilson has called the "principle of charity." (Quine 1968, p.46.)

Quine here talks as if the communication in the same language is just another case of radical translation in which the participants of the conversation has no common knowledge about the medium in which they communicate. However, we think this picture that Quine try to present is highly self-deceptive in that the plausibility or the intelligibility of the story depends on the existence of the thing whose existence it negates as a premise, namely the common knowledge of language. What in this passage is smuggled from the back door is the speakers' common knowledge of the phonological system of their language, which is atheoretical knowledge. In this passage Quine talks as if the homophonic relation is something objectively given and, thus, there is no problem about the determination of phonemic identity of utterances. However, if we consider the normative nature of "phoneme" as a linguistic unit (category), which we discussed in 4.1.2.4. (see the quotation from Saussure), and the fact that phonemic identity of utterance is not physical or acoustic identity of sound wave in any significant sense, we cannot assume that problem of indeterminacy doesn't occur at the determination of phonemic identity insofar as we start with Quinean behavioristic naturalism. From linguistic point of view, phonemic identity (what constitutes the sameness of phonemes) is no closer to natural identity (what constitutes the sameness of natural properties) than the semantic identity (what constitutes the sameness of meanings) is. For the more detailed argument and criticism, see 5.1.2.2.

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different from such a story.

Nevertheless, this story has some plausibility, and what lends a minimum plausibility to this inference model is the fact that sometimes we are actually engaged in such a guessing game even when we speak in our own language. For example, two participants may use a particular word in quite differently ways[20], or a person's ultimate intention for telling us particular things in the conversation may be unknowable literally forever as is often the case between lovers. This, however, doesn't mean that we have to guess what the other participant says when we share the language, which we have to do if we don't share the language. This rather means that the process of communication contains two aspects: one is atheoretical understanding of what is said, and the other is the theoretical process of inferring what is meant or intended to be achieved by the things said. When a woman says to me, "I love you" I don't have to make any inference to know what she said if I know English, but I may have to be involved in an endless guessing game to know what she means by saying what she said even if I were the most knowledgeable person about English in the world. When we ask, "What do you mean?", we already know the

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20. This is the point Quine appeals to in the passage (Quine 1968, p.46) we quoted in the previous note as a ground for the existence of indeterminacy of translation in our own language which necessarily makes the communication in the same language the process of mutual guessing game.

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literal meaning of the utterance. To understand the real nature of communication, we have to clarify the relationship between these two aspects in the genuine communication process between natives.

It is again Austin who gives us the ground for this clarification. As is already mentioned, he abstracts three acts from the single activity of speaking. They are the locutionary act, the illocutionary act, and the perlocutionary act. The understanding of a locutionary act consists in the identification of linguistic units at various levels such as sound, phrase, word, and sentence. Through such identification we locate the sounds, words and sentences of another person in the system of normative categories of our language we know as atheoretical knowledge. If we can identify what words and sentences were uttered , there can be little room for ambiguity even less indeterminacy about what is literally said, i.e. the content of the locutionary act. When a native understands the content of the locutionary act of another speaker, he/she recognizes the instantiations of these normative categories of his/her language as the manifestation of his/her atheoretical knowledge of these categories without making these instantiations (each word or sentence) the object of focal consciousness while his/her attention is directed to other objects such as the topic of the discourse. He/she understands what is said without any

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theoretical process, just as he/she recognizes that what he/she is drinking is water without any theoretical process when he/she drinks a glass of water. In other words, a person cannot be engaged in an activity of speaking in a language if he/she has to make each word or sentence the object of cognitive activity; it is the mark of native knowledge of a language that a person has the capacity of understanding what is said without making this content the object of cognitive activity such as guessing or inferring. If a person has to be engaged in such theoretical activity in the understanding of the content of the locutionary act, that only means that he/she hasn't mastered that language yet.

On the other hand, the understanding of the illocutionary act of speaking activity consists in the identification of the so-called illocutionary force of the uttered sentence, and there is involved a larger degree of ambiguity at this point since the same sentence can perform several different types of illocutionary acts. To identify the illocutionary force of a concrete speaking activity of a person, we usually have to locate it in a wider matrix of background beliefs and motivations of that person. Thus this process may involve theoretical activities. However, this possible ambiguity is far from the indeterminacy that Quine or Davidson suggests. For what kinds of illocutionary acts can be performed is determined for each

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type of sentence, and knowledge about the possible illocutionary forces of each sentence type is a part of native knowledge of a language. Thus, if both of us know English and I say to you, "Can you come to my home tonight?", there is no possible ambiguity about the content of my locutionary act but whether I invite or order you to come to my home may vary depending on our relationship. (If I am your employer, it is very likely a polite form of order). However, that I can perform several illocutionary acts with this sentence doesn't mean that I can perform any illocutionary acts I intend with this sentence (for example, I cannot declare a war by this sentence however strongly I say in my mind,"I hereby seriously ,really declare a war against your country." even if I were a president of a country); this sentence has a particular range of possible illocutionary forces it can carry, and to know English implies to know this range as atheoretical knowledge.

Finally at the level of perlocutionary act, there often occurs an unlimited range of indeterminacy about interpretation. Even if we know each other very well and both of us have good comprehension of our conversational setting, you may well be involved in an endless guessing game about what I really intend by that utterance. I may really want you to come tonight, or just want to know your schedule, or expect you to turn down my invitation, or want

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to show off an intimate relation with you to other people, and so on. Dramas and novels are full of such indeterminacy. The process of grasping the intention of the speaker in this sense usually involves an explicit cognitive process directed to the intention of the speaker, and our focal consciousness is often directed to this intention in conversation in our own language while we rarely pay attention to what is done at the level of illocutionary act much less to what is said at the level of locutionary act.

Considering the clear distinction among these three levels in ordinary process of linguistic communication and their systematic relationship with the concept of genuine communication in the common language, namely the fact that what makes a process an instance of the genuine communication is not the participants general ability to understand each other, but their specific ability to identify locutionary acts and illocutionary acts in the common language as the manifestation of atheoretical knowledge of language, we have to conclude that Quine/Davidson's view of communication (the inferential model) is based on the neglect of this crucial distinction that defines the very subject matter of linguistic communication.

These considerations on Austin's classification gives us a

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clear view about what constitutes the genuine communication by means of which we want to define the concept of community. According to our analysis of Austin's analysis of speaking activity, what characterizes the genuine linguistic communication between natives is the fact that we understand the speaker's locutionary and illocutionary acts as the manifestation of our atheoretical knowledge of normative categories of our language while our attention is focused on the identification of the perlocutionary act of the speaker. If such a process of genuine linguistic communication occurs between two speakers, this means that they share atheoretical knowledge of a common language and belong to a particular group of people by virtue of the possession of this knowledge. We call this group of people a speech community constituted by normative knowledge of a language[21] since what makes a native of a language belong

21. What we try to capture here is the general feature of speech community that it is constituted by the sharing of atheoretical knowledge of language. If we take a closer look at the contents of knowledge, we have to think about different levels of speech community to which the same speaker belongs at the same time. We have to at least distinguish the following different levels of speech community: a common language (e.g. English), dialect (e.g. New York dialect), speech style specific to a particular social class, speech style specific to a gender. Our linguistic identity is determined by which linguistic community we belong to at each level, and the latter is determined by what and with whom we share "the way of speaking" (atheoretical knowledge of langauge) at particular aspect of speaking activity. For the problem of the relationship between the unity of a speech community and the variation within it, see 5.2.5. For the comparison of various ideas about the concept of "speech community" in linguistics, see Braithwaite 1984.

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to his/her speech community is his/her possession of the normative knowledge (native knowledge) of that language, and we call such genuine communication that takes place in the speech community of a language X, genuine communication in X.

Now we can extend this concept of genuine communication in X and the community constituted by normative knowledge of X to normative entities in general. The resultant concepts are the generalized concept of genuine communication in a normative entity X, and generalized concept of community constituted by native knowledge of a normative entity X. This extension is quite trivial since we already know that we can extend the Austinian trichotomy of locutionary, illocutionary, and perlocutionary acts to normative entities in general. In short, the genuine communication in a normative entity X is a process in which two natives of X identify normative categories of X in the proper activity of X of each other as the manifestation of atheoretical knowledge of those categories; there is usually involved a theoretical cognitive activity directed to the intentions of each other that is supposed to be realized by this activity. The combination of these two aspects in a single activity makes the process genuine communication in X. If there takes place such genuine communication in X between two agents, they belong to the community constituted by native

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knowledge of X. For example, if we play chess and I move my queen and take your bishop, and you wonder what I want to do on the basis of the recognition of my move as such, there takes place genuine communication in chess between us. The literal meaning of my move appears to both of us as plain as the fact that a tree is a tree, but it is only because we belong to the community of chess players by sharing normative knowledge of chess.

If these characterization of the genuine communication is correct, we can say that genuine communication, which we experience with our neighbors every day, takes place between two agents only because they share the common native knowledge. In other words, shared native knowledge as we have explicated from 4.2.1. through 4.2.5. is a necessary condition for communication in a genuine sense.

However, what we haven't shown yet is which aspect of sharing-native-knowledge-of-a-normative-entity make this communication possible, and thus, contributes to making a collection of individuals into the special mode of collection called a community. For not all types of sharing-knowledge relation organize individuals into a community. We still don't know why our knowledge of language is not about "I" as an individual, but as "I" as a member of "we". We have to ask what kind of sharing-knowledge relation makes a community a community. In other words, we have to define the concept of community

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straightforwardly. This is the most important topic in this section.

Individuals form various groups by sharing various properties. The nature of a group is determined by what propert(ies) its members share. These properties we call defining properties of a group. There are many different types of groups. On the other hand, the fundamental spirit of modern mathematical set theory is to focus on the formal structure of collections of individual by abstracting the particular nature of the shared property. Thus, all objects heavier than 100 pounds form a set by sharing the property of being heavier than 100 pounds, and all English speakers form a set by sharing the property of knowing English. From the point of view of set theory, these two collections of individuals are equally sets, and the difference between them is completely ignored by set theory. However, from our point of view, these two collections have completely different natures. The collection of English speakers attains to a special mode called a speech community while all objects heavier than 100 pounds form only a mathematical construct called a set.

Our current question boils down to explicating the difference between these two modes of collection of individuals, and this difference cannot consist in anything

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other than the relationship between the shared property of a collection and the members of that collection.

Formally speaking, a speaker of English has infinitely many properties, and belongs to infinitely many sets defined by them; the speech community of English is nothing but one of them. However, the membership of the speech community of English has a special significance to each member and has a special relationship with what he/she is since only by virtue of belonging to this community can he/she participate in the activity of English-speaking with other members, without which he/she cannot perform activities characteristic of human beings. We have to clarify what this special significance the speech community and the community in general has for human beings.

To reach the heart of this essence of community, we have to consider two dimensions along which a collection of individuals can be further classified in accordance with the nature of their defining (shared) property. One is external collection vs. internal group, the other is cognitive collection vs. non-cognitive collection.

When individuals form a collection C by sharing a property P, we call this collection external to its members if the defining property P is an intrinsic property in the sense that it can be specified without referring to the general members of the collection C as its members. If a

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collection is external to its members, we call it an external collection. In this sense, the set of all objects heavier than 100 pounds is an external collection since the property of being heavier than 100 pounds has no reference to the members of this set, and the set of objects that have the same weight as President Bush is also an external collection since we can specify this property only by referring to a particular individual (President Bush) without referring to the general members of this set as members. The latter is an example of the general case of an equivalence class defined by the property of having the same X (e.g. weight) as the designated particular individual Y (e.g. President Bush). In the case of such an equivalence class, not only can we specify the defining property without referring to the general members of the set, but also we have to refer to a particular individual to specify this property. In either case, the defining property is external to what the members of the set are except for the designated individual in the case of an equivalence class. If a collection is external in this sense, its members belong to it not by virtue of their mutual relation as its members, but by virtue of the properties they have in themselves as individuals or by virtue of their relationship to a particular designated individual. In either case, there is no intrinsic or determining relationship between what each member of the

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set is and its belonging to the set. In this sense, we can say that a collection external to its members is nothing but an aggregate of individuals. There is no difference between these members considered as individuals and the same entities considered as the members of such a collection. These members acquire no further properties by becoming the members of such a collection except the mere name, "a member of such and such a collection." In this sense, an external collection is a nominal set.

On the other hand, if the defining property P of C cannot be specified without referring to the general members of the collection C, however many particular designated individuals may be mentioned, we call C internal to its members, and if a collection is internal to its members, we call it an internal group. In such a case, each member of the collection becomes a member only by virtue of its relationship with other members in general, and the members get into additional mutual relations other than that of belonging to C by virtue of their belonging to C. A speech community as we understand it in a pre-theoretical sense is a typical example of internal groups. We cannot define a speech community by specifying a set of linguistic features unless they are the features of a particular natural language that is actually spoken by the members of a particular speech community. We cannot define it through the relationship of speaking the same language

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as by designating a particular individual unless we specify a particular aspect of this individual's language that constitutes the defining property of this speech community, and we can specify such a defining feature only by specifying what the general speakers of the speech community share as its members. If we don't specify such a defining feature and are to define English as the language of President Bush, we have to share all stylistic features of the President's language to speak English. The membership of a speech community can be defined only as sharing the language with other members of the speech community, and because of this nature of the defining property, the members of a speech community get into an additional mutual relationship, namely the one of being able to communicate with each other only by being its members. We will elaborate this point later.

This concept of internal group is by no means limited to human communities; it has much wider range of application. One interesting example of internal groups is Leibniz's concept of the universe as a collection of monads. According to Leibniz, a monad belongs to a universe only when the former expresses the latter in its perception, but since a universe, in its turn, is a collection of monads, a monad has to express all monads in the universe to which it belongs. Thus, we cannot know whether a monad belongs to a particular universe or not

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only by examining its intrinsic properties. We also have to know what other monads expressed by this monad actually belong to the universe. By virtue of belonging to a universe, the monads get into the further mutual relationship of expressing each other and expressing the same universe in different ways.

Another and more familiar example of internal groups is biological species at relatively higher levels. If this concept has any reality at all, one essential condition for the membership of a species is that of reproduction. For an individual to be a member of a biological species, it has to be reproduced by other member(s) of this species and to be able to reproduce other members of the species in cooperation with other members of the species insofar as its organs function normally.[22] We cannot define a biological species by a set of intrinsic properties of an individual if these properties have no systematic relationship with the reproductive relationship among its members. By virtue of their belonging to a species, its members get into further mutual relationships that reflect their form of life. For example, by virtue of being members of the species of tiger, individual tigers get into further mutual relationships such as reproducing-next-

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22. If an individual is manufactured by genetic engineering, the first condition won't be met, but the second one has to be; in other words, the second condition becomes the criterion of technological creation of an individual of a species.

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generation-of-tiger-with, raising, competing-for-a-mate-with, or competing-for-a-territory-with. The members of an internal group are connected with each other in a way the members of an external collection are not since their having the defining property of the internal group already contains various relationships with other members of the group.[23]

We said that an external collection is nominal. This characterization corresponds to the fact that we can form an external group by picking up any property from among infinite properties that an given individual possess without considering whether it shares this property with other individuals; even if there are no other individuals that possess this designated property, we still have a set with one member (singleton). If we pick out President Bush and the frequency of a certain word, say, "dog", in his

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23. There are variety of sub-classes of internal groups, but we cannot get into this topic deeper than superficial remarks here. For example, of these internal grounds, Leibnizian concept of universe has the highest degree of mutual connection among the members since membership requires reference to all the members of the group. On the other hand, the natural kind, water, is a case in which the elements of an external collection and an internal group are mixed. On the one hand, we can specify the defining character of this kind through the intrinsic character of each molecule of water. On the other hand, the molecules of water get into an additional mutual relation of forming ice (crystal) together by virtue of their possession of this defining property. The natural kind of water is by no means an aggregate of individuals that happen to share certain intrinsic properties; they share historical origin determined by the history of the universe.

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speech, we can construct a set of speakers who use this word with the same frequency as Bush within a certain range of error. If there happen to be other individuals who have this property, this set has more than one member; if there aren't, it has only one member. Even if he happens to share this property with other individuals, his having this property and his sharing it with other individuals are external to each other in the sense that Bush might have had this property even if no other individuals ever had this property. In either case, we can construct a legitimate set without previously knowing whether this particular property is unique to Bush or is actually shared by plural individuals. This is because the ground of an external collection is merely our mental activities of abstracting a property, putting-things-together, and naming. On the other hand, we cannot form an internal group like a speech community or a species in such a way. If a property we picked up is not shared by plural individuals in such a way that what these individuals are is partly determined by what they actually share with other individuals, we cannot define either a speech community or a biological species. It is because the ground of internal groups such as a speech community or a species is not our mental activity of abstracting any property from actual individuals, but the objective relationships among actual individuals that condition what they are, i.e. their

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identity. I am a human being and have the weight of 125 pounds. I could have the second property without sharing it with anybody else, but I can't have the first one without sharing it with other actual human beings.

We can create external collections, but we have to discover internal groups. The internal groups to which an individual belongs specifies its kinds based on the nature of things themselves in this sense; they specify what this individual is. Therefore, we call the membership of an internal group an individual belongs to an identity of this individual. According to this usage, an individual has as many identities as the internal groups it belongs to.[24]

Community in our sense is a special species of this internal group. For the defining property of a community is the sharing of atheoretical knowledge of a normative entity (e.g. English) with other members, and the members

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24. Fundamentally there are two concepts of identity of an individual. One is the totality of infinitely many properties an individual has. In this sense no two individuals share the identity, and there is no way to specify the identity of an individual other than call to it by a proper name or the indexical "this" since there is no way to select some properties from among these infinite properties as the characteristic properties of the individual except by an arbitrary decision. This concept of identity is essentially about the this-ness (irreducible individuality) of an individual.

Another is the one we use here, which is about the what-ness of an individual. In this sense an individual cannot get a certain identity unless its shares the identity with other members of a group that is constituted by this identity. We may call it "essence". In this sense, we can have an essence only insofar as we share it with others.

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of a community constituted by this knowledge enters the further relationship of being able to communicate with each other in X in a genuine sense because of their belonging to this collection. However, community is further differentiated by other internal groups such as biological species by the feature of being cognitive, which we are going to introduce next.

We call a collection cognitive if its defining property is the sharing of knowledge of the same contents or categories. Otherwise, we call a collection non-cognitive. Biological species are internal groups but not cognitive collection. Community is something that defines the identity of its members though their knowledge.

However, knowing something itself doesn't make the knowers a community. A mere fact that the individuals know the same thing itself doesn't constitute them as a community any more than individuals' belonging to a biological species constitutes them as a community. It is not knowledge in general, but a special kind of knowledge we call communal knowledge that is necessary for the formation of a community and the possibility of genuine communication.

For example, two people who know that The French Revolution started in 1789 don't enter into any further relation with each other because of the fact that they belong to the collection of people who know this fact. We

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can define the collection of people who know this historical fact without referring to the members of this collection. This is because the property of knowing this fact doesn't specify anything about the relationship among the members of this collection. The property of knowing this historical fact is a purely intrinsic property of each individual that cannot constitute an internal group. By knowing this historical fact we don't know anything about other people who know this same fact. Two knowers of this historical facts have as little mutual connection as two objects heavier than 100 pounds. We call a kind of knowledge that doesn't constitute a community <u>non-communal knowledge</u>.

On the other hand, our native knowledge of a language is <u>communal knowledge</u> in the sense that two people who know the same language as natives get into the relationship of being able to communicate with each other by knowing this language. The communal nature of knowledge of language is also reflected by the fact that we cannot define a speech community through any intrinsic properties of an individual speaker. However elaborately we define the grammatical features of a language, we will fail to define a speech community if there is no speaker who speaks the language thus defined. We can define a speech community only by mentioning actual people who belong to this community. By knowing the common language the members of a speech

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community already know something about each other even if they know nothing about each other as individuals. The possibility of genuine communication must consist in this special feature of communal knowledge that we know something about other people who know the same thing by knowing this thing.

This special feature of communal knowledge derives not from a particular contents of knowledge, but a special mode it is acquired, namely coming to know something through a communal activity. In the rest of this section we first show that any special features of contents themselves don't make knowledge communal, and then explicate what the communal activity is and how this activity generates communal knowledge.

Let's think about the following two pairs of people who know nothing about each other as individuals, to see how the communality of knowledge is independent of contents of knowledge. One is a pair of natives of a language, another is a pair of linguists who share the theoretical knowledge of the grammar of a particular language, say, Sanskrit, without being natives of any languages common to them. The difference between non-communal knowledge and communal knowledge is reflected in the way they will communicate with each other.

Despite the vast amount of knowledge about Sanskrit

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they share, the two linguists have to start their communication in an awkward way similar to that of Quine's radical translation by speaking their own languages without understanding each other, or making gestures, since they don't know that both of them are linguists, even less that both of them share a great amount of a common language, namely Sanskrit. If they are interested in each other and are patient enough, they may eventually reach the mutual recognition that both of them know Sanskrit very well. Thus, they may eventually communicate with each other quite successfully. However, they need a great amount of intellectual work and cooperative attitudes to reach this point by making various assumptions about each other. All of these processes involve theoretical activities on each side; they have to guess, think, and infer about each other's intentions, beliefs, and knowledge. Despite their common knowledge of Sanskrit, these two linguists have to go through these painful processes since their knowledge is theoretical knowledge of Sanskrit which has been acquired by taking the Sanskrit language itself as the object of their cognitive activity;they don't know anything about other knowers of Sanskrit by knowing Sanskrit in such a way.

The situation is radically different in the case of two natives. If they hear each other's speaking, they would instantly recognize that they belong to the same

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speech community and know what the other is saying, even if they are so hostile or indifferent to each other that they have no intention to communicate with each other. They need no intellectual work or assumptions about each other. They simply see what the other says as such, just as they simply see trees or birds as such. What distinguishes this case from the previous one is that these two natives already know how the speakers of their speech community speak and communicate with each other by knowing their language. They don't know each other as an individual "I", but they already know each other as a member of "we" to which they belong. Their knowledge is communal. Their knowledge has such a feature since they have acquired this knowledge not by making their language the object of theoretical activities, but by engaging in the activity of speaking their language with other members of the speech community. We call the activities like speaking that generate communal knowledge in individuals communal activities. Let's investigate the nature of communal activity that makes communal knowledge possible with the aid of linguistic analysis of the verbs for communal activities.

We human beings perform a vast number of activities in our life such as walking, eating, speaking, or making a house, and they are expressed verbs and words attached to them

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such as "to walk down a street", "to eat fish", "to speak English", or "to build a small house". These expressions are called verb phrases. In a language verb phrases express and characterize our activities. Though their number is huge and they seem to have no organization, each activity has a certain semi-formal structure according to which we can classify the activities into several sub-classes such as the intransitive activity, for which an agent doesn't need any objects other than him/herself, the transitive activity, for which an agent needs object(s) other than him/herself on which he/she acts, and the cognitive activity, whose objects are ideas, concepts, or propositions (objects of thought). In a language these structures are more or less reflected in the structures of verb phrases which are characterized by the relationship between the verb and noun phrases attached to it. In this structure of a verb phrase each noun phrase has what is called the semantic role or the thematic role in linguistics.[25] In a word, the semantic role of a noun phrase is the abstract relation between the noun phrase and

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25. The study of semantic roles is really an intermediate area between linguistics and philosophy. It needs both linguistic analysis of formal structures of verbs in each language and philosophical thinking about the nature of activities in human life. So far this area has been almost exclusively studied by linguists in the tradition of generative grammar. For early important works in this area, see Gruber 1965, Fillmore 1968, and Jackendoff 1972 (chapter 2). As we will discuss in 5.2.2., the concept of semantic role plays an essential role in the current syntactic theory of Chomsky under the name theta-role.

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a verb in a sentence that characterizes an aspect of an activity. For example, the semantic roles of "John", "a ball", and "a bat" in (a) are the agent of action, the object or patient of action, and the instrument respectively.

(a) John hits a ball with a bat.

These three semantic roles characterize the basic structure of the activity of hitting as a transitive activity. Thus, the analysis of the structure of semantic roles gives us a valuable insight for the philosophical investigation of the nature of human activities just as philosophical considerations are necessary for linguistic analysis of the semantic roles, though the surface grammatical structure is very often deceptive and we need a cautious attitude for the application of such a method.

What we try to do here is to explicate the special nature of communal activities such as speaking a language or playing a game by using the analysis of the structure of semantic roles of the corresponding verb phrases as a guide. Our purpose is not the linguistic analysis itself, but to reach the essence of communal activities with the aid of this analysis.

Think about the following six verb phrases and the

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activities they express:

(1) To walk down Fifth Avenue. locomotive intransitive activity

(2) To eat fish with a knife. transitive activity with an instrument

(3) To push a car from school to a gas station with John. locomotive transitive activity with a co-agent

(4) To think that quantum mechanics is difficult. cognitive activity

(5) To play tennis with Ettel. communal activity

(6) To speak French with Ettel. communal activity

(1)-(4) belong to philosophically more or less familiar types of activities, namely intransitive, transitive, and cognitive activities, and (5) and (6) belong to communal activity, whose nature is the target of our investigation. Philosophical familiarity of the first four activities is reflected in the fact that we can know the semantic roles of noun phrases in (1)-(4) without difficulty. On the other hand, the semantic roles of noun phrases in (5) and (6) are not immediately clear though the structural parallelism between these two verb phrases strongly

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suggests that these two activities share the same nature.

Superficially (5) and (6) are similar to (2) and (3). "tennis" in (5) and "French" in (6) look like the object (patient) of action like "fish" in (2) and "a car" in (3), and "Ettel" in (5) and (6) looks like a co-agent of transitive activity like "John" in (3). However, a moment's reflection easily reveals that this parallelism is nothing but a superficial one, and the very nature of communal activities consists in the special semantic roles of "tennis", "French", and "Ettel" in (5) and (6).

Let's begin with the analysis of "tennis" of (5) and "French" of (6). What makes "fish" of (2) and "a car" of (3) the object (patient) of action is not the formal fact that they come immediately after the verb, but the fact about the activities related to them that the agent acts on these objects in the course of the performance of these activities (eating-fish and pushing-a-car). On the other hand, an agent who plays tennis doesn't act on tennis while he/she is playing tennis, nor does an speaker act on French while he/she is speaking French. We cannot assimilate (5) and (6) with (4), either. A tennis player doesn't think of tennis while he is playing tennis; a speaker doesn't think of French while speaking French. Communal activities are not cognitive activities.

It is true that a tennis player and a speaker act on certain physical objects while they are engaged in these

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activities, namely a tennis ball and air streams. In this respect these activities contain physical motions, and seems to be closer to transitive activities than to cognitive activities. However, what characterizes these communal activities is the fact that they cannot be paraphrased by any elaborated combination of transitive activities on these physical objects. As we discussed in 4.2.3., playing tennis is not same as hitting a tennis ball with a racket in a certain way, nor is speaking French same as disturbing the air in a certain way. Communal activities are distinguished from transitive activities on physical objects such as (2) and (3) in two respects.

For one thing, they cannot be performed without a partner that is expressed by "with Ettel" in (5) and (6). We may push a car with a co-agent like (3) if the car is heavy, but the existence of the co-agent is not the necessary ingredient of these transitive activities; if the car is light, we can push it by ourselves. On the other hand, we cannot play tennis or speak French alone; the partner is a necessary ingredient of the constitution of communal activities.[26]

For another thing, communal activities are

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26. It might be though that we can speak alone as when we deliver a lecture. However, even giving a lecture has to be done to audience who understand the lecture in order that that activity becomes that of giving a lecture. If you are producing French utterances against a wall with nobody surrounding you, it is at best difficult to tell what you are doing.

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distinguished from transitive activities on physical objects by the fact that the former are energeia-processes while the latter are kinesis-processes. When an activity consists in acting on a certain physical objects, the achievement of this activity is marked by the alteration of conditions of that object such as shape or location, and such a process has the beginning and the end; it is a kinesis-process; it has to be completed and terminated at a certain point. When we are hitting a ball, we haven't hit it yet, and the process of hitting a ball has an end by virtue of the very nature of activity; when we are releasing the breath by moving our tongue, we haven't released the breathe yet, and the process of releasing the breath has an end by virtue of the very nature of activity. On the other hand, when we are speaking, we have already spoken, and we can indefinitely continue speaking since there is no completion of the activity of speaking in itself since it is always already completed as speaking. When we are playing tennis, we have already played tennis. We can complete a game, a set, or a match, but we cannot complete the activity of playing tennis itself since it has been already completed from the beginning.

These two features constitute the essence of the semantic role of "tennis" in (5) and "French" in (6), namely normative entity. These noun phrases don't designate physical objects the agents act on or ideas they

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think about, but the communities and normative entities whose proper activities are expressed by the verb. These activities are neither self sufficient like the intransitive activity nor goal-oriented (kinesis) like the transitive activity. They are the activities (energeia) between natives that are always already completed and can continue indefinitely.

Let's turn to the semantic role of "Ettel" in (5) and (6). Superficially they look like "John" in (3), but, as we already remarked, they are distinguished by the fact that the role John plays is not essential for the constitution of the activity of pushing a car while the role Ettel plays is essential for the constitution of the activities of playing tennis and speaking French. We call the former a co-agent and the latter the partner. Moreover, the role of the partner of communal activity is distinguished from co-agent in general by the fact that only those people who meet the conditions that are specified by the type of a communal activity can play the role of partner. There are no particular conditions for a co-agent of pushing a car that are determined by the nature of the activity of pushing a car. Of course, not everything can play this role, but who can play this role can be determined only by specific conditions of each concrete case; there is no general characterization of pushers of a car. On the other hand, the role of the

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partner of tennis can be played only by tennis players, and that of French-speaking can be played only by French speakers. In other words, the role of the partner of a communal activity can be played only by the members of the corresponding community who have native knowledge of the corresponding normative entity. Communal activities are the activities that can be performed only between the members of the same community.

Thus, communal activities are characterized by the linguistic fact (at least, of English) that the corresponding verbs take the semantic roles of normative entity and partner that are specific to communal activities. They constitute a special class of activities that have clear linguistic counterparts. They are neither collective agents' acting on an object, nor a cognitive agent's thinking of an object of thought. They are not a single agent's self sufficient activities such as walking or singing, either. They are the activities that the members of a community perform together as the manifestation of their normative knowledge. They are the activities that can be expressed only by such terms as "speaking French" or "playing tennis".

We can now explicate why our native knowledge of normative entities (normative knowledge) is necessarily communal knowledge. Normative knowledge is knowledge that can be

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acquired only through the corresponding proper activity such as speaking a language or playing a game and that is manifested most clearly in this activity. This proper activity of a normative entity is nether a transitive activity on physical objects nor a cognitive activity; it is a special type of activity called communal activity whose nature we have just discussed. A communal activity can be performed between those people who knows, among other things, the corresponding normative categories as objects of atheoretical knowledge. A communal activity is the actualization of such knowledge. When we are engaged in a communal activity, we are recognizing these categories and, through these recognitions, also recognizing the identity of the partner as a member of the community while we are producing the instantiations of these categories ourselves. To have normative knowledge means to have the ability to recognize these categories and the members of the community as such. We acquire such knowledge by engaging in a communal activity with other members of the community as an apprentice. At the beginning of such learning process our recognition of these categories and other members is naturally incomplete, and our acquisition of normative knowledge is not completed until our recognition becomes complete. On the other hand, when our normative knowledge is completed and we become full-fledged natives of a normative entity, we have already acquired

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atheoretical knowledge about a particular type of people who are the natives of this normative entity. Therefore, the instant mutual recognition of two natives in our previous example is nothing but the actualization of their normative knowledge thus acquired. What the two linguists are lacking is such a process mediated by a communal activity with other members of the community; they have acquired their knowledge of Sanskrit not through speaking Sanskrit with other people but by making this dead language as the object of their theoretical activities.

When two native speakers recognize and understand each other in the activity of speaking a language common to them, what they recognize is an instantiation of a type of people (native speakers) whose possible shapes of activity are articulated by the normative categories of that language. In the speech of each other, they recognize their own selves, but not the self as an individual "I", but the shared self as a "we" to which both of them belong. In this sense, normative knowledge is communal self knowledge.

4.2.7. Knowledge of Language as Primitive Normative Knowledge

So far we have dealt with natural languages and games in exactly the same way. Both of them are normative entities,

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namely both of them have proper activities and there are natives for both of them who have the completed ability to engage in the proper activity with other natives. In this ability, the element of doing and the element of knowing are integrated into one. A communal activity as its manifestation is neither doing (acting on an object) nor knowing (recognizing a certain content) in usual sense of the words; they can be described only as such activities as French-speaking or tennis-playing.

However, there is one important difference between languages and games with respect to the modes of their native knowledge. In a word, this difference consists in the fact that native knowledge of games is constituted by rules while native knowledge of languages is not constituted by any rules. Thus, we call native knowledge of languages primitive normative knowledge and native knowledge of games rule-constituted normative knowledge. To clarify this important distinction is the purpose of this section.

First we have to explain in what sense we say that games like tennis or chess are rule-constituted normative entities. Native knowledge of a game, say, tennis, is atheoretical since it is acquired through actual performance of the proper activity, and its cognitive element and non-cognitive element are integrated into one.

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Thus, when a tennis player recognizes something as an instantiation of normative categories of tennis such as service, game or winning, in playing tennis, this recognition is done as a typical manifestation of atheoretical knowledge of categories; he/she doesn't observe the other player's move and compare it with a criterion or code to decide whether it constitutes a service or a winning. In a word, the player isn't engaged in any additional cognitive activity besides the activity of playing tennis when he/she recognizes instantiations of these normative categories.

Nevertheless, when the player is asked the ground for his/her judgment, he/she paradoxically can and should give the answer; the answer consists in the identification of rule(s) that specify what constitutes these normative categories of tennis. In this sense, native knowledge of the normative categories of tennis is not ungrounded knowledge; it has a ground!, and this ground is the rules of tennis. However, this doesn't make tennis a non-normative entity by making its native knowledge theoretical (grounded) knowledge, and this is because of the special nature of rules that distinguishes them from laws in general.

Despite the fact that native knowledge of a game has a ground in this sense, that native's knowledge of categories of a game is not theoretical (grounded) knowledge in the

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ordinary sense becomes clear if we ask the ground for these rules themselves.

If we ask the ground of a rule of tennis that specifies what constitutes a service, we have to face a strange situation in which it is difficult even to tell whether there is a ground for it in a straightforward sense. The rules of tennis to which tennis players can and have to appeal as a ground ultimately take the form of explicit texts (e.g. rule books) and these texts have its origin in the legislation of an authoritative body of tennis players whose authority over tennis players give these rules the validity as the rules of tennis. It is this authoritative origin of the validity of rules of tennis that enables tennis players to appeal to these rules as a legitimate and objective ground for their judgments. If a rule to be appealed is a hearsay or an expression of "intuition" of the player, the player cannot appeal to it as a ground; after all why do other players have to accept these things as his ground? However, the act of legislation of any particular organization itself cannot give the validity to a rule unless this rule is actually learned by tennis players as a part of their native knowledge of tennis and they play tennis in accordance with this rule. A rule has to be practiced by natives to be a rule. If this rule were ignored by tennis players for one reason or another , then no tennis players could appeal to

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it for a ground of their judgments just because it was legislated by an authoritative body. In such a case the authority of that body itself would be undermined by the neglect of tennis players since this body has actual authority over tennis players only insofar as rules legislated by it have authority over tennis players and are learned as valid rules by them, and this decreased authority would further discourages tennis players from learning and practicing its rules.

Thus, there is a circularity between the validity of rules that makes them grounds for tennis players' judgments and tennis players' knowledge of these rules, and this circle is mediated by two things: an authoritative body of tennis players and authorized texts of rules. What actually gives the validity to the rules of tennis is neither the act of legislation of the authoritative body itself nor tennis players' knowledge of them, but the very reproduction of this cycle to which all of these elements (the legislation by an authoritative body, authorized texts of rules, and tennis players' knowledge of these rules) contribute.[27]

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27. We can observe the exactly same mechanism for the sustainment of legitimacy of a state. The circle is constituted by the state as an authoritative body of people, authorized texts of the law, and people's normative knowledge of the law. The legitimacy and the very being of the state is based on the reproduction of this cycle whose elements reinforce or hinder each other. Because of this circularity, the state usually reestablishes itself just by existing, but if there occurs abnormality at any point of

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What characterizes entities like tennis is this circularity and the existence of an authoritative body and authorized texts. We call them rule-constituted since natives' judgments can have a ground in authorized texts of rules. In this respect, these entities are distinguished from entities like languages since there are no such a authoritative body or authorized texts for any natural languages. We also call these entities like tennis normative since the ground for these rules eventually have to be based on natives' knowledge of them. In this respect, these entities are distinguished from natural categories. When we make a judgment about water and are asked the ground, we may appeal to a law about the nature of water; if we are further asked the ground for this alleged law, we may appeal to an authoritative body of chemists, but it is not because this body has the authority to legislate laws about water on the basis of its natives' knowledge of these laws, but because we assume this body represents the best knowledge about water itself. Thus the ultimate ground is not in natives' knowledge but in the nature of water itself; in this sense the category water is not normative.

On the other hand, if a normative entity has no authoritative body and these are no authorized texts that

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the cycle, this can exponentially develop itself into a critical situation.

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can be a ground for natives' judgments about relevant categories (e.g. grammaticality judgments), we call it a primitive normative entity. Languages, among others, are primitive normative entities. It is true that even for a language these are laws that characterize normative categories of it (e.g. grammaticality). However, what decisively distinguishes the laws of a primitive normative entity and the rules of a rule-constituted normative entity is the fact that these laws are nothing but an abstract and systematic expression of natives' knowledge and that the validity of any texts of these laws depends not on the authorization by anybody, but only on their conformity with what natives know. There are no authoritative body of texts external to natives in the case of a primitive normative entity. Linguists may advocate a reform of a language, but they cannot legislate laws of a language since there is no applicable concept of legislation in the case of language.

Considering this crucial difference between languages and games like chess or tennis, we have to cast some doubt on a strict analogy between language and game. According to the view of language based on this analogy, language is often called "a system of rules"[28], and people's activity of speaking is called " rule-governed behavior"[29]. These

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28. For example, Itkonen 1978, p.126.

29. Searle 1969,p.12.

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expressions apply to games in the strict sense of words. A tennis player follows rules of tennis when playing tennis, and tennis can be called a system of rules since the rules of tennis simply don't describe tennis players' knowledge of tennis, but actually determine what constitutes tennis through its authority. On the other hand, native speakers of a language don't follow "rules" of that language since there are no rules to follow; there are no rules that determine what constitutes a language. There exists only natives' knowledge, and any texts of laws of a language just describe this knowledge. The analogy between language and game gives us an impression that language is as easily palpable as games with explicit rule books, and this may be a gospel to researchers of language, but this gospel is based on an oversimplified and impoverished picture of human language. If the analogy between language and game has any value, it should tell us not that language is a kind of game, but that games like chess are institutionalized (authorized) and externalized (textualized) form of primitive normative entities whose best example is language. It is not "language-game", but "game-speaking" that we have to think about.[30]

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30. The later Wittgenstein's concept of 'language game' (Sprachspiel) has to be systematically scrutinized and criticized from this point of view. One point we have to focus on is the ambiguity of the German word "Spiel" between "play" and "game". If the validity of this analogy between "Sprach" and "Spiel" depends on the latter's meaning a rule-constituted normative entity, such an

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4.3. Linguistics as a Science of Knowledge

When we have atheoretical knowledge of a category, we can take this knowledge as an explicit object of theoretical activity by reflecting on our own knowledge. The result of this activity is the systematic explication of what we know about that category in the forms of a set of laws that have deductive structure among them. This activity and its result constitutes a class of disciplines that can be legitimately called sciences of knowledge. The product of sciences of knowledge is theoretical knowledge (meta-knowledge) about our atheoretical knowledge of categories (object knowledge). The relationship between these two

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analogy is based on an inverted view of the original relation between them. Games in this sense is not conceivable without the existence of authoritative social institutions and its authorized texts. Language, on the other hand, is historically and logically prior to these entities.

On the other hand, if "Spiel" is intended to mean "play" like a baby's play, it is not clear to what extent this analogy is significant. The concept of play in this sense cannot capture the normativity of language. If the term "Spiel" is intended to mean a forgotten primordial concept that originally unified the spontaneity of "play" and the normativity of "game", which seems to be the most interesting interpretation, the later Wittgenstein's texts seem to be too restricted in their subject matters to capture this interesting concept.

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levels of knowledge was already recognized in the Schutz thesis we discussed in the first chapter(see 1.2.2.). What was not recognized at that point is the possibility of systematic classification of sciences of knowledge according to the nature of the categories the object knowledge is about. We are now in a position to be able to do this.

Sciences of knowledge are divided into two major sub-classes depending on whether the object knowledge is about non-normative categories or about normative categories. If the object knowledge is about non-normative categories, the science of knowledge is separate from the science that investigates the nature of the category that the object knowledge is about. For example, if a science of knowledge is investigating what we atheoretically know about water, this science has quite a different interest from a science that investigates the nature of water in itself since what water is is independent of what we atheoretically happen to know about water. This science of knowledge is directed not to what constitutes a certain category (e.g. water), but to what we know about it and why we know that and only that. The main focus of such a science is the investigation of the cognitive relationship between agents (e.g. us) and an object (e.g. water) under certain historical, cultural and social conditions. For example, it investigates how historical cultural and social

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relationships between us and water determines what we know about water now. Such a discipline is called the sociology of knowledge. One example of the sociology of knowledge is the sociology of science.

On the other hand, if the object knowledge is about normative categories, the cases have to be further sub-divided according to whether they are rule-constituted categories or primitive categories. If they are rule-constituted categories, what is atheoretically known about them is already determined and expressed by rules. Thus the main task of such disciplines consists in the systematization of rules and the interpretation of the authorized texts of rules. These activities can have direct practical consequences for the creation and revision of rules. Such disciplines may be called sciences of rules. The most developed and most important example of such sciences of rules is jurisprudence.

If the object knowledge is about primitive normative categories like linguistic categories, this investigation coincides with the investigation of the nature of these categories themselves. In other words, sciences that investigate the nature of primitive normative categories are really sciences of knowledge though this fact is often disguised. For example, logic as a science of the category of being-a-valid-argument is really a science of knowledge whose object is our atheoretical knowledge of that

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category. These sciences may be called normative sciences of knowledge. The main task of normative sciences of knowledge is to explicate what we know about a category in the form of atheoretical knowledge into the explicit form of laws and to investigate their logical consequences and preconditions through the systematization of such laws. We can see one of the best examples of such an investigation in Frege's Begriffsschrift, which is an astonishing explication and systematization of our atheoretical knowledge of logic.

Our cognitive relationship with the products of these sciences is especially interesting. To a great extent, what is discovered by these sciences is what we already know; thus a discovery is really a re-discovery. In such a process, the main task consists in guiding our attention in a Socratic fashion to things we usually don't think about. However, when a normative science of knowledge investigates the logical consequences and preconditions of our knowledge beyond the usual range of the application of categories, its findings often go far beyond what we already know in any sense of the word. One of the best examples of such cases is Russell's discovery of a paradox in Frege's system of set theory, which was meant to be a systematization of our ordinary concept of set or collection.[31] The discovery of Russell's paradox means that our atheoretical knowledge

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31. See Hatcher 1982, chapter 3.

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of the category of set, which is consistently applicable within a certain range, has a contradictory consequence if the category is extended in its application without limit. At this point, set theory departed from its original ground, and took quite an artificial and pragmatic path; there is no more unique set theory that represents our atheoretical knowledge of sets, but many set theories which have different points of interest[32]. As we will see in 5.1.4., the use of "knowledge" for these extended cases is one of the controversial points of Chomsky's concept of "knowledge of language".

Grammatical sciences such as phonology, syntax, semantics, and pragmatics, are normative sciences of knowledge in this sense. Itkonen calls them "autonomous linguistics".[33] They collectively investigate native knowledge of languages. They are differentiated from each other according to the primitive normative categories natives atheoretically know. This is possible because speaking as the proper activity of language has rich inherent articulation. From this point on, we will equate linguistics with these grammatical sciences. We are going to investigate the further details of linguistics as a normative science and the possibility of its naturalization, through the examination of Chomsky's idea

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32. See Hatcher 1982, chapters 4, 5, and 7.

33. Itkonen 1983, pp.1-13.

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of language and linguistics.

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CHAPTER 5 CRITIQUE OF CHOMSKYAN LINGUISTICS (PART I)

5.1. Chomskyan Linguistics

In the first half of this chapter we are going to examine the fundamental nature of Chomskyan linguistics that is usually called generative grammar. The focus in this part is not criticism, but a historically and conceptually fair interpretation of Chomsky's ideas of language and linguistics. In the second half, we examine the validity of a recent claim of naturalization of grammar by Chomsky. We try to criticize Chomsky's naturalism at the deepest level.

5.1.1. What is the Essence of Chomskyan Linguistics (Generative Grammar)?

Since their initial systematic formulation in 1955[1],

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[1]. See Chomsky 1955, chapters 1 and 2. The manuscript of this book was originally written in 1955-56, and eventually published in this original form in 1975 with a new historical introduction written at 1973. For the

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Chomsky's ideas about language and linguistics have undergone several important developments and modifications.[2] Despite these changes, however, there

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history of this book, see Chomsky 1973, pp.2-5.

This book is the first and one of the most comprehensive attempts of systematization of Chomsky's ideas of language and linguistics. In this book, we can observe, though in a seminal form for some cases, many elements that later characterize generative grammar (Chomskyan linguistics) such as "evaluation measure" or "levels of grammatical representation".

[2]. We can observe three major developments that can be associated with three important books: Aspects of the Theory of Syntax (1965), Reflections on Language (1975), and Lectures on Government and Binding (2nd ed.) (1982).

The first development is characterized by the explicit emphasis on the fact that Chomskyan linguistics is a science of knowledge in our sense, whose object is the native speaker's knowledge of his/her own language, which is called "grammatical competence" (Chomsky 1965, p.4). The second development consists in the establishment of the view that facts about language are facts about the natural world and linguistics is a part of natural science (Chomsky 1975, pp. 71, 139, 155-156, 183.). The third development consists in the formulation of a new idea about language acquisition that acquisition of a particular language by a child consists in the mechanical fixation of values of small number of parameters of Universal Grammar (Chomsky 1982, pp.6-8.)

Roughly speaking, to these three developments correspond three different formulations of linguistic theory of generative grammar, namely Standard Theory (ST), Extended Standard Theory (EST), and Government and Binding Theory (GB). ST and EST are characterized by the idea that a grammar of language as a theoretical representation of native's knowledge of language consists in a set of rules that generate the structural descriptions of all and only grammatical sentences of that language in the mathematical and formal sense of the word "generation" (Chomsky 1965, pp. 8-9). What differentiates ST from EST is the fact that linguistic meaning of a sentence is considered to be determined solely by its deep structure in ST while EST thinks that the features of surface structure (e.g. word order) also contribute to the determination of linguistic meaning of a sentence. For the comparison of ST and EST, see Janet D. Fodor 1977, chapter.3. Linguistic theory in G.B. framework is considered as the system of principles

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seems to remain one important feature in Chomsky's concept of linguistics unchanged throughout this process. That is the feature that Chomskyan linguistics (generative grammar) is a science whose object is not any object external to human beings, but a native speaker's knowledge of language.[3] Thus, Chomskyan linguistics (generative grammar) is a branch of sciences of knowledge in the sense defined at 4.3.

This feature is also the one that decisively differentiates Chomskyan linguistics from its predecessor called by such names as "structural linguistics"[4],

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and parameters. Later we will discuss the significance of the difference between G.B. and previous systems.
Thus, including the initial one, we have to recognize four major developmental stages in the history of Chomsky's thoughts on language.

3. Chomsky 1973, p.37.

4. A special caution is required when we use the term "structuralism" or "structural linguistics" since we can mean several different schools by it as Newmeyer correctly observes (Newmeyer 1986, pp. 3-7, 19-21.). Needless to say, the origin of structuralism is Saussure's idea that language (langue) has or is a <u>structure</u> as a system of linguistic values whose essential function is to differentiate themselves from each other in the system:

> When they [sounds] are said to correspond to concepts, it is understood that the concepts are purely differential and defined not by their positive content but negatively by their relations with the other terms of the system.
> (Saussure 1916, English translation, p.117.)
>
> But the statement that everything in language is negative is true only if the signified and the signifier are considered separately. When we consider the sign in its totality, we have something

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"descriptive linguistics"[5], "taxonomic linguistics"[6], or

> that is positive in its own class. A linguistic system ("Un systeme linguistique") is a series of differences of sound combined with a series of differences of ideas; but the pairing of a certain number of acoustical signs with as many cuts made from the mass of thought engenders a system of values ("un systeme de valeurs"). (Ibid., p. 120.)

If we call all schools of linguistics which consider it as their proper task to describe the structure of this linguistic system, then European structural linguistics like the Prague school and Hjelmslev's Copenhagen school, Sapir's linguistics, and post-Bloomfieldian linguistics, can and should be called structural linguistics.

However, it is only against post-Bloomfieldian linguistics that Chomskyan linguistics really shows a radical contrast that deserves the name "revolutionary". What characterizes Bloomfield's and post-Bloomfieldians' view of linguistic is their strong tendency to behaviorism (physicalism) and anti-mentalism similar to the position of the Vienna Circle. (As for Bloomfield's relationship with Vienna Circle, see Bloomfield 1936, in Katz 1985, pp.19-25.)

Chomsky's relationship, on the other hand, with other schools of structural linguistics, especially to Sapir, is completely different. It is Sapir and his "mentalism" that gave Chomsky an inspirational source for an alternative to the dominating post-Bloomfieldian view of language. See Chomsky 1965, p.193 note.1. Chomsky's philosophical relationship with the Prague school, including the late Roman Jakobson, is less clear and more ambivalent. However, the Prague school itself doesn't show the strong hostility to "mentalism" observed in Bloomfieldian and post-Bloomfieldian linguistics. See the following passage of Trubetzkoy as one indication of the humanistic element of European structuralism:

> The system of language exists in the consciousness of all members of a particular speech community and forms the basis for innumerable concrete acts of speech. At the same time, the system of language has no other reason for existence than to make the acts of speech possible.
> (Trubetzkoy 1939, English translation by Baltaxe, p.1.)

5. See Harris 1951, p.5.

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"post-Bloomfieldian linguistics". In comparison with generative grammar, this school is characterized by its exclusive interest in the overt linguistic products and behaviors. It is generative grammar's being a science of knowledge that makes the shift from post-Bloomfieldian linguistics to Chomskyan linguistics really "revolutionary". This difference exists as the essential one behind all other superficial differences between these two schools of linguistics such as the rigid formalism of generative grammar and its absence in post-Bloomfieldian linguistics.

Retrospectively, Chomsky himself characterizes this shift as the shift from the external manifestation of the knowledge of language ("E-language") to the knowledge of language itself ("I-language") as follows :

> In Chapter I, we saw that the study of generative grammar shifted the focus of attention from actual or potential behavior and the products of behavior to the system of knowledge that underlies the use and understanding of language, and more deeply, to the innate endowment that makes it possible for humans to attain such knowledge. The shift in focus was from the study of E-language to the study of I-language, from the study of language regarded as an externalized object to the study of knowledge of language attained and internally represented in the mind/brain. A generative grammar is not a set of statements about externalized objects constructed in some manner. Rather, it purports to depict exactly what one knows when one knows a language...

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6. Chomsky uses the term "taxonomic" to describe and criticize this school in Current Issues in Linguistic Theory. See Chomsky 1964, p.11.

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(Chomsky 1986, p.24.)

It might be thought that such retrospective and autobiographical description of the nature of generative grammar written 20 years after its conception cannot be regarded as a document showing that generative grammar has been a science of knowledge throughout its history. For, as a matter of fact, it is only in the last decade that Chomsky exclusively uses the term "knowledge of language" while he used to use the term "competence", which doesn't immediately suggest "knowledge" in an ordinary sense, before this period[7]. As we will see later, such a suspicion is not totally groundless, and the shift of terminology from "competence" to "knowledge" reflects an important development of Chomsky's concept of knowledge of language. However, this doesn't mean that this passage is only a retrospective self-complacent description of the history of generative grammar by its inventor that doesn't fairly represent the state of this theory in its earlier stage. On the contrary, there were keen observers who even at the earlier stage of generative grammar correctly understood that the essence of generative grammar is its'

7. Compare the terminology in Chomsky 1980 with Chomsky 1986. In the latter, the term "competence" is completely replaced by the terms "knowledge of language" or another technical term "I-language" while the term "competence" still has currency in the former.

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being a science of knowledge:

> The description of a natural language would be a formal deductive theory which would contain a set of grammatical rules that could generate the infinite set of sentences of the language, would not generate anything that was not a sentence, and would provide a description of the grammatical structure of each sentence. Such a theory came to be called a "generative grammar" because of its aim of constructing a device that would generate all and only the sentences of a language.
> This conception of the goal of linguistics then altered the conception of the methods and the subject matter. Chomsky argued that since any language contains an infinite number of sentences, any "corpus", even if it contained as many sentences as there are in all the books of the Library of Congress, would still be trivially small. Instead of the appropriate subject matter of linguistics being a randomly or arbitrarily selected set of sentences, the proper object of study was the speaker's underlying knowledge of the language, his "linguistic competence" that enables him to produce and understand sentences he has never heard before. (Searle 1972, in Harman 1982, pp.6-7; the underline is A.K.'s)

While such an accurate and even prophetic assessment of the real value of generative grammar was made by an outsider, ironically, many linguists, both non-Chomskyans and Chomskyan partisans, have failed to reach an agreement about what is the real meaning of the "Chomskyan revolution".[8] Moreover, there is an indication that even practicing generative grammarians, as late as 1986, didn't have any clear common understanding that the

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8. For the variety of different assessments of the meaning of generative grammar, see D'Agostino 1986, pp.58-59.

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essence of generative grammar is its being a science of knowledge. Frederick J.Newmeyer, who used to be an active practitioner of generative grammar, is an unique historian of generative grammar with the experience of a participant in this history itself. It is quite reasonable to think that his understanding, to a good extent, reflects common understanding, if there is any, or the best understanding of the issues in generative grammar among linguists. Nevertheless, surprisingly enough, the following passage about the meaning of the Chomskyan revolution triggered by the publication of Syntactic Structures is, at best, inaccurate and vague:

> What made Syntactic Structures revolutionary was its conception of a grammar as a theory of language, subject to the same constraints on construction and evaluation as any theory in the natural sciences. Prior to 1957, it was widely thought, not just in linguistics but throughout the humanities and social sciences, that a formal, yet nonempiricist, theory of a human attribute was impossible. Chomsky showed that such a theory was possible. Indeed, he devotes the central chapter of Syntactic Structures, "On the Goals of Linguistic Theory," to demonstrating the parallels between linguistic theory, as he conceived it, and what uncontroversially would be taken to be scientific theories. (Newmeyer 1986, pp.18-19.)

It is true that in this chapter,"On the Goals of Linguistic Theory" of Syntactic Structures, Chomsky assimilates the theoretical activity in linguistics with the theoretical activity in science in general (Chomsky 1957, p.49) in the respect that such activity consists in constructing a

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theory (grammar, in the case of linguistics) that explains observations (observed utterances, in the case of linguistics). However, such a parallel is not the special feature of generative grammar, but a common feature among post-Bloomfieldian structural linguistics and generative grammar; both of these schools of linguistics are scientific at this superficial level. More explicit identification of generative grammar as a part of natural science will be first established only twenty years later (Reflections on Language 1975). Moreover, Bloomfield and post-Bloomfieldians didn't consider linguistics as a part of humanities, but rather a part of natural science[9]; they were strongly scientistic. What Chomsky tries to show in this chapter of Syntactic Structures is not that post-Bloomfieldian linguistics is not scientific while generative grammar is, but that the condition on the relationship between "theory" and "observation" imposed by post-Bloomfieldians, namely, the condition that grammatical theory has to be constructed through deterministic decision procedure applied to objective linguistic data, is unreasonably strong, and that we should weaken this constraint to develop linguistics in a correct direction[10]. Chomsky's own alternative is to replace this deterministic discovery procedure with the weaker concept of an

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9. See Bloomfield 1930, in Katz 1985, p.20.

10. Chomsky 1957,pp.52-53.

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evaluation procedure for proposed grammars.

Thus, that generative grammar can achieve a scientific rigor that hadn't been dreamed of before by linguists is not what Chomsky claims in Syntactic Structures, or what he practically demonstrates in that book. It is true that Chomsky's grammatical description and analysis in Syntactic Structures (and in his subsequent works) exhibits formal rigor that is not common in the work of post-Bloomfieldians. However, it is not the empirical rigor of natural sciences such as physics or chemistry, but rather that of formal sciences such as logic or mathematics that Chomsky's works at this period exhibit. If we are to assimilate the analysis in Syntactic Structures with any already established disciplines, it is not the physical sciences, but foundational theories of mathematics such as recursive function theory. This is by no means an accidental coincidence; both generative grammar as conceived in Syntactic Structures and recursive function theory have the common goal of formally explicating a concept that is intuitively grasped[11]: for recursive function theory this concept is that of effective computability, and for generative grammar it is the concept of grammaticality in a particular language; Chomsky seems

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11. Another indication of the affinity between generative grammar and recursive function theory is that the origin of the concept of "generation" is that of E.Post, who is one of the pioneers of recursive function theory. See Chomsky 1965, p.9.

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to have well recognized this parallelism.[12] In a word, both of them are sciences of knowledge.

Later in the same book, Newmeyer mentions the concept of "competence" when he discusses the developmental stage of generative grammar marked by the publication of Aspects.[13] However, his remarks are nothing but a short description of this term, and there is no emphasis on the fact that the proper object of generative grammar is not external linguistic objects, abstract or concrete, but knowledge possessed by native speakers. If we remember the fact that it is the same text, Syntactic Structures, that Searle uses as the basis of his review of generative grammar as a new school of linguistics, the contrast between Searle and Newmeyer becomes more significant. What we are observing here is the Chomskyans' misunderstanding of the real meaning of generative grammar.

Why, then, can such a misunderstanding of Chomskyans about their own business happen if generative grammar has

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12. See the following passage of Syntactic Structures:

> For the purpose of this discussion, however, suppose that we assume intuitive knowledge of the grammatical sentences of English and ask what sort of grammar will be able to do the job of producing these in some effective and illuminating way. We thus face a familiar task of explication of some intuitive concept - in this case, the concept of "grammatical in English", and more generally, the concept of "grammatical". (Chomsky 1957, p.13.)

13. Newmeyer 1986, pp.71-72.

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possessed the feature of being a science of knowledge since its initial conception? The answer, we think, cannot be found in any other place than the historical development of Chomsky's thoughts on language itself.

It is one thing that generative grammar in its essence is a science of knowledge, and it is another thing that practitioners of this linguistic theory, including Chomsky himself, explicitly recognize or emphasize this point by using the term "knowledge". Chomsky's use of the term "competence", which connotes non-cognitive skills, seems to indicate a subtle hesitation on his part to directly deal with the concept of "knowledge of language" during a certain period of time. If we consider the fact that knowledge of language is actually atheoretical knowledge that cannot be effectively handled in the framework of traditional epistemology, it is understandable that Chomsky may have taken a very cautious attitude towards the problem of knowledge of language until he broke the limit of traditional epistemology so that he could grasp the special nature of knowledge of language. If this is the case, it is also understandable that other Chomskyans were misled by this subtle attitude of Chomsky's. That this is not our wild conjecture is indicated by the following passage:

> So far I have said nothing of 'knowledge of language'. I think that it would be quite reasonable to suggest a characterization of 'knowledge of language' in the terms just given; to say, that is,

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> that to know a language is to have internalized a generative grammar... It might be argued that this proposal does violence to the concept of 'knowledge'. The latter concept seems to me sufficiently obscure so that I do not know whether or not this criticism is just. It seems to me that our concept of knowledge fades into obscurity at the point where we consider what Leibniz referred to as the principles that "enter into our thoughts, of which they form the soul and the connection, "principles as necessary to thought" as the muscles and sinews are for walking, although we do not at all think of them." In the past I have tried to avoid, or perhaps evade the problem of explicating the notion 'knowledge of language' by using an invented technical term, namely, the term 'competence' in place of 'knowledge'. However, the term 'competence' suggests 'ability', 'skill', and so on, through a chain of association that leads direct to much new confusion. I do not think that the concepts of ordinary language suffice for the purpose at hand; they must either be sharpened, perhaps somewhat arbitrarily, or replaced by a new technical terminology. Either approach has a familiar disutility.
> (Chomsky 1969, in Gunderson and Maxwell 1975, pp.314-315.[14]; the underlines are A.K's.)

This passage indicates that Chomsky's use of "competence" at the Aspects stage is a deliberate one that reflects the difficulty and importance of the problem of "knowledge of language", and that he realized at this point (1969) the necessity of attacking the problem of knowledge more straightforwardly. It would not be difficult for readers familiar with Chomskyan documents to realize that the second option suggested at the end of this passage will be realized as a new technical term -- "to cognize"-- several

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14. See also Chomsky 1980, p.59.

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years later[15]. This means that Chomsky's concept of "knowledge of language" has undergone quite a complex history.

Because of this complexity of historical development of Chomsky's thoughts on language, we think that it is suitable for our purpose to examine the historical development of American linguistics from post-Bloomfieldian linguistics to the establishment of recent naturalism in generative grammar to correctly understand the nature of generative grammar as a science of knowledge and its relationship with naturalism. This is the topic of 5.1.2.

5.1.2. Generative Grammar as a Normative Science of Knowledge of Language.

To understand in what sense generative grammar is a science of knowledge of language, it is in place to clarify in what sense its predecessor, post-Bloomfieldian structural linguistics, is <u>not</u> a science of knowledge. To achieve this goal, we have to clarify the distinctive features that differentiate sciences of knowledge from other sciences in general. For the sake of convenience, let's call sciences whose proper object is not knowledge <u>non-cognitive sciences</u>. We keep the term "sciences of knowledge" and

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15. Chomsky 1975, pp.164-166.

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don't use the term "cognitive science", which already has an established referent, to avoid any confusion. After we clarify this distinction (5.1.2.1.), we examine the nature of Bloomfieldian/post-Bloomfieldian linguistics and its shortcoming (5.1.2.2.), and then we show how Chomskyan linguistics as a science of knowledge has overcome this shortcoming in the most authentic way (5.1.2.3.).

5.1.2.1. Sciences of Knowledge and Non-cognitive Sciences

First, we have to recognize that being a science of knowledge doesn't mean excluding agents' behavior from the range of the possible objects of investigation. The behavior of an agent sometimes reveals his knowledge more than his words do. Thus, any serious science of knowledge is very likely to reserve so-called operational tests as a part of its legitimate repertoire of methods of investigation, and the use of operational tests itself is not a mark that differentiates non-cognitive sciences from sciences of knowledge. What differentiates these two kinds of sciences is that a science of knowledge uses behavioral variables only as a indicator of knowledge of the agent while non-cognitive sciences investigate behaviors in themselves.

To clarify this point, think about the case of the polygraph. Suppose that this device is a relatively reliable method to detect a lie. Then, it is not the

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features of the human body themselves such as the change of blood pressure that we try to detect by this device. What we want to detect is whether an agent makes a false statement knowing that it is false. The proper object of lie-detecting is knowledge of the agent, and the features of his body such as the change of blood pressure is used as an indicator of knowledge; if there is a better indicator, e.g. brain wave, there is no necessity of measuring blood pressure at all to detect a lie. On the other hand, if a physiologist investigates the circulatory system of a patient, blood pressure is not an indicator of knowledge, but one of the fundamental properties that characterize the activity of the circulatory system. Measuring blood pressure itself constitutes a part of the investigation of the proper object of the physician. It is indispensable since the change of blood pressure is essential for the activity of the circulatory system.

Thus, with respect to the use of operational tests, what distinguishes sciences of knowledge from non-cognitive sciences is that an operational test involving behaviors or features of the body itself is used only as one indicator of knowledge of a cognitive agent in sciences of knowledge while behaviors or features of body themselves are investigated as a part of the object of investigation or fundamental properties of that object in non-cognitive sciences. Whether a behavioral science is a science of

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knowledge or a non-cognitive science depends not on whether it uses operational tests or not, but on what the operational tests are used for.

The second and most important distinctive feature of a science of knowledge is that it does and has to use genuine communication in language in our sense to know what the subject knows. This is done either by direct communication between the investigator and the subject, or through a "translator" as an agent who belongs both to the speech community of the investigator and to the speech community of the subject. This means that it is the precondition for the possibility of a science of knowledge that the investigator and his subject belong to the same community in our sense unless there exists a translator. In other words, communal knowledge shared by the investigator and the subject, with or without the mediation of a translator, is the necessary precondition for the possibility of a science of knowledge. It might be thought that operational tests may replace this method of communication, but this is not the case. Insofar as a feature is an indicator of knowledge, this feature has to be a reliable indicator of knowledge to be used in a science of knowledge, and the investigator first has to know what some subjects, including himself, really know to establish the reliability of this indicator. Think about the case of the polygraph again. If we are to seriously try to make an usable lie

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detector, we have to first know some genuine liars and measure physiological variables of them; in this process, we have to lie ourselves or to communicate with other people to know the genuine cases of lying where we experimentally measure the change of blood pressure or other features, though there is no guarantee for the success of these methods, which is why the reliability of the lie detector is still the object of controversy. In either case, we have to know what the subjects, including ourselves, know through communication or self-knowledge without operational methods to test a reliability of an operational method. On the other hand, there is no such necessity of communication or self-knowledge in the case of non-cognitive sciences since the knowledge of the subject is irrelevant or,at best, has only an auxiliary function for the purposes of investigation. When we investigate the circulatory system of a patient, we don't necessarily have to communicate with the patient in a shared language (it can be a new born baby or a mouse) since the nature of this system is independent of what the patient knows, and the investigation of this system is a non-cognitive science.

Thus, sciences of knowledge and non-cognitive sciences are sharply distinguished by these two features. Even if a science uses an operational test, if the whole process, including the process of establishing the reliability of the test, cannot dispense with the communication between

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the investigator and the subject in genuine sense, this clearly shows that this science is a science of knowledge.

5.1.2.2. Physicalism of Bloomfieldian/ Post-Bloomfieldian Linguistics and its Critique

Bloomfield's basic concept of linguistics is that it is and should be a non-cognitive science in our special sense, and the majority of his disciples who formed the so-called post-Bloomfieldian school more or less inherited this idea.[16] This group includes such linguists as B.Bloch, C.F.Hockett, and Chomsky's teacher Z.Harris. It is against the background of this post-Bloomfieldian school that Chomskyan linguistics (generative grammar) had revolutionary significance. Bloomfield's own concept of linguistics is based on a strong philosophical conviction that may be called physicalism, whose fundamental tenet is that "mentalistic" entities such as consciousness, mind, meaning, or intuition, are not the legitimate objects of any sciences. The following words of Bloomfield that are

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16. For the concise survey of this school, see Newmeyer 1986, chapter 1, "The State of American Linguistics in the Mid 1950's". For the more detailed description of the works and thoughts of main members of this school such as Bloomfield, Bloch, Hockett, and Harris, see Fischer-Jørgensen 1975, chapter 6, "The Bloomfield School".

The latter, which is written by a member of Copenhagen school led by Hjelmslev, whose idea of language is not completely different from Chomsky's, gives a description of post-Bloomfieldian from a rare position that is neither partisan on behalf of nor excessively hostile to generative grammar.

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surprisingly similar to those of our contemporary eliminative materialist P. Churchland, summarize the fundamental Bloomfieldian philosophy and methodology of science:

> Some years ago, I had the honor of addressing the Linguistic Society of America and one of the sister societies upon a prescribed subject 'Linguistics as a science'. The views which I was bound to express were shared by so few people that it seemed natural to state them in the form of prediction rather than of dogma. Linguistics as actually practiced employs only such terms as are translatable into the language of physical and biological science; in this linguistics differs from nearly all other discussion of human affairs. Within the next generations mankind will learn that only such terms are usable in any science. The terminology in which at present we try to speak of human affairs - the terminology of 'consciousness', 'mind', 'perception', 'ideas', and so on - in sum, the terminology of mentalism and animism - will be discarded, much as we have discarded Ptolemaic astronomy, and will be replaced in minor part by physiological terms and in major part by terms of linguistics.
> (Bloomfield 1936, in Katz 1985, p.19.)

Here is expressed a strong confidence that linguistics is a unique science that can deal with human affairs with the methods of natural science, and a view about the nature of linguistic categories that they are ultimately reducible to or even translatable into physical and biological categories that have nothing to do with "mentalistic" categories. In our familiar terms, it is Bloomfield's conviction that language can be naturalized without using any psychological or cognitive categories. Thus, it is

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almost an axiomatic 'fact' for Bloomfield that the object of linguistics is not "knowledge" in any sense and, because of this feature, it is a part of genuine natural science. In other words, it is almost tautological for Bloomfieldian physicalism that linguistics as a science of language cannot be a science of knowledge since "knowledge" as something distinguished from overt behaviors cannot be a legitimate object of any sciences. As a natural consequence of such a philosophical overview, the following image of linguistics emerges:

> These mechanism [of producing and reacting to utterances] are studied in physiology and, especially, in psychology. To study them in their special bearing on language, is to study the psychology of speech, linguistic psychology. In the division of scientific labor, the linguist deals only with the speech-signal... ; he is not competent to deal with problems of physiology or psychology. The findings of the linguist, who studies the speech-signal, will be all the more valuable for the psychologist if they are not distorted by any pre-possessions about psychology. We have seen that many of the older linguists ignored this; they vitiated or skimped their reports by trying to state everything in terms of psychological theory. (Bloomfield 1933, p.32.)

Thus, for Bloomfield and his students loyal to his physicalism, the proper object of linguistics is language as the totality of linguistic products separated from its production-process and underlying knowledge, and these objects are essentially physical (acoustic) objects, i.e. sound waves in themselves. A set of these products of a

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sufficiently large size is called "corpus". Of course, there is nothing contradictory or even absurd in this physicalistic characterization of linguistics. Bloomfieldians have every right to pursue such ideal of linguistics. However, the real problem emerges the moment we seriously ask how the study of purely physical objects can be the study of language within the range of ordinary sense of the word, i.e. how language can be studied without using such categories as consciousness, mind, knowledge, perception, even as a matter of purely theoretical possibility without radically and artificially changing the meaning of the word "language" so that what is actually studied is not what is usually called "language". If we have a right to define the word "language" as we like, we can call even the study of music "linguistics". The question is how Bloomfieldians can pursue their ideal of linguistics without getting into such a totally arbitrary and isolated concept of "linguistics".

One image of linguistic practice under such austere physicalism is no doubt that of the "jungle linguist" depicted in Quine's Word and Object. It is no accident that we here naturally associate Quine's thought experiment with the Bloomfieldian concept of linguistics since the former's basic idea of linguistics has its origin in the

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ideas of the latter and his disciples.[17] Putting aside the problem of indeterminacy of translation for a while, Quine's story of the jungle linguist seems to show that it is at least theoretically possible to pursue Bloomfield's radical behaviorism or physicalism in linguistics. However, if we look more closely at the nature of the linguistic objects that the jungle linguist has to face, we cannot help recognizing the philosophical and linguistic naiveté behind this story.

As the story goes, Quine's jungle linguist who attempts the radical translation of a totally unknown language faces a serious difficulty only when he tries to identify the meaning of the native word "gavagai".[18] In this story as well as in other places[19], Quine assumes that phonology and syntax can be pursued through purely behavioristic methods without any troubles comparable to that of indeterminacy of translation while there is no way to do semantics within this physicalistic framework. As is well known, the reason of this difference, according to Quine, is that there is no fact of the matter about meaning while phonological or syntactical facts are facts in the

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17. See Quine 1951, where he refers to Bloch and Bloomfield's words as the ground of his discussion on the methodology of linguistics. Also see Quine 1972. Cf. Katz 1988, p.240.

18. Quine 1960, chapter 2.

19. See Quine 1968, p.46, and Quine 1987, p.10.

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natural world. We think that there is no ground for such difference between semantics, on the one hand, and syntax and phonology, on the other hand. Syntactic and phonological categories (e.g. sentence, word, noun, verb, grammaticality, phoneme, accent, vowel, consonant) are as remote from natural or behavioral categories as semantic categories (e.g. meaningful expression, non-sense, synonymy, meaning, semantic roles) are. If there are no facts of the matter about meaning, there are no facts of matter about phonemes or grammaticality, either. The crucial difference is not between semantic categories and the rest, but between linguistic categories that are called "linguistic value" or "linguistic units" by Saussure and natural, including behavioral, categories. The concept of "phoneme" which Quine assumes is an unproblematicaly natural category was established only through the recognition of this crucial difference by Saussure and other structuralists. Quine's thesis of indeterminacy and the differentiation of semantics and other grammatical sciences is based not on the criticism or overcoming of Saussure's concept of "linguistic value" but on neglecting that concept. The naiveté of Quine and Quineans consists in this negligence. We are going to show the special nature of linguistic values, especially that of phonemes, and to criticize Quineans' naiveté in the rest of this section. We also show how Bloomfieldians, who unlike Quine

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well recognized this special nature of linguistic units, failed to reduce them to behavioral or physical categories.

When a linguist actually encounters an utterance of a language about which he has no knowledge, the first and the most difficult problem he has to face is not the identification of the meaning of uttered words or sentences, but the identification of what words or sentences were uttered, i.e. identification of the produced acoustic objects as instantiations of particular words or sentences of that language, and this seemingly trivial process presents a serious difficulty to not only imagined jungle linguists but also to actual linguists who study a language about which they have neither native knowledge nor a reliable translator because there lies the most essential problem stemming from the special nature of linguistic categories that was first clearly recognized by Saussure.[20]

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20. In a word, this special nature consists in the fact that what makes something a linguistic unit (e.g. a phoneme) is neither its intrinsic property that can be detected in isolation nor any teleological function it can perform, but its relationship with other linguistic units (values) which constitute a system of values (structure). Thus, linguistic units are distinguished from natural substantial categories like "water" or "gold" and teleological functional categories like "heart" or "weapon". What constitutes linguistic values is not what they are in themselves or what they can be used for, but how they are differentiated from each other within the system. In this respect, linguistic values have exactly the same nature as economic values. For Saussure's concepts of linguistic units (linguistic values) and their system, see Saussure 1916, English translation, pp.107-122.

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We can even say that the problem of the indeterminacy of translation is only a special case of this general problem concerning the nature of linguistic categories such as "sound unit (phoneme)", "word", "sentence", "meaning", and "speech act" which distinguishes them from ordinary natural categories such as "water","electron", and "tree".

This task of identifying what word was uttered by the native might sound trivial (and actually is assumed to cause no essential trouble to the jungle linguist by Quine[21]), but it sounds so only because we tend to think

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21. The following description of the situation of "radical translation" shows this assumption:

> What is relevant rather to our purpose is radical translation,i.e., translation of the language of a hitherto untouched people. ... I shall imagine that all help of interpreters is excluded. Incidentally I shall here ignore phonematic analysis , early though it would come in our field linguist's enterprise; for it does not affect the philosophical point I want to make.
> ... A rabbit scurries by, the native says 'Gavagai'... (Quine 1960, pp.28-29.)

Here Quine assumes that the linguist can successfully identify the acoustic object as the instantiation of the native word 'gavagai'. Such a success is really the absolute precondition for the possibility of this story of jungle linguist since he has to know whether the native is repeating the same word 'gavagai' or uttering similar but different words to determine the meaning of native words. However, this enterprise itself, as we will see, is not trivial, and, moreover, the possibility of this phonological enterprise under the framework of Quine-Bloomfieldian physicalism is not irrelevant to the problem Quine adresses here, despite his assertion that "it does not affect the philosophical point I want to make". For it is the basic nature of phoneme -- so it is claimed by most linguists -- that it cannot be defined without mentioning

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the concept of meaning or its equivalents. If this view is correct, and we think it is, the consequence of Quine's argument has to be that there are not only no facts of the matter about meaning, but also no facts of matter about the phonemic identity of utterances. In other words, the jungle linguist couldn't say whether the native said 'gavagai' or 'gavagait' since there is no fact about such identity; all he can claim is that the acoustic object with such and such physical properties was produced. If two acoustic objects are produced by the native, the linguist has to count them not as the repetition of the same word, but two different entity since all utterances are acoustically different. In a word, Quine's conclusion has to be that there are no facts of the matter about language. If one rejects the concept of 'meaning' and other 'mentalistic' categories, one cannot presuppose the identifiability of words or sentences.

To counter such a criticism, physicalists have to define the concept of 'phoneme' or 'sound unit' through purely acoustic,physiological, and behavioristic terms. Later in Word and Object, Quine offers one of such views (Quine 1960, pp.85-90.) In a word, Quine thinks that a "phoneme" is a phonetic "norm" for sounds produced in speech (ibid, p.89), and "norm" in this definition is a central value (mean or median) in statistical distribution of actually produced acoustic objects. In this section, Quine sees no problem in this definition of "phoneme", and he doesn't give the source of this idea, either. However, this type of definition is by no means benign or new. Actually, this view is almost the same as the one held by E.Zwirner in 1930's, and Zwirner's view was effectively criticized by N.Trubetzkoy (see Trubetzkoy 1936, English translation pp.6-8). The problem of such a view is that the existence of "norm" as the central value of statistical cluster of actual acoustic objects is neither necessary nor sufficient condition for the identity of phoneme. As Y.R.Chao pointed out, acoustically the same two sounds produced by the same speaker can be legitimately the instantiations of two different phonemes (Chao 1934). These two sounds have the same relationship with the "norm" in Quine's sense, but they occasionally considered as the instantiations of two different phonemes. On the other hand, what makes various acoustic objects as the instantiations of the same English sound /t/ is not their clustering around a certain central value even if we ignore variations between different individuals, since /t/ at word initial position (aspirated) and /t/ at word final position (unaspirated) constitute not one but two clusters, and, nevertheless, belong to the same phoneme. The distribution

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that the linguist performs this task in a language whose sounds are more or less familiar and recognizable for us though the meaning of words are unknown. However, it is the case only when the phonological system of the linguist's language and the native's language are similar to each other.[22] On the other hand, if the linguist's language contains only five distinct vowels like Spanish or Japanese and the native's language contains as many as fifteen distinct vowels like French, the task of identifying what word was uttered becomes impossible until the linguist first identifies what sound units that language contains. Again it might be thought that it can

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of the instantiations of a phoneme is by no means statistically normal.

What Quine here ignores or fails to recognize is the fact that the concept of 'phoneme' or 'speech sound' is constituted by its linguistic (differentiating) function, i.e. the function of differentiating the meaning of words in a particular language. Because of this function, the study of speech sounds as elements of a particular language constitute phonology which is distinguished form phonetics as the study of speech sounds as purely acoustic or physiological phenomena (see Trubetzkoy 1939, pp.10-12). It is this separation of phonology and phonetics that marks the establishment of linguistics as the science of linguistic phenomena. Unlike Quine, his fellow linguists (post-Bloomfieldians) had to directly face this problem as we will see.

Unless this problem of phonological identity (what makes an acoustic object an instantiation of a word in a langauge) is addressed, discussion surrounding "indeterminacy of translation" seems to degrade into a philosophical fiction that neglects the most essential philosophical point in the problem.

22. If Quine's concept of 'radical translation' is to be taken seriously, we have to assume radical phonological difference between linguist's langauge and native's language.

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be at least theoretically done if the linguist has a very accurate ear or has an accurate device that records all acoustic features of sounds.

However, it is this idea itself that we call naivete. To understand this naivetė, we have to think what kinds of tasks are involved in the process of identifying a sequence of sounds as an instantiation of a word in a totally unknown language.

For a linguist to identify a particular linguistic product of a language as an instantiation of "gavagai" means (1) to identify the inventory of sound units (usually called "phonemes") in that language, (2) to determine that this inventory contains the units /g/, /v/,/a/,/ai/, as distinctive from other sounds units in this inventory, and (3) to identify parts of that continuous acoustic product as instantiations of those sound units in each linguistic environment such as word initial position, word final position.[23] Thus, to identify something as an instantiation of a particular word or sentence is almost the same as to identify the whole

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23. The necessity of the consideration of such environment becomes clear if we think of the fact that the initial sound and the final sound of English word "pop" are identified as the instantiations of the same sound unit /p/ though their acoustic features are quite different. The initial /p/ is aspirated and the final /p/ isn't; these two "different" sounds are called allophones or bounded variations of the same phoneme /p/. The same phoneme usually takes different acoustic shapes in accordance with the linguistic environments it is actualized.

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phonological system of that language if the linguist has no knowledge of the phonological system of that language.

Here the most essential task is the determination of the linguistic identity and the difference of particular acoustic objects: if you hear two acoustic objects, you have to determine whether they are the repetition of the same linguistic unit ("phoneme") or the instantiations of two different sounds. This task that we perform so naturally in our own language becomes a serious task when we get into a speech community about whose language we have no knowledge. If the jungle linguist cannot be sure whether he hears the repetitions of the same word /gavagai/ or instantiations of different words such as /gavagai/, /gavagait/,/kavagai/, or /gabagai/ when he hears several sequence that sounds similar to him, he cannot make any sensible conjecture about what they mean. It might be thought again that the exact identity of acoustic features may be used as an initial criterion of the sameness of the word, but it only leads the linguist to an absurd conclusion that he never hears the same word again since virtually all utterances of the same word even by the same speaker under the same condition are acoustically different[24]. Moreover, that the exact sameness of physical features doesn't function as the criterion of two objects'

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24. It is "common sense" even for behavioristic linguists like Bloomfield. See Bloomfield 1933, p.76.

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belonging to the same category is not a special fact about linguistic category. Think about any species and pick up one object belonging to it as a standard. If we take the exact sameness of basic physical features with this standard as the criterion of belonging to this species, most natural kinds would disappear as unities.

The reason why it seems so trivial a task to identify occurrences of a word or sentence in our own language is that we already possess completed knowledge of the phonological system of our own language as a form of atheoretical knowledge so that we "hear" not acoustic noises, but words and sentences when we hear our fellow people speak even though what is produced in speech is nothing but an acoustic object.[25] On the other hand, when a jungle linguist hears the native speak, he hears only noises even if the native, on his part, say,"gavagai". It is only because we don't reflect on this fact that we know our language's phonology (the world of our language's sounds) as atheoretical knowledge that we tend to think that we hear our own language as a sequence of noises. In Quine's story, whose fundamental assumption is that the linguist has no such knowledge about the jungle language,

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25. If we try to hear utterances of our own langauge as purely acoustic objects, we inevitably recognize the existence of atheoretical knowledge of phonology of our langauge by knowing that this is almost impossible. Actually, a large part of phoneticians' training is directed to the acquisition of this special ability.

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the problem of phonological identity, i.e. what the native said, is not trivial at all.

The fundamental problem here is that of linguistic unity in a speech community, i.e. which acoustic (phonetic) difference counts as linguistically (phonologically) different and which acoustic similarity counts as linguistic identity in a speech community. Think about the two utterances of the word "dog" produced by a soprano and a bass in singing two different melodies. Acoustically, these two objects have a significant difference that everyone can recognize as such without any training. Nevertheless, this difference doesn't count as linguistic difference in the speech community of English; if we know English, we cannot help hearing them as the same word.[26] Any human beings hear them as acoustically (phonetically) two very different objects, but it is only the natives of English who hear them as linguistically (phonologically) the same entity without any inference. In other words, these two different acoustic objects have the same linguistic value[27] in the speech community of English, just

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26. See Bloomfield's similar example using the difference between English and Chinese, Bloomfield 1933, pp.76-77.

27. The concept of <u>linguistic value</u> or <u>linguistic unity</u> we are now explicating is already laid down by Saussure though in less clear way. See Saussure 1916, English translation pp. 107-122. The most fundamental nature of linguistic values is that their essence is the function of differentiating each other in a certain system (<u>ibid</u>. p.119). Though each of them has certain stable

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as ten dimes and one single bill have the same economic value in the U.S.A. though they are completely different as physical objects.

Suppose a linguist from the gavagai-country who has no knowledge of English tries to determine whether the soprano and the bass said the same word or two different words at the initial stage of his radical translation. Of course, he can extract an acoustic invariant between these two instantiations of "dog", whose mechanical identification itself is a big challenge for phonetics. However, even if the gavagai linguist completes the acoustic descriptions of these two objects through all possible acoustic variables, this itself doesn't move the linguist forward even one step. For what is to be known is not what similarities they have, but because of which similarit(ies) they come to have the same linguistic value

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physical property (e.g. the sound /a/ has certain acoustic properties), their having these properties in isolation is quite inessential for their being linguistic values. What makes them linguistic value is the fact that they have contrast with each other in the system (e.g. /a/ is /a/ in English only because it differs from /u/,/e/, and all other vowels.

Though this mutual differentiation is usually called 'linguistic function', especially by Prague school (see Trubetzkoy 1939, english translation pp.10-11), it should be never confused with teleological function in ordinary sense. In this teleological sense, linguistic values (e.g. the word "dog") has no particular function since they can be used in indefinitely many purposes (you can use the word "dog" as a part of order, description, or a name of your play, store, a secret code for a certain association, and so on). Thus, when Prague school is described as functionalism, it doesn't mean that they have the tendency to biological functionalism like that of Ruth Millikan.

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in the speech community of English and natives recognize them as the instantiation of the same linguistic entity "dog". If the linguist has an access to native knowledge of phonology of English (i.e. can recognize instantiations of a same English sound as same and instantiations of different English sounds as different however acoustically similar or different they may sound) either by being himself a speaker of English or by having the mediation of a translator, this process of linguistic identification is quite trivial; he just has to hear what is said or ask the translator what is said. However, if the linguist denies himself such an access, or even the legitimacy of the use of native knowledge for this identification in one way or another, i.e. the possibility of the use of communication in native knowledge, as Quine does, the task becomes almost hopeless. Again, it might be thought that the gavagai linguist can use the behavioral patterns of the English natives for this identification, but we have to remember that our linguist is facing this problem exactly in the middle of the attempt to apply this behavioral method for pairing a word and an object. What can be a behavioral criteria of repeating the same sound /e/ rather than uttering two different sounds /e/ and /i/? We can't say that they sound different or that the native moves his vocal organ differently. In a sense every particular occurrence of a linguistic object is different. What has

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to be known is which difference counts in the world of English. Even if the gavagai linguist recognizes the behavioral difference or similarity between the soprano and the bass, he has to know whether that difference or similarity is linguistically significant or just a personal habit or a social convention that has no linguistic significance. There seems to be none since the same word or same sound can occur in so many different environments and with different movements of vocal organs. Of course, if the linguist and the native are in an experimental setting at a department of linguistics, there is an abundance of behavioral clues for this phonological identity. However, we have to think about how much has to be assumed or agreed through genuine communication in common language for these two people to cooperate at a linguistics lab. You simply cannot make any significant experiment on a subject about whom you know nothing since there are indefinitely many hidden variables that forbid you drawing any significant conclusion from the experiment.

If someone thinks at this point that Quine's "procedure of query and assent"[28] makes the task at least theoretically feasible, we have to say that this shows another naiveté. That this procedure is used in such a Quinean project presumably means that the categories of

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28. Quine 1974, p.15.

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"query","assent", and "dissent" are thought of as non-linguistic biological categories based on the fundamental uniformity of the behavioral patterns of biological organisms in general. However, a moment's reflection would reveal that they are actually the categories of different types of action we can perform in speaking (speech acts with specific contents), namely, they are the categories belonging to knowledge of language. For such a method to be used successfully by the linguist, the linguist and the native have to share some knowledge about what each other tries to do and what each other knows. For a linguist to be able to identify some body movement of the native as a sign of assent means that he and the native already know non-trivial amount about each other's intentions, beliefs, and modes of their expressions so that the linguist can assume that his previous act was correctly taken as a question about the meaning of a jungle-word. Of course, a dog may show a willingness to follow or to resist following our will. However, what has to be "queried" in the Quinean project is not whether the native is willing to follow the linguist's will or not, but whether a particular word refers to a particular object or not, or whether two acoustic objects are the instantiations of one word or two similar but different words. Such a query can be done only under minimum common knowledge of the same language; it cannot be done between a human being and a dog even if dogs

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actually possess their own language unless we know their language or they know our language or there is a translator between us and dogs. Even if a linguist finds some clue in the body movement of the native, to understand that as a sign of assent means to take that as an indicator, though relatively poor, of the knowledge. If a linguist is allowed to use such an indicator of knowledge in the Quinean project and use native's knowledge as his "data", there seems to be nothing that prevents the linguist from fully learning the native's language to have more comprehensive knowledge of that language by living together with them to judge whether "gavagai" means "rabbit","rabbit stage", "undetached parts of rabbit" or none of them. Actually this is not an uncommon thing among anthropological linguists. If the linguist is allowed access to native knowledge either by learning the language or hiring a translator, all the problems Quine poses lose their substance though this doesn't mean that a bilingual of English and that jungle language always can find a good translation for the word "gavagai", but this is a completely different issue. By using "the procedure of query and assent", the Quinean linguist already uses his knowledge of the jungle language/culture shared with the native. If he is really loyal to his philosophical conviction of radical behaviorism, he should call such a hidden use of common knowledge a self-deception. If he

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allows the use of native knowledge possessed by the linguist for this procedure but not any more, we have to call it a double standard.[29] If a Quinean ,at this point, thinks about the way out by means of the concept of "face value", it has to be remembered that the "face value" of linguistic product is its acoustic value insofar as we are denied the access to native knowledge of language, just as the face value of one dollar bill for a person who knows nothing about the monetary system of^R

the United States or English is a small rectangle sheet of

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29. As we remarked above, the problem we raise here against a pure physicalistic linguistics has its root not in a special nature of "meaning", but in the general nature of linguistic values (categories) that their ultimate source is native knowledge of langauge. This means that if the fact that semantic facts are not determined by fixing all physical facts implies the non-existence of semantic fact, it also has to imply that there are no syntactic or phonological facts. The basic point is this: if we are allowed to use native knowledge, there is no indeterminacy of translation in Quine's sense; on the other hand, if we are denied any access to native knowledge of language, including our own, there is no way to fix syntactic or phonological facts as we will see below.

Chomsky points out that Quine's indeterminacy argument also applies to syntax as early as 1964 (see Chomsky 1964, p.58). Against this accusation, Quine recently replies by saying "I see grammaticality, unlike translation, as adequately determined by behavioral dispositions." (Quine 1987, p.10). If Quine means by "behavioral dispositions" some reaction of strangeness to an utterance, he has to devise a method of differentiating pragmatic anomaly, semantic anomaly, syntactic anomaly, and phonological anomaly since a native may express the sense of strangeness for any of them. It is easy, of course, if we use shared native knowledge and communicate with him, but it is not clear at all how it can be done through external observation that is prohibited any use of shared native knowledge. At least Quine gives no argument or explanation for this point.

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paper with strange letters and pictures in green.[30] Quine's setting of radical translation is totally arbitrary.

Next, think about the nature of linguistic units (values) and their mutually differentiating function (linguistic function) which were first recognized by Saussure and was emphasized by the Prague school. In the phonological system of English, /r/ sound and /l/ sound have distinctive linguistic values so that the alternation

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30. Quine seems to think that in practice an utterance can have "face value" other than its acoustic value even under his austere physicalism which negates the validity of native knowledge as the object or the means of science. Quine 1968, p.49. He writes as follows:

> And in practice we end the regress of background languages, in discussions of reference, by acquiescing in our mother tongue and taking its words at face value. (Quine 1968, p.49)

Here Quine seems to think that "practice" is given independently of native knowledge, and words can have their non-acoustic face values in practice without our relying on our native knowledge of language. This shows Quine's strange pragmatism which is based on the sharp distinction between "theory" and "practice and that smuggles every thing that cannot be given by his austere physicalistic "theory" into "practice" as if it is "given". This is another myth of "given": "given" of "practice". Such a view of practice is a fiction. What Quine calls "practice" is based on knowledge, native knowledge. If we don't know what economic value is, we cannot distinguish a sheet of paper with strange letters printed in green and a one dollar bill: we cannot <u>use</u> one dollar bill. If we don't know what "rabbit" means, we cannot use this word in practice, either. Where there is no knowledge of language, there is no linguistic practice. If we can have knowledge of language, there is no Quinean indeterminacy of translation.

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among them has the potentiality of changing one word into another as between "red" and "led". This means that a speaker of English has the potentiality and necessity of changing the meaning of his utterance by changing the acoustic feature of his products in accordance with the difference between /r/ and /l/. A part of learning English as a native means to becoming able to produce and recognize this difference. However, if the same speaker alternates these two sounds in communication in Japanese, his alternation will make no linguistic difference. For /r/ and /l/ are not different linguistic units in Japanese phonology (the world of Japanese sounds). There are and can be no pairs of Japanese words whose difference is that between /r/ and /l/, and people whose first language is Japanese usually have no ability to recognize these two sounds as different sounds not because of the deficiency of their audio system, but because of this feature of their language. Thus, if a English speaker says /yolu/ in communication in Japanese, it can be taken only as /yoru/, which means "night" or "come close to" in Japanese. Thus, that two sounds are different linguistic units in a language consists in two related facts: (1) different linguistic units have the potentiality of changing the meaning of the larger linguistic unit whose part they are by alternating with each other (i.e. the linguistic function = the units' function of differentiating each

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other in the system, which the pair of /r/ and /l/ has in English, but not in Japanese)[31] , (2) natives recognize (or, perceive or hear in a cognitive sense) them as different linguistic entities.[32] Both of them are the

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31. See Saussure 1916, English translation, pp.117-120, and Trubetzkoy 1939, English translation, p.10.

32. That natives' recognition or perception is essential for the identity and difference of linguistic units in their langauge was already emphasized by Sapir:

> In the physical world the naive speaker and hearer actualize and are sensitive to sounds, but what they feel themselves to be pronouncing and hearing are 'phonemes'. They order the fundamental elements of linguistic experience into functionary and aesthetically determinate shapes, each of which is carved out by its exclusive laws of relationship within the complex total of all possible sound relationships. To the native speaker and hearer, sounds (i.e. phonemes) do not differ as five-inch or six-inch entities differ, but as clubs and poles differ. If the phonetician discovers in the flow of actual speech something that is neither 'club' nor 'pole' , he, as phonetician, has the right to set up a 'halfway between club and pole ' entity. Functionally, however, such an entity is a fiction, and the native speaker or hearer is not only driven by its relational behavior to classify it as a 'club' or a 'pole', but actually hears and feels it to be such. (Sapir 1933, in Katz 1985, p.66.)

Here the term "functional", of course, has to be taken not as "teleologically functional", but as "linguistically functional", i.e. as meaning "having the function of differentiating each other". Sapir's view of langauge was called "mentalism" by Bloomfieldians, and if we consider the fact that he titled this paper "La Realite Psychologique des Phonemes", this terminology cannot be said to be inaccurate. However, his concept of "psychological reality" explicated in this paper has nothing to do with causal mechanism of perception as this term is interpreted in contemporary literature (e.g. see Fodor,Fodor, and Garrett 1975). Sapir's concept of "psychological reality" should be interpreted as "reality

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reflections of a more fundamental fact that it is part of native knowledge of this language that they are two different linguistic units. Thus, the concepts of sound units (phonological values), meaning (linguistic values of larger units such as sentences or words), and native knowledge of language are interwoven with each other.

Thus, there is a fundamental conflict between Bloomfieldian (and Quinean) physicalism that denies the legitimacy of native knowledge of language as both the proper object of linguistics and its means, on the one hand, and the very project of studying language on the other. In a sense, the entire theoretical effort of the post-Bloomfieldians was devoted to the solution of this conflict through an establishment of an operational procedure that guarantees the linguistic description of utterances at such levels as phoneme, word, phrase, or sentence, from purely physical data without relying on native knowledge or such

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recognized in the manifestation of native knowledge of a system of values". That something,e.g. a sound, is psychologically real for a native in this sense means that he can locate this sound in the system of values because of his native knowledge of language and understand this sound as a significant entity in his speech community. In this sense, the difference of /l/ and /r/ is psychologically real for a native of English, but is not so for a native of Japanese. The difference between /a/ of a soprano and /a/ of a bass is not psychologically real in this sense though any person can recognize this difference, since their difference has no place in the system of linguistic values of English, and, therefore, is not significant in a speech community.

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mentalistic concepts as meaning, or consciousness. That they are quite hopeless has already become clear through the above explication, and the actual attempts by post-Bloomfieldians are also series of unsuccessful ones. The result was that there was always sharp discrepancy between theory and practice[33] in post-Bloomfieldian linguistics, which eventually became the soil for the Chomskyan revolution. Before moving to the characterization of Chomskyan linguistics as a science of knowledge, let's quickly review the efforts by post-Bloomfieldians.

As is indicated by the discussion above, it is only the explicit recognition of the mutually-differentiating function of linguistic categories pointed out first by Saussure (1916) that makes systematic theoretical description of linguistic phenomena in various languages possible since mere physical description of an utterance without consideration of linguistic significance of physical features in a particular language doesn't yield any description of linguistic phenomena. Any linguistically significant description of English has to make it explicit that /red/ and /led/ have distinct linguistic values in English because of the specific organization of phonological units in English (/r/ and /l/ are distinctive units), and any significant description of

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33. See Newmeyer 1986, pp.14-15.

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Japanese has to make it explicit that /yoru/ and /yolu/ cannot have any distinct linguistic values in Japanese because of the specific organization of phonological units of Japanese (/r/ and /l/ are not distinctive units). It is in the field of phonology that such recognition was achieved for the first time, and, consequently, phonology was established as the first objective science of linguistic phenomena at several centers virtually independently around the late 1920' to mid 1930's, partly as the result of the dissemination of Saussure's idea.[34] In this process it is the concepts of "phoneme" as the

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34. These centers (and their most prominent figures) include the United States (L.Bloomfield and E.Sapir), London (D. Jones), Prague (R.Jakobson and N.Trubetzkoy), , and Copenhagen (L.Hjelmslev and H.J.Uldall). The earliest, though not the most comprehensive, documents for each center that indicate the establishment of basic phonological concepts such as "phoneme", "speech sound", "sound system", "distinctive opposition", and "contrast", are the following.

E. Sapir 1925: "Sound Patterns in Language".

L.Bloomfield 1926: "A Set of Postulates for the Science of Language"

D.Jones 1929: "Definition of a Phoneme".

Linguistic Circle of Prague 1931: "Projet de terminologie phonologique standarisée"

L.Hjelmslev 1936: "On the principles of phonematics".

Among these places, the United States has to be regarded as comprising two rather than a single centers since the activities of Bloomfield and Sapir were virtually independent and their basic ideas of linguistics are quite different. As for the relationship between them, see Bloomfield 1922, in Hockett 1987, and the attached note.

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smallest distinctive linguistic unit and other related concepts such as "distinctive opposition","phonological opposition", or "contrast" that played the most central role in this development of phonology.[35]

As remarked above, a phoneme is a phoneme of a language because it forms a distinctive (phonological or linguistic) opposition with all other members of the system of sounds of the language, and because of this opposition the alternation between two phonemes at a certain position in a sentence or a word of the language has the potentiality of changing the meaning of the utterance or making the whole utterance non-sense. Moreover, phonemes have to be recognized as such by the natives. Therefore, there exists an essential connection between the concept of phonemes as the smallest linguistic units, on the one hand, and such concepts as linguistic meaning or recognition by natives on the other. Phonology is, thus, not simply a study of sounds as acoustic objects as such, but a study of sounds insofar as they have the potentiality of conveying and differentiating meanings for natives. This relationship between "phoneme" and "meaning" is widely recognized as such by many phonological schools, and the strong physicalism (anti-mentalism) exhibited by Bloomfield in 1936 that tries to avoid the use of the concept of

35. For the pre-history of the concept of "phoneme" before this period, see Fischer-Jørgensen 1975, chapter 2, and Kramsky 1974.

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meaning in phonology is really exceptional among these schools of linguistics.

For example, the Prague school defines "phonological opposition" as "différence phonique susceptible de servir dans une language donne à la differenciation des significations intellectuelles"[36] [phonetic difference that is capable of playing the function of differentiating intellectual meanings in a given language], and this concept of phonological opposition leads Trubetzkoy to the conclusion that phonology is a part of the humanities while phonetics is a part of natural sciences.[37] In the Unites States, E.Sapir repeatedly emphasized the essential connection between phonemic identity of sounds and natives' recognition of the same linguistic value against the definability of phonemes through purely physicalistic features.[38] Even Bloomfield himself gave the following characterization of phoneme that essentially depends on the concept of <u>meaning</u> in 1933 when his position was already materialism[39] or physicalism:

> Evidently the working of language is due to a resemblance between successive utterances.

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36. Linguistic Circle of Prague 1931, p.311.

37. Trubetzkoy 1936, pp.4,12.

38. Sapir 1925, pp.40, 47-48, Sapir 1933, in Katz 1985, p.66.

39. See Bloomfield 1933, p.33.

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> Utterances which in ordinary life we describe as consisting of "the same" speech-forms - say, successive utterances of the sentence I'm hungry - evidently contain some constant features of sound-wave, common to all utterances of this "same" speech-form. Only on this assumption can we account for our ordinary use of language. The phonetician, however, cannot make sure of these constant features, as long as he ignores the meaning of what is said. Suppose, for instance, that he had records of an utterance which we could identify as representing the syllable man, spoken on two different pitch-schemes. If the language of these utterances were English, we should say that both contained the same speech-form, namely the word man, but if the language were Chinese, the two records might represent two different speech-forms, since in Chinese differences of pitch-scheme are connected with different meaning... (Bloomfield 1933, p.77.)
>
> Once we have defined the phonemes as the smallest units which make a difference in meaning, we can usually define each individual phoneme according to the part it plays in the structural pattern of the speech-forms. (Ibid., p.136.)

Against such a background of their predecessors, who were not anti-mentalists at all, as in the case of the European structuralists and Sapir, or were theoretically anti-mentalist but practically mentalist, as in the case of Bloomfield, the post-Bloomfieldians tried to eliminate mentalistic elements from Bloomfield's definition of phoneme based on the concept of meaning.

Because of the fear of "mentalism", their attention comes to be exclusively directed to linguistic products in themselves, and native speakers' knowledge of language was considered, at most, as a secondary source of information. The corpus (a certain collection of utterances of a

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language) becomes the primary object of linguistics. Linguistics becomes a science of linguistic products. This type of linguistics comes to be called "descriptive linguistics":

> Investigation in descriptive linguistics consists of recording utterances in a single dialect and analyzing the recorded material. The stock of recorded utterances constitutes the corpus of data, and the analysis which is made of it is a compact description of the distribution of elements within it.
>
> To persons interested in linguistic results, the analysis of a particular corpus becomes of interest only if it is virtually identical with the analysis which would be obtained in like manner from any other sufficiently large corpus of material taken in the same dialect. If it is, we can predict the relations among elements in any other corpus of the language on the basis of the relations found in our analyzed corpus. When this is the case, the analyzed corpus can be regarded as a descriptive sample of the language. (Harris 1963, pp.12-13.)

Methodologically post-Bloomfieldians' efforts were concentrated on devising more objective operational tests for identifying phonological units out of the corpus and more materialistic definitions of "phoneme" or "contrast" that are as independent of any mentalistic concepts as possible.

Among such post-Bloomfieldian operational tests that were devised to realize this materialistic ideal in linguistics, Z.Harris's "paired utterance test"[40] is often

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40. Harris 1963, pp.32-33.

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considered as one of the most accurate operational tests.[41] It consists in the following procedure:

> A more exact test is possible when we wish to find out if two utterances are repetitions of each other, i.e. equivalent in all their segments (homonyms) e.g. She's just fainting as against She's just feigning. We ask two informants to say these to each other several times, telling one informant which to say (identifying it by some translation or other wise) and seeing if the other can guess which he said. (Harris 1961,p.32.)

Can we consider this test as the realization of Bloomfield's physicalism or behaviorism in linguistic practice? It is true that this test itself doesn't use the concept of meaning at all. However, if we think about what this test does and what is detected by this test, it is obvious that this test is not based on physicalism or behaviorism as a fundamental view of language. In other words, what Harris tries to detect by means of this test is not a physical feature of these utterances or behaviors of natives at all. Through this test, the linguist asks the native whether the latter perceives or recognizes two utterances as linguistically the same or not. The linguist asks this only of the natives of the target language, not of other people. Why? The reason is simple. The linguist asks the natives for the recognition of identity and difference of speech sounds because their recognition is

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41. See Chomsky 1955, pp.34, 91.

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the manifestation of their native knowledge of the phonological system of their own language, which constitutes the ultimate object of linguistics. Otherwise, to ask natives this has no more significance than to ask them their political opinions or personal taste. Thus, even Harris's most "exact" operational test is a test whose object is natives' knowledge of language. This fact itself doesn't diminish the value of this test at all, but should disabuse us of the idea that linguistics can be cleansed of any "mentalistic" or cognitive concepts such as "meaning" or "native's recognition" through operational tests like Harris's so that linguistics becomes a science about physical objects.

As for the post-Bloomfieldians' definitions of phoneme which were intended to physicalize this concept, the majority of them explicitly use the concept of "recognition of native speakers" or other concepts related to the manifestation of native's knowledge, and this reveals the fact that their linguistics, actually any type of linguistics, investigates nothing but the knowledge of native speakers through its manifestation in actual judgments at the most fundamental level of study.[42] Thus, even though these post-Bloomfieldians subjectively thought that their linguistics is an objective natural science that

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42. For the contents and the criticism of these definitions, see Fischer-Jørgensen 1956, pp.143-145.

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deals with physical objects and people's overt behaviors, their concept of phonological unit makes sense only under the idea that what linguists study is not physical objects and their nature, but natives' knowledge of language. In physics or biology, there are no natives whose judgments give the ultimate ground for determining the fundamental units of these sciences.

The only exception to such virtual abandonment of physicalism in linguistics was Bernard Bloch at Yale University. It is safe to say that Bloch is the most radical physicalist among post-Bloomfieldians; he really tried to physicalize phonology along the line prescribed by Bloomfield. His first attempt to formulate a radically physicalistic definition of phoneme and phonological opposition that uses neither the concept of "meaning" nor that of "recognition of natives" in 1948[43] was heavily criticized by may linguists, and he himself acknowledged the shortcomings of his physicalistic definition.[44] His final attempt was made in 1953[45], and this definition itself seems to successfully capture an important aspect of the concepts of phoneme and phonological opposition.

However, as Fischer-Jørgensen demonstrates, this

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43. Bloch 1948.

44. Bloch 1953, p.59.

45. Bloch 1953. We cannot here get into the details of his definition which is too technical for our present purpose.

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definition uses the concept of "linguistic environment" as its essential ingredient, and this concept raises the question about whether Bloch's definition is really physicalistic or not.[46] This concept of "linguistic environment" refers to particular settings in which each speech sound appears in linguistic expressions. For example, /t/ in "top" appears in the environment of word-initial while /t/ in "cat" appears in the environment of word-final, and these two /t/'s have significant phonetic difference because of their different environments. (/t/'s at word-initial position are usually aspirated while those at word-final position are not aspirated in English). Or, two sounds /a/ and /i/ in instances of "pat" and "pit" are said to have the same environment, namely /p_t/. They are called linguistic environments insofar as their identity and difference have significance for phonological facts and laws.

As these examples already indicate, the concept of linguistic environment has essentially the same nature as that of phoneme or phonological opposition, namely, what constitutes the identity of a linguistic environment is not an acoustic property that is based on a unity of physical objects or vocal organs, but its linguistic function (i.e. function of differentiating each other in a language). Thus, the environment of word-initial doesn't mean that a

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46. Fischer-Jørgensen 1956, p.145.

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position is preceded by a certain duration of silence, but that the position counts as the beginning of a linguistic unit word. This means that we cannot define the environment "word-initial position" unless we define what constitutes a word in a particular language, and we have to refer to the identity of speech sounds to define what constitutes the identity of a word. The identity of linguistic environment (what makes two acoustic environments as repetitions of the same linguistic environment) is not independent of other linguistic units such as phonemes, words, and sentences.[47] Linguistic environment is nothing but another species of linguistic unit whose essence consists in their differentiation from each other. Therefore, Bloch's second definition also doesn't succeed in physicalizing the concept of linguistic sound units by eliminating all references to "mentalistic" concepts.

Thus, we can safely conclude that post-Bloomfieldians, who had a strong physicalistic philosophy, failed to show even the theoretical possibility of constructing physicalistic and non-cognitive linguistics,[48] let alone their actual linguistic practice. The basic problem for

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47. Ibid., p.146.

48. Many of these definitions that are intended to be physicalistic were not suggested as practically applicable methods in post-Bloomfieldian linguistics. The main point of these definitions is to show that theoretically linguistic categories are reduced to physical categories.

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physicalism in linguistics is that even the concept of "sounds of a language", which is supposed to be the most basic and materialistic category in linguistics, can be defined only though its function of differentiating the linguistic values of higher units (words) in a speech community.

Naive Quinean behaviorism/physicalism that tries to reduce the "meaning" of an utterance to the stimuli and the response nomologically connected with that utterance is not applicable for linguistic phenomena straightforwardly since we cannot define "utterances", "verbal behavior", or "verbal response", by behavioristic or acoustic categories which cannot distinguish speech sounds from noises or speech from howl. A sequence of sound waves produced by an organism is a verbal response only when it is identified as an instantiation of a certain speech act and is articulated into linguistic units such as sentences, words, and speech sound (phoneme). Since the latter cannot be identified without referring to native knowledge of language, verbal behaviors or verbal responses are by no means physically given phenomena prior to the introduction of linguistic categories.

The Bloomfieldian/post-Bloomfieldian physicalistic ideal of linguistics as well as its philosophical adaptation by Quine is so radically against the very nature of language it claims to study that it is necessary that

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there is huge discrepancy between actual linguistic practice of post-Bloomfieldians and their physicalistic ideology. This conflict is going to be solved by Chomsky's abolition of the latter. The real revolutionary element of Chomskyan linguistics consists in its recognition that the proper object of linguistics cannot be anything but knowledge of language.

5.1.2.3. Generative Grammar as a Science of Knowledge of Language

It is by no means the case that the fundamental nature of generative grammar[49] as a science of knowledge has been explicitly formulated as such in Chomsky's earliest works in the 1950's and early 1960's. In these works a generative grammar of a particular language is rather defined in purely formal and mathematical terms as the

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49. The term "generative grammar" is used at two different but related levels. On the one hand, it means a concept of linguistics. In this sense, "generative grammar" is a name of whole discipline whose goal is description and explanation of knowledge of language. For example, when Chomsky says, "Generative grammar, in contrast, is concerned primarily with the intelligence of the reader, the principles and procedures brought to bear to attain full knowledge of a language" (Chomsky 1986, p.7), the term "generative grammar" is used in this sense.
On the other hand, it means a particular grammar of a language constructed within this discipline. When Chomsky says," by a generative grammar I mean simply a system of rules that in some explicit and well-defined way assigns structural descriptions to sentences" (Chomsky 1965, p.8), the term is used in this narrower sense.
As far as the context clarifies the meaning, we use it without any disambiguating comments.

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following passages indicate:

> The grammar of L will thus be a device that generates all of the grammatical sequences of L and none of the ungrammatical sequences. (Chomsky 1957, p.13.)
>
> A generative grammar is a system of explicit rules that assign to each sequence of phones, whether of the observed corpus or not, a structural description that contains all information about how this sequence of phones is represented on each of the several linguistic levels - in particular, information as to whether this sequence of phones is a properly formed or grammatical sentence and if not, in what respects it deviates from well-formedness.
> (Chomsky 1961, pp.220-221.)

A generative grammar in this sense is a formal and abstract theory that defines the extension of a set which is the collection of sentences of a language together with their structural descriptions. Of course, this definition of generative grammar is not a purely mathematical one since its definition contains the reference to a particular language.[50] A generative grammar even in this formal definition cannot be a formal characterization of an arbitrary set of strings of symbols; in this respect a generative grammar thus defined is not a part of mathematical linguistics, but of linguistics as a science of natural languages.[51] However, the concept of language

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50. See Chomsky 1965, p.208 note. 36.

51. Grammar in mathematical linguistics can be the characterization of any set of strings of symbols. For example, a set that contains all mirror-image strings of "a" and "b" such as "aabb", "aabbabbaa", is considered as a

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itself is defined quite extensionally --(without any mention of the knowledge of a speaker)-- as a set (finite or infinite) of sentences.[52] Under such a definition of "generative grammar", the concept of "generation", contrary to its connotation, has nothing to do with the actual generation of sentences by a speaker in an actual speech event, and has only a formal and mathematical meaning such that a set of rules generates a set.[53] As a consequence of this formal concept of "generative grammar", the most prominent difference between generative grammar and post-Bloomfieldian linguistics is that while the former takes the sets corresponding to languages as infinite and

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language in mathematical linguistics, and a set of rules that define this set becomes the grammar of this language. The difference between linguistics and mathematics is that not every well-defined set of strings is a langauge in the linguistic sense.

52. Chomsky 1957, p.13.

53. This formal sense of "generate" is carried over even to the period when the concept of generative grammar is defined in terms of knowledge of language. See Chomsky 1965, p.9.

For one justification of this formal concept of "generate" Chomsky cites Humboldt's concept of "erzeugen"/"Erzeugung" (Chomsky 1965, p.9, Chomsky 1966, p.19). However, such an interpretation of Humboldt is highly problematic since Humboldt's primary concern is actual speaking activity of individuals belonging to an ethnic group (e.g. Greek). The most interesting part of Humboldt's thoughts on language is about how universal and stable character of a language and individuals act of speaking as the articulation of thoughts and feelings interact each other (cf. Humboldt 1836, section 20). Chomskyan formal concept of "generation" has little room in such thinking.

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recursive or recursively enumerable[54], the latter takes them to be basically finite. Similarly, under this formal definition of generative grammar the concept of "creativity of language" that Chomsky so strongly emphasizes becomes contaminated with formalism so that it is unclear whether at the stage of Aspects he means by this concept just the formal nature of language as a set of sentences (being recursive or being recursively enumerable) or the indeterminate (free) nature of actual speech activity.[55]

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54. A set's being recursive means that there is a finite decision procedure that determine whether a given object belongs to this set or not. A set's being recursively enumerable means that this set corresponds to the domain of a recursive function. In other words, if there is an effective way to generate all members of a set, the set is recursively enumerable.

55. As for the texts that suggest formal interpretation of "creativity of language", see Chomsky 1964, p.22, Chomsky 1965, pp.8, 15-16. As for his explicit denial of a formal interpretation against this allegation, see Chomsky 1972, viii. See also Chomsky 1975, p.138. Gilbert Harman complains about this discrepancy, see Harman 1973, in Harman (ed.) 1982, p.202 note.1.

Later Chomsky calls this (non-formal) creative aspect of language the "Cartesian problem" (Chomsky 1986, pp.222-223).

This duality is nothing but one appearance of the conflict between a formal view of language (language as a formal system of rules) and a cognitive and realistic view of language (language as a normative entity known by concrete people) in Chomskyan thought on language. This duality, which makes many fundamental concepts of generative grammar such as "generate" (formal or actual), "creative" (formal or actual),"explanation" (logical or causal), inherently ambiguous, persists even after the concept of generative grammar as a science of knowledge came to be emphasized. It is only within the recent theoretical framework (G.B.) with its strong naturalism that Chomsky seems to decisively depart from the formalistic view of langauge.

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Thus, we have to say that the real nature of generative grammar unmistakably recognized in 1986[56] is not yet clearly recognized or emphasized at the early stage of its history. Considering such a situation, the idea that the essence of generative grammar consists in its formalism cannot be simply called an error.

This inadequate characterization of generative grammar in the 1950's through the early 1960's is also reflected in the way Chomsky characterizes the difference between his vision of linguistics and post-Bloomfieldian linguistics. We already know that this difference is recognized as the one between linguistics whose object is language as products and linguistics whose object is knowledge of language in 1986. However, at this earlier stage this difference is understood rather as the difference between two methods or two types of data: one is a method that admits only observable utterances as the legitimate data in linguistics, and the other is a method that also admits native speakers' intuition as legitimate data.[57] As a

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56. See Chomsky 1986, pp.6-7.

57. Chomsky 1961, pp.225-226. The way Chomsky describes the relationship between his vision of linguistics and post-Bloomfieldian linguistics varies from one work to another. In Logical Structure, he uses the word "descriptive linguistics" to describe his theory though it is substantially different (Chomsky 1955, p.77). In Syntactic Structures, he characterizes the difference as the methodological difference between the stronger requirement of "decision procedure" in post-Bloomfieldian and the weaker requirement of "evaluation measure" in "transformation approach" (Chomsky 1957,pp.51-52.). In

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description of the difference between these two schools of linguistics, it is not an incorrect one; as a matter of actual theoretical practice, generative linguists extensively use their own linguistic intuition as factual ground while post-Bloomfieldians prohibited such a practice to themselves. However, that it is inadequate for the characterization of the difference between these two schools becomes clear if we ask why they use these different methods. This description gives us no answer. If the difference of these two methods is simply that of relative efficacy, then there is little theoretical, much less philosophical, interest in this problem; we can just let two methods compete in the "market".

Actually the issue between generative linguistics and post-Bloomfieldian linguistics cannot be such a practical and methodological one since there is no common standard by which we can evaluate the relative efficacy of their methods, because these methods contain within themselves different standards for "fact". From the Chomskyan point of view, post-Bloomfieldian linguistics is hopelessly inadequate since it misses a great amount of significant

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Current Issues, he characterizes post-Bloomfieldian linguistics as "taxonomic model", or "procedural and descriptive approach". (Chomsky 1964, p.11).

The common view that underlies these characterizations is that the difference is essentially methodological.

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linguistic "facts" because of limited methodology.[58] However, from the post-Bloomfieldian point of view, these "facts" are not facts at all since they are based on "mentalistic" concepts that cannot be a part of the objective world.[59] This means that their difference has a deeper root than a methodology, and this root is nothing less than the ontology of language itself, namely the answer to the question, what constitutes the linguistic facts to be described in linguistics.[60]

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58. See Chomsky 1961, pp.219-220, Chomsky 1964, pp.34-35.

59. For the different views of objectivity in linguistics, cf. Hill 1961.

60. Thus, we think that Chomsky's extensive criticism of post-Bloomfieldian linguistics in chapter 2 of Current Issues in Linguistic Theory is inadequate since it is based on the concept of adequacy specific to generative grammar, namely descriptive adequacy as grammar's conformity with a native speaker's intuition and explanatory adequacy as grammar's explanatory power for language acquisition. There is no way to argue that these two criteria have to be observed by any grammatical theory if post-Bloomfieldians claim that these two things (native speaker's intuition and the process of language acquisition) are facts about human psychology, and thus, don't constitute facts about language without begging the question.

On the other hand, his criticism in chapter 3 of Current Issues is very effective since it criticizes the most basic concepts or postulates of post-Bloomfieldian linguistics ("linearity","invariance","biuniqueness", and "local determinacy" Chomsky 1964, p.78) by showing their untenability in actual linguistic practice. These postulates are deeply related to post-Bloomfieldian physicalism.

Our criticism of post-Bloomfieldianism consists in showing that the concept of language that excludes the concept of knowledge leads linguists to the denial of the reality of linguistic phenomena or to a sharp discrepancy between theory and practice in linguistics.

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It is in two major books in the mid-1960's that the concept of generative grammar is explicitly defined as a theoretical representation of a native speaker's knowledge of language with the introduction of "competence" as a semi-technical term for knowledge of language. The concept of generative grammar as a science of knowledge that existed only tacitly in the earliest stage of its history [61] now gets a clear expression:

> A grammar of a language purports to be a description of the ideal speaker-hearer's intrinsic competence. If the grammar is, furthermore, perfectly explicit- in other words, if it does not rely on the intelligence of the understanding reader but rather

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61. As for the earlier expression of this idea that the goal of linguistics is the description and explanation of the knowledge of native speakers, see Chomsky 1955, pp.61-63, Chomsky 1957, p.13, Chomsky 1960,in Nagel et.al eds. p.531, and Chomsky 1961, p.222.

Thus, the major difference between these earlier and less decisive formulations of the idea of generative grammar as a science of knowledge and those in the mid-1960's is that Chomsky still didn't have any fixed terminology that expresses the concept of knowledge of language.

For example, compare the following expression with that of Aspects. " The formalized grammar is intended to be a characterization of certain of the abilities of the mature speaker" (Chomsky 1960, in Nagel et. al. eds. 1962, p.531).

The idea that grammar is a theoretical representation of knowledge has existed since the earliest stage; what prevented Chomsky from formulating this idea explicitly for a while is the special nature of knowledge of langauge (native knowledge in our sense) that is beyond the scope of traditional epistemology or Rylian dispositionism. It is only when he fixed this concept by using the term "competence" that he unconditionally expressed the concept of generative grammar as a science of knowledge, though the term "competence" still implies Chomsky's avoidance of the problem of knowledge in a purely cognitive sense.

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> provides an explicit analysis of his contribution - we may .. call it a generative grammar. (Chomsky 1965, p.4[62].)

After establishing the concept of generative grammar as a science of knowledge of language in this way, Chomsky's concept of "knowledge of language" has evolved and gotten refined further. The very clear statement we quoted at the beginning of 4.2 is a product of this process. Now that we see what the essence of generative grammar as a linguistic discipline is, our next important task is to understand the exact content of "knowledge of language" in Chomsky's philosophy of language.

5.1.3. The Nature of the Chomskyan Concept of Knowledge of Language.

When a person possesses the full ability to speak a language as a native speaker, he is said to have knowledge of this language, and generative grammar is defined as a science of this knowledge. Even after generative grammar has been defined in this way, what exactly Chomsky means by the term "knowledge of language" ("ideal speaker-hearer's competence") is by no means easy to grasp, or conformable to the concept of knowledge in traditional epistemology.

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62. See also Chomsky 1964, pp.8-9.

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From the passage of Aspects we quoted it is not clear whether by the concept of "competence" he means a purely dispositional skill of producing utterances, or a theoretical knowledge of grammar, or something close to our concept of native (thus atheoretical) knowledge. As a consequence, there has been much criticism to the effect that Chomsky's use of "knowledge" transgresses the legitimate boundary of the concept of knowledge. [63] As our earlier quotation (Chomsky 1969, p.315) indicates, Chomsky himself doesn't always find it easy to clarify this concept, and his writings on this subject from different periods suggest difficulties he had to face. However, this doesn't necessarily mean that the concept has no substantial content, or that it can be reduced to something non-cognitive (e.g. skill or disposition). If we carefully trace the developmental process of the Chomskyan concept of knowledge of language from the mid-1950's to the mid-1980's, we cannot help realizing that there is an invariant core of this concept through various explications. In other words, we can quite safely say that

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63. The literature on this is huge. The best way to have an overview of it is to see Chomsky's counter-criticism of his critics. Virtually all his general works on linguistics after the 1970's contain at least one chapter exclusively devoted to this counter-criticism. For example, Language and Mind (1972), "Linguistics and Philosophy"; Reflections on Language (1975), Chapter 4, "Problems and Mysteries in the Study of Human Language"; Rules and Representations (1980), Chapter 3, "Knowledge of Grammar"; Knowledge of Language (1986), Chapter 4 "Questions about Rules".

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Chomsky has entertained a very firm and realistic concept of knowledge of language since the earliest stage of generative grammar, though it is only at a much later period that this concept finds clear expressions. To extract the most basic features of this highly complicated concept and to place it within our discussion of knowledge as far as possible is our task here. Various aspects and developments of this complicated idea are exhibited quite well by the following sequence of passages on this concept typical for each period. We are going to use them as our basic material: (all underlines are A.K.'s except in (6))

(1) Furthermore, the speaker has developed a large store of knowledge about his language and a mass of feelings and understandings that we might call "intuitions about linguistic form". (Chomsky 1955, p.62.)

(2) One way to test the adequacy of a grammar proposed for L is to determine whether or not the sentences that it generates are actually grammatical, i.e., acceptable to a native speaker,etc. We can take certain steps towards providing a behavioral criterion for grammaticalness so that this test of adequacy can be carried out. For the purpose of this discussion, however, suppose that we assume intuitive knowledge of the grammatical sentences of English and ask what sort of grammar will be able to do the job of producing these in some effective and illuminating way. We thus face a familiar task of explication of some intuitive concept - in this case, the concept of "grammatical in English". (Chomsky 1957, p.13.)

(3) If an operational measure for grammaticalness were devised, we would have to test it by determining how well it accords with the linguistic intuition of native speakers. (Chomsky 1960, p.533.)

(4) ...the ability to produce and understand new

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sentences ... (Chomsky 1961, p.223.)

(5) Normal mastery of a language involves not only the ability to understand immediately an indefinite number of entirely new sentences, but also the ability to identify deviant sentences and, on occasion, to impose an interpretation on them. (Chomsky 1964, p.7.)

(6) We thus make a fundamental distinction between competence (the speaker-hearer's knowledge of his language) and performance (the actual use of language in concrete situations). (Chomsky 1965, p.4.)

(7) Although there is no way to avoid the traditional assumption that the speaker-hearer's linguistic intuition is the ultimate standard that determines the accuracy of any proposed grammar, linguistic theory, or operational test, it must be emphasized, once again, that this tacit knowledge may very well not be immediately available to the user of the language. (Chomsky 1965, p.21.)

(8) It makes sense, I think, to analyze the mental state of knowing a language into further components, in particular, to distinguish what is sometimes called "grammatical competence" from "pragmatic competence." The term "competence" entered the technical literature in an effort to avoid entanglement with the slew of problems relating to "knowledge", but it is misleading in that it suggests "ability" - an association that I would like to sever, for reasons just discussed. By "grammatical competence" I mean the cognitive state that encompasses all those aspects of form and meaning and their relation, including underlying structures that enter into that relation, which are properly assigned to the specific subsystem of the human mind that relates representations of form and meaning. A bit misleadingly perhaps, I will continue to call this subsystem "the language faculty." (Chomsky 1980, p.59.)

(9) This structure must provide whatever information about an expression is available to the person who knows the language insofar as this information derives from the language faculty; its representations must specify just what the language faculty contributes to determining how the expression is produced, used, and understood. (Chomsky 1986, p.46.)

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(10) There is reason to believe that knowledge of language, which provides an unbounded range of propositional knowledge and enters into complex practical knowledge, should be regarded as a system of principles that develop in the mind by the fixing of values for certain parameters on the basis of experience, yielding systems that appear to be highly diverse but that are fundamentally alike in deeper respects. The propositional knowledge that results is not grounded or warranted in any sense of these terms that will bear the burdens required in standard ways of thinking about these problems.
(Chomsky 1986, p.272.)

This historical sequence of passages on "knowledge of language" eloquently tells us that Chomsky's concept of "knowledge of language" has undergone a complex developmental process, and has moved in a certain direction.[64] At the same time, however, it tells us that what underlies this process is, despite the variety of terminology in these passages, quite constant.

Through these passages, there are two fundamental concepts that repeatedly appear under several different names. The one is cognitive element in native speaker's knowledge of language as an enduring state that is established when he/she has acquired his/her language, and the other is actual cognitive activity as the manifestation of this knowledge in the form of judgments about forms and meanings of utterances of that language. In a word, the first one (enduring knowledge of language) is a species of Aristotelian entelecheia and the second one (its

64. As for the nature of this change, see the next section.

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manifestation) is an energeia-process (actualization) of this entelecheia. If we think about the fact that a speaker continuously knows his language whether he/she actually is engaged in speech activity or not , Chomsky's employment of these Aristotelian dynamic concepts (or our Aristotelian interpretation of Chomsky's concepts) -- though he doesn't seem to explicitly recognize or acknowledge their Aristotelian nature in his treatment of knowledge of language -- has to be regarded as a necessary consequence of the nature of subject matter itself.

In these passages, knowledge of language as entelecheia is called by such names as "intuitive knowledge of grammatical sentences of English" (2), "the ability to produce and understand new sentences" (4), "the ability to identify deviant sentences" (5), "competence" (6), "grammatical competence" (8), "structure" (9), "language faculty" (8) and (9), and "knowledge of language" (10). These names more or less indicate the enduring entelecheia-like nature of knowledge of language. As (2) indicates, this knowledge of language is essentially knowledge of linguistic categories.

When a native speaker knows his/her language, he/she knows what constitutes e.g. the category of sentence-of-language-X, but doesn't have this knowledge in the form of knowledge of laws so that he/she can explicitly state the laws that characterize this category by using such

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categories as sentence, verb phrase, or noun phrase. This knowledge is manifested, not in the explicit statement of these laws, but in particular judgments concerning whether a given utterance belongs to this category (sentence-of-language-X). This aspect of knowledge of language is what the passages (1),(5), and (10) try to express. The Chomskyan concept of knowledge of language is typical atheoretical knowledge of categories.

Needless to say, it is knowledge of the most fundamental linguistic categories such as sentence, word, speech sound. However, they are not the aggregate of unrelated categories, but form systems of categories around the central ones. Usually three central categories and three corresponding systems are enumerated as constituting the most important part of this knowledge. The first one is that of sentence-of-language-X. A native speaker's recognition of instantiations of this category is not an unanalyzable whole, but is related to the recognition of other categories that articulate this central category: they include such categories as word, noun, and verb. Native speakers' knowledge of sentence-of-language-X is interconnected their knowledge of these categories: we cannot know what a sentence is without knowing what a word is. When a linguist tries to explicate native knowledge of this central category, sentence-of-language, his/her main task is to construct theoretical representations of the

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laws ("rules" in Chomsky's term) that express these categories' interrelationship -- how the central category is constituted by these categories -- with the aid of additional theoretical categories such as noun phrase, verb phrase, subject, object. These theoretical representations constitute a discipline called syntax-of-language-X.

Two other central categories are sound-pattern-of-language-X and meaningful-expression-of-language-X. The corresponding two theoretical disciplines are called phonology-of-language-X and semantics-of-language-X.[65]

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65. Actually there is another central category contained in the native's knowledge of language, namely contextually-appropriate-sentence-of-language-X. The corresponding theoretical discipline is called pragmatics-of-language-X. Chomsky calls native knowledge of this system of categories "pragmatic competence" (see (8)). Chomsky considers this "pragmatic competence" as extralinguistic knowledge (see Chomsky 1986, p.68, Chomsky 1982, p.18.).

It is not unreasonable to think that knowledge represented by Grice's theory of conversational implicature, which constitutes one of the central elements of pragmatics, is a part of the general knowledge of social activity and, thus, extralinguistic. However, the problem seems to be more complex since part of pragmatic knowledge is incorporated in syntax and semantics in many languages though such an element in English is minimum. For example, the concept of "honorifics" is deeply incorporated in Japanese grammar so that there is a kind of correspondence between the form of the subject of a sentence and its verb ("honorific concord") that cannot be specified without referring to the honorific values of these expressions. Thus, if we select "watakushi-domo" (the honorifically humble form of "we") as the subject of a sentence, we cannot use the verb-ending "-da" (the honorifically neutral mode). To fully describe such phenomena, which are by no means marginal ones in Japanese, any adequate grammar has to contain the pragmatic concept of "honorifics", and this is what traditional Japanese grammar has practiced. In such languages, it is quite difficult to separate pragmatic competence from grammatical competence.

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Thus, these three systems can be abstracted from natives' knowledge of language, and generative grammar as a science of this knowledge has three components or three levels of theoretical representations.[66]

On the other hand, actual cognitive activity as the actualization (manifestation) of this knowledge of language is called by such names as "intuitions about linguistic form" (1), "the linguistic intuition of native speakers" (3), "speaker-hearer's linguistic intuition" (7), "tacit knowledge" (7), and "propositional knowledge" (10). That they are not isolated activity, but have essential connection with knowledge of language as entelecheia is clearly indicated in (10).[67] Thus, we can confirm our view that Chomsky's concept of knowledge of language is

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Such phenomena are by no means unique to Japanese. See Levinson 1983, pp.90-94.

66. Generative grammar has recognized three basic levels of grammatical representation (theoretical representation of knowledge of langauge) and three components of grammar corresponding to them. Though their names and interpretation of their relation has undergone significant change in the history of generative grammar, the basic three-layer structure has been the same. For example, they are called "syntactic component", "phonological component", and "semantic component" in Current Issues and Aspects (Chomsky 1964, p.9 and Chomsky 1965, p.16), and "syntax", "PF-component", and "LF-component" in Lectures on Government and Binding (Chomsky 1982, pp.5,17). The earliest expression of the idea that grammar contains many levels is found in Logical Structure of Linguistic Theory (1955) (Chomsky 1955, pp.157-158).

67. See also Chomsky 1986, p.265.

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basically Aristotelian. As the term "propositional knowledge" in (10) explicitly indicates, this is a genuine cognitive activity (judgment) that has a propositional content that can be true or false.[68] Because of this cognitive element, Chomsky's concept of knowledge of language (entelecheia) cannot be reduced to skill or disposition in general.[69] Particular contents of these judgments of native speakers constitute grammatical or linguistic facts[70] of a language since they are essentially expressed through linguistic categories of a language such as "speech sound", "word", or "sentence", whose identities are based on native knowledge of a language. Because of this linguistic character, this "propositional knowledge" cannot be reduced to perceptual knowledge in general as Stich thinks.[71] Our perceptual discrimination of

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68. In other words, it is so-called "knowledge-that" (Chomsky 1980, p.93, Chomsky 1986, p.265). As is always the case, knowledge-that about particular objects is the manifestation of knowledge-what (knowledge of a category).

69. Chomsky repeatedly rejects the skill-view of knowledge of language though the argument he presents doesn't use this essential fact that knowledge of language is manifested in the form of knowledge-that, as he should do. We will return to this problem. For his argument against the skill-view, see Chomsky 1980, p.102, and Chomsky 1986, pp.9-11.

70. As for Chomsky's concept of (linguistic) fact, see Chomsky 1961, pp.219-220, and Chomsky 1986, p.265.

71. See Stich 1971, pp.493-496. Stich's fundamental error is his neglect of the fact that the native speaker's grammatical judgments, which he thinks of as nothing but examples of general perceptual judgments, become grammatical judgments only because they are embedded in

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properties in general has no systematic relationship with our knowledge of language (e.g. we cannot say how a person distinguishes various colors from the grammar of his language) though one's knowledge of language no doubt has some influence on how one perceives properties. On the other hand, our discrimination of linguistic units is determined by our knowledge of language (e.g. we don't recognize two acoustic objects as two different speech sounds unless these two sounds belong to the phonological system of our language). These linguistic facts (e.g. that "it is raining" is an English sentence) are not facts about the natural world or our general perceptual mechanism, but facts about what the speakers of a language know.

Chomsky gives various examples of those linguistic facts based on the native speaker's -- i.e. his own -- judgments at each stage of the development of generative grammar.[72]

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such linguistic categories as "speech sound","word", and "sentence", and , as we have shown in the discussion about the post-Bloomfieldians, they cannot be reduced to physical or behavioral categories without referring to the knowledge of native speakers, and it is only through linguistic categories that we can identify a speaker of a language. To hear the English sound /a/ is completely different activity from hearing a particular acoustic object. We can do the latter without any knowledge of English while the former cannot be done without that knowledge.

72. What kind of linguistic facts are given as examples of things known by native speakers depends upon the theoretical focus of generative grammar in each case. The following are only a few examples.

In Logical Structure (1955), Chomsky lists the following,

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In linguistics, this "native speakers' linguistic intuition" as the manifestation of knowledge of language is usually equated with so-called introspection, and many

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among others, as facts of English:

> "keep" and "coop" begin with the same "sound", while "keep" and "top" (despite experimentally demonstrated acoustic similarity) do not;
> despite superficial similarities, the sentence "the children laughed at the clown" and "John worked at the office" are structurally quite different.
> (cf. Chomsky 1955, p.62.)

In Current Issues (1964), he uses the example:

> "John" in "John is easy to please" is the logical object of "please" while the same noun in "John is eager to please" is the logical subject of that verb, despite the superficial similarity of these two sentences. (cf. Chomsky 1964, p.34)

In Rules and Representations, he uses the following:

> (1) Violins are easy to play sonatas on.
> (2) What instruments are easy to play sonatas on?
> (3) What kinds of music are violins easy to play on?
> Though both (2) and (3) have similar structural relationship with (1), i.e. transformational relation, (2) is well-formed English sentence while (3) is not. Speakers of English knows this fact without being taught by an explicit instruction.
> (cf. Chomsky 1980, p.193)

Particular contents of these examples are not important here. The essential point is that in each language there are indefinitely many facts at these levels that are recognized as such by its native speakers because of their possession of knowledge of that language . They are facts specific to that language. Speakers of that language know these facts by knowing that language.

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people are skeptical about the reliability or even the validity of this knowledge based on "introspection".[73]

However, we cannot accept this equation and the skepticism without qualification. One essential issue concerning the nature of knowledge of language is what is the most authentic and reliable manifestation of this knowledge and how linguistics identify this manifestation. The status of "introspection" in linguistics and the real meaning of "tacit knowledge" in (7) have to be discussed in relation with these central issues.

Insofar as we define native speaker's knowledge of language not by means of "ability to report linguistic facts to a linguist", but by means of "ability to speak in his speech community" -- (this "ability", of course, contains cognitive element) -- the proper manifestation of this knowledge is the activity of speaking itself, as we observed in 4.1.. In this activity, the native's knowledge of language manifests itself as the speech production ("performance" in (6)) and the recognition of the identity of produced utterances and categories related to them, namely the understanding of what is said. In other words, when a speaker speaks and recognizes what the other speaker says at the levels of locutionary and illocutionary acts

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73. The literature is huge. See Newmeyer 1983, chapter 2 for an overview of the problem.

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(but not necessarily perlocutionary acts), his knowledge of language is manifested in the proper form. If the cognitive element of native speaker's knowledge of language ("grammatical competence") has any proper activity, that has to be this second process, namely the native speaker's recognition and understanding in speaking.

For example, if during conversation a speaker recognizes an accent in a foreigner's speech without trying to detect this accent, it has to be regarded as the proper manifestation of his knowledge of phonology of his language (i.g. knowledge of sounds,rhythm, and tonality of his language). This spontaneous recognition shows , more than anything, that he knows the sound pattern of his language as atheoretical knowledge. However, as we discussed in 4.1., when the speaker speaks with his fellow people without any "foreign" accent, his knowledge of phonology is manifested not by explicit recognition, but by the absence of such a recognition; his recognition or judgment that his fellow people's utterances conform with his phonology is potential or tacit only in the sense that it can be actualized at his focal consciousness when and only when his attention is directed to this fact through the interruption of on-going speaking activity, since the speaker's attention in speaking activity is usually directed not to any grammatical aspects of the utterance but to the content the utterance. The speaker's

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"grammatical competence" manifests itself in the form of explicit judgments only when these recognitions are about some new or prominent features of utterance (e.g. accent, slip of the tongue, unheard words, and so on) or the topic of discourse is the features of utterance themselves (e.g. interview by an linguist). Otherwise, the recognition of familiar features of utterances (e.g. well-formedness, familiarity of words, lack of accent) are felt or experienced by the speaker only as "normality" or "usualness" in general. However, this doesn't mean that the speaker is ignorant of these features. Rather, he/she fails to recognize these familiar features because he knows them too well. Thus the most authentic and reliable manifestation of knowledge of language is a potential recognition in the activity of speaking that usually doesn't get voice. In this sense, the manifestation of knowledge of language is tacit knowledge (7).

This tacitness of knowledge of language gives a linguist a paradoxical situation. He/she wants to know natives' judgments about their language as the most authentic and reliable manifestation of their knowledge of language. However, these judgments are most authentic and reliable when they are tacit, i.e. invisible or silent. Native knowledge manifests its real nature when its explicit manifestation is absent. This makes the observation and objectification of this manifestation in

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its most authentic form by linguists almost impossible. This becomes clearer if we think about a linguist's own native knowledge of language. This knowledge manifests itself best when it applies to an utterance made in the conversation in which the linguist is actually engaged in, but this manifestation in most cases takes the form of the absence of judgments concerning the grammatical features of utterances. If the linguist tries to reflect on the contents of these tacit judgments, he/she has to interrupt his/her activity of speaking momentarily. We understand this reflection on one's natural and tacit judgments on one's language on the basis of the suspension of the activity of speaking as introspection or linguistic intuition.[74] By the very nature of linguistics as a

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74. In other words, we can think that introspection in this sense is a kind of linguistic self-image or self-reflection of a speaker. What is expressed in "introspection" is not what one knows, but what one thinks one knows on an occasion of reflection. Especially if a speaker has a conformist linguistic consciousness, it sometimes happens that he/she identities a sentence as ungrammatical when he is asked, even if he uses that type of sentence every day. For example, the deletion of 1st and 2nd person subjects is not rare in English conversation as in a question "have a good time?", but not all people who usually use such expressions judge them grammatical even as a colloquial style. As Labov remarks, such a discrepancy occurs especially when a particular expression is socially stigmatized. The study of people's actual language and their linguistic self-image is one interesting area in sociolinguistics, and we can find many similar examples in this field. See Labov 1977, pp.104-108.

Bloomfield calls this linguistic self-image "secondary linguistic response" and warns against its use as data in linguistics (Bloomfield 1944). However, we don't have to hesitate using introspection as a method since linguists

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reflexive and theoretical activity, a linguist is forced to use various indirect methods of capturing the contents of native knowledge of language, both of his/her own and other people's. The reliability of these methods is a matter of degree and these is no single method which can claim to capture the real nature of knowledge of language. So-called "introspection" is one of them.

Considering such a relationship between "introspection" as a necessary indirect method to capture the nature of knowledge of language and the authentic manifestation of knowledge of language in the activity of speaking, it is clear that we have to classify traditional criticisms of the use of "introspection" into two groups.

One is a skeptical attitude to the reliability of "introspection" as one method for tapping native speaker's knowledge of language. This is a perfectly legitimate claim when there is a sign that shows that the activity of introspection departs radically from the proper activity of knowledge of language in particular cases, and if another method to elicit more accurate judgments from native speakers is proposed, there is no reason to reject it.[75] There is no unique way to tap the knowledge of language in

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anyway use some indirect methods to tap knowledge of language.

75. For example, Hill 1961, Bolinger 1968, and Labov 1977, belong to this type of criticism.

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its activity.

However, if from this limited reliability of "introspection" one concludes that there is nothing that can be called native speaker's knowledge of language, it is as fallacious an argument as the one that concludes that there is no such a thing as intelligence from the fact that we have no single reliable measure of intelligence. We have to distinguish general skepticism about knowledge of language[76] from a critical attitude to the use or abuse of "introspection" as a method in linguistics. To the first type of radical skepticism, the whole criticism of the Quine-post-Bloomfieldian concept of language applies.

Once the relationship among knowledge of language ("competence"), its authentic manifestation in the activity of speaking, and "introspection" as a method in linguistics is thus clarified, the real significance of the normativity of language which says that a native speaker's knowledge of a language is the ultimate factual source for the grammar of this language (see (7)) becomes clear. This thesis doesn't mean that linguists have to take what a native speaker gives as his "linguistic intuition" unconditionally as a fact of that language. The normativity thesis itself doesn't tell us what kind of indirect method we should employ to reflectively know the content of native

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76. Stich 1971, and Root 1976, belong to this type.

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knowledge.

From this normativity of language, one objective standard for grammatical theories is derived, namely a grammatical theory's conformity with native knowledge. Chomsky calls this objectivity of a grammar as a theoretical representation of knowledge of language descriptive adequacy:

> A grammar can be regarded as a theory of language; it is descriptively adequate to the extent that it correctly describes the intrinsic competence of the idealized native speaker. The structural descriptions that it makes between well-formed and deviant, and so on, must, for descriptive adequacy, correspond to the linguistic intuition of the native speaker (whether or not he may be immediately aware of this) in a substantial and significant class of crucial cases. (Chomsky 1965, p.24.)[77]

A grammar describes the structure of a language, and the objectivity of a grammar consists in above all its conformity with the nature of this language. However, there is no other ultimate standard for what this language is than its natives' knowledge. This is the normativity of language. Consequently, linguistics is necessarily a normative science whose primary task is the description of native knowledge of languages.

Though Chomsky's concept of "knowledge of language" didn't get a clear reflexive explication of its own nature

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77. See also Chomsky 1964, pp.28-29.

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at a earlier stage and has undergone significant change[78],

78. As we already know, the Chomsky's main difficulty in capturing the special nature of knowledge of language consists in the fact that it is atheoretical knowledge which doesn't fit traditional concept of knowledge as "true justified belief". As late as 1972, Chomsky still thinks that knowledge of language is a system of beliefs:

> We can, in other words, attempt to construct a second model, a learning model, which takes certain data as input and gives, as "output", the system of beliefs that is one part of the internal structure of the perceptual mode. (Chomsky 1972, p.169.)

Consequently, skeptics of this concept also criticize it on the assumption that knowledge of language is a system of beliefs. See the following passage of Stich:

> For my opponent grammar is the study of a system of knowledge or belief that speakers acquire in the process of learning a language. Here he is in agreement with Chomsky who has, of late, stressed the importance of the neglected notion of "what is learned" - the "system of beliefs" acquired - to the psychology of learning in general and to language acquisition in particular.
> (Stich 1971, p.494.)

Once the atheoretical nature of knowledge of language is clearly recognized, any criticism based on such an assumption loses its force.

The explicit realization of the atheoretical nature of knowledge of language -- that it is ungrounded knowledge -- comes in the mid-1970'. In Rules and Representations (1980), Chomsky writes as follows:

> Note that knowledge of language is quite different in character from the kinds of knowledge discussed in the Gettier cases; we do not "believe" rules of grammar or other cognitive systems, as John Fisher properly emphasizes. But knowledge of grammar does involve propositional knowledge and belief. A person who knows English knows that "the candidates want me to vote for each other" is not a well-formed sentence

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we can say that what Chomsky has grasped under this name since the beginning of the history of generative grammar is more or less what we call normative (native) knowledge of language. Linguistics (grammatical science) is essentially a normative science. Chomskyan generative grammar correctly captures this special nature of language and linguistics that post-Bloomfieldians failed to realize.

5.1.4. Explanation and Extension of Knowledge of Language in Chomskyan Generative Grammar.

What distinguishes Chomskyan generative grammar from all other schools of linguistics is its special notion of "explanation of knowledge of language". By this concept Chomskyan generative grammar becomes not only an explanatory theory of language, but a theory about universal grammar (universal features of all human languages) and language acquisition at the same time. In accordance with the concept of "explanation of knowledge", the concept of "knowledge of language" in Chomskyan generative grammar is drastically extended. The purpose of

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> meaning that each wants me to vote for the other, and also believes this. (Chomsky 1980, p.93.)

Cf. Chomsky 1975, p.144, Chomsky 1975, p.144, Chomsky 1986, pp.12,272.

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this section is purely descriptive in order to clarify what is "explanation" in Chomskyan generative grammar and what is the extended notion of "knowledge of language". The criticism of Chomsky's claim about what is actually achieved by this "explanation" will be done in 5.2.2. and 5.2.3.

5.1.4.1. The Explanation of the Content of Knowledge and the Explanation of the Origin of Knowledge

When we talk about explanation of knowledge, we can mean two things: one is the explanation of why the known content is true, and the other is how the cognitive agent has come to know that fact. For example, if a cognitive agent knows that water is H_2O, one explanation of this knowledge is that of why it is true that water is H_2O, and the other explanation is how he/she has come to know this fact. If the knowledge is theoretical knowledge, there is an internal connection between these two explanations since the cognitive agent has to recognize why a certain content is true to come to know that fact, and in a sense the process of learning a fact is the conscious representation of the reason why that is actually a fact. (Remember the structure of epistemic justification and how we come to acquire theoretical knowledge of ,e.g., physics.) On the other hand, if the knowledge is atheoretical, these two explanations are independent of each other in general since

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the cognitive agent doesn't recognize the reason in the process of acquiring that knowledge. For example, when a cognitive agent knows that a certain specimen is water, why this specimen is water and how the cognitive agent recognizes this fact are independent of that knowledge in that he/she has no recognition of why it is true that this specimen is water (cf. our discussion in 4.1.).

If we apply this distinction to knowledge of language, the explanation of the content is that of why a certain grammatical fact is a fact in a language, and the explanation of the origin of knowledge is that of how the native speaker has come to know that fact. Since knowledge of language is atheoretical and a speaker recognizes a grammatical fact of his/her language without knowing why that fact is a fact, we have to assume that these two explanations in linguistics are independent each other unless there are further assumptions about the relationship between the process of language acquisition and knowledge of language.

What makes the concept of explanation in Chomskyan generative grammar unique is that these two explanations of knowledge (of content and of origin) are combined into a single theory of universal grammar and language acquisition in this school. However, as is the case for other central concepts in Chomskyan generative grammar, this special notion of explanation is expressed in its full form only at

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the later stage of its history as the unification of two explanatory elements in the earlier stage of generative grammar.

They are: the explanation of particular grammatical fact within a grammar as a theory, and the procedure to identify the correct (true) grammar among many grammars that equally well describe the knowledge of native speakers. In this section, we first explicate each of these two explanatory elements in generative grammar with their historical background (5.1.4.2. and 5.1.4.3.), and then show how they are unified a single concept of explanation (5.1.4.4.). After that we examine how the concept of "knowledge of language" in generative grammar is extended according to these concepts of explanation.

5.1.4.2. The Deductive Explanation of Linguistic Facts

In Syntactic Structure (1957), Chomsky says the following about the explanation of grammatical facts:

> There are many facts about language and linguistic behavior that require explanation beyond the fact that such and such a string (which no one may ever have produced) is or is not a sentence. It is reasonable to expect grammars to provide explanations for some of these facts.
> (Chomsky 1957,p.85.)

As an example of these facts he cites the fact that "the hunters" in "the shooting of the hunters" can be understood

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ambiguously either as the logical subject of "shooting" or as the logical object of "shooting". Chomsky proposes an explanation that this phrase ("the shooting of the hunters") has two different structural descriptions that derive from the following two different underlying sentences (kernel sentences) through certain transformational processes.

(1) The hunters shoot [something].
(2) [someone] shoots the hunters.

The basic idea of this type of explanation of linguistic facts is that the explanation consists in constructing a formal derivation of the structural description of an expression (phrase or sentence) that represents the native speaker's understanding of that expression from some basic principles and procedures similar to those in formal logic. Let's call this derivation grammatical derivation. Though the particular nature of grammatical derivation has undergone several changes in the history of Chomskyan generative grammar, the basic concept of the explanation of a grammatical fact through grammatical derivation remains the same up to the present point. At the Aspects stage, this derivation takes the famous tree-like derivation though rewriting rules (phrase structure rules and

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transformational rules).[79] In the recent framework of Government and Binding theory (G.B. theory), this framework of Aspects is radically altered so that phrase structure rules are now suggested to be eliminated from the grammar with the lexicon supplying the corresponding information, and various transformational rules are unified into a single rule of Move-alpha (move anything to anywhere).[80] Instead, the grammatical derivation (now rather called "deduction" or "computation")[81] of the structural description (it is now called "representation") is done from the lexicon and various principles.[82]

Despite the difference among these stages, the grammatical derivation has the following three essential

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79. Chomsky 1965, pp.66-67.

80. Chomsky 1986, p.83.

81. See Chomsky 1986, pp.43, 124, 148.

82. These principles are more general than the rules of Aspects. Principles are classified into sub-systems which correspond to the most basic elements of information that a sentence carries by its grammatical features. The details of these principles are too technical to be treated here, but the fundamental point of each sub-system is clear. Among them, the most important ones are (i) government theory (about the relationship between the head of a category and its complement, e.g. the relationship between a verb and its object or that between a noun and its relative clause), (ii) theta-theory (about the assignment of semantic roles such as agent, object, instrument, to each noun phrase in a sentence and a noun phrase), (iii) binding theory (about coreferential relation among noun phrases in a sentence. See Chomsky 1982, pp.5-6.

For examples of deduction in this framework, see Chomsky 1986, pp.102-114. For the significance of these principles, see 5.2.2.

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elements because of which we can call it an "explanation".

> (1) the initial step of the derivation is structural description of relatively simple grammatical sentences (initial symbol "S" in Aspects and base-generated -- i.e. derived from the lexicon -- D-structure in G.B.)
>
> (2) the final step is an expression that represents the native speaker's understanding or interpretation of a sentence or a phrase,
>
> (3) the steps between them are formal or semi-formal procedures of symbol modification expressed by rules and principles (phrase structure rules and transformational rules in Aspects and Move-alpha rule and various principles in G.B.)

Formally speaking, this process is similar to the deduction in an axiomatic system of logic, though the symbol modification (3) in grammar doesn't have the property of preserving the truth value. Instead what is supposed to be preserved in the process of derivation is the legitimacy of an expression in a language (e.g. grammaticality in syntax, meaningfulness in semantics, legitimate sound pattern in phonology) at each step. If the procedures of (3) have the property of preserving linguistic legitimacy at a certain level, and the initial expression of (1) is linguistically

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legitimate, then we can consider a grammatical derivation of a structural description of a given sentence as a semi-formal proof (explanation) of its linguistic legitimacy. Let's call this mode of explanation deductive explanation of grammatical facts. There has been criticism of this concept of explanation in generative grammar on the assumption that the only legitimate explanation is that of events in terms of causality.[83] However, such a criticism completely misses the point that linguistics is a normative science of knowledge and the explanation of the content of knowledge is perfectly legitimate in such a discipline. A lawyer or a judge explains why a certain law is unconstitutional in this sense, and a logician explains why Turing computable functions and general recursive functions are co-extensional in this sense. In exactly the same sense, a linguist can explain why two seemingly similar sentences have different kinds of interpretation given reasonable assumptions about the basic structure of sentences of a language. Criticism of the linguistic explanation based on an unjustifiably narrow concept of "explanation" has no ground.

5.1.4.3. Grammatical Realism and the Determination of "Correct" Grammar

The second explanatory element in Chomskyan generative

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[83]. E.g. see Levin 1977.

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grammar has its root in the fact that there are always many different deductive explanations of the same linguistic fact because of possible multiple sets of the fundamental assumptions. The sequence of many theories one after another in the history of Chomskyan generative grammar itself testifies to this fact since the same grammatical phenomenon (e.g the construction of relative clause) has received many explanations without older explanations being falsified in an ordinary sense. It is like the fact that there are many axiomatic systems of logic for which there is no objective standard for deciding which is the "correct" axiomatic system. Similarly, in linguistics if several grammars have grammatical derivations of all of basic linguistic facts of a language, there are no additional grammatical facts on the basis of which we can choose "the correct grammar". As a purely logical possibility similar situation can arise in natural science, too, but actually it will hardly happen, and it is basically philosophers who are worries about such a problem. On the other hand the same problem in linguistics is real if linguists try to go beyond descriptive adequacy, and many linguists have been inclined toward a nominalistic -- a view that there is no problem of correctness of a grammar beyond the descriptive adequacy -- view about grammar because of this undecidability of "the correct grammar". Despite this, Chomsky has pursued a realistic

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view of grammar (the view that there is one true grammar of a language beyond the level of descriptive adequacy[84]), and a large part of his theoretical effort has been devoted to establishing the foundation of this grammatical realism. In 1955 he writes the following:

> Linguistic theory must enable us to choose among proposed grammars, and every consideration relevant to this choice must be built into the theory. So far, the only condition that we have placed on a grammar is that the system of levels it determines (in a manner yet to be given) must be of the form required by linguistic theory. But this formulation leaves out one of the most important and characteristic features of grammar construction. In careful descriptive work, we almost always find that one of the considerations involved in choosing among alternative analysis is the simplicity of the resulting grammar. If we can set up elements in such a way that very few rules need be given about their distribution, or that these rules are very similar to the rules for other elements, this fact certainly seems to be a valid support for the analysis in question. It seems reasonable, then, to inquire into the possibility of defining linguistic notions in the general theory partly in terms of such properties of grammar as simplicity. If this course is to be followed, then we must give a precise specification for the form that a grammar may assume. (Chomsky 1955, pp.113-114.)

Here two basic strategies for determining the correct grammar are embraced in a rudimentary form. They are (a) the restriction of the range of possible forms of grammar given a set of grammatical facts, and (b) an evaluation measure for these possible grammars. In Aspects, these two

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84. See Chomsky 1973, p.37.

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strategies are formulated in more explicit form:

> To advance linguistic theory in the direction of explanatory adequacy, we can attempt to refine the evaluation measure for grammars or to tighten the formal constraints on grammars so that it becomes more difficult to find a highly valued hypothesis compatible with primary linguistic data. There can be no doubt that present theories of grammar require modification in both of these ways, the latter, in general, being the more promising. (Chomsky 1965, p.46.)

Interestingly, Chomsky eventually adopts this second strategy that he describes as "more promising" here in the current G.B. framework:

> As conceived in earlier work, UG [Universal Grammar, which is basically same as what is called "linguistic theory" in the previous quotations] permits an infinite number of languages. The conception just outlined [the framework of G.B. theory], however, permits only a finite number of core languages (apart from the lexicon): There are finitely many parameters and each has a finite number of values. (Chomsky 1986, p.146.)

The core concept of "linguistic theory" -- (or "Universal Grammar" in the later terminology) -- that is common to these three stages of the development of Chomskyan linguistics is that of a purely formal theoretical mechanism to determine the correct grammar given a set of linguistic facts on the basis of native knowledge of language.

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5.1.4.4. Acquisitional Explanation in Linguistics and the Concept of Universal Grammar

By the early 1960's, however, Chomsky gives this formal concept of linguistic theory the interpretation of a model for a language acquisition device innately possessed by children. According to this interpretation, a linguistic theory that defines the conditions for possible grammars for a given set of grammatical facts and the evaluation measure is considered as a theoretical description or model of a device by means of which a child acquires (uniquely determines) the grammar of his language from linguistic data to which he/she is exposed at the earliest stage of life ("primary linguistic data"). Thus, a whole linguistic theory, including all possible grammars it specifies, becomes a kind of empirical theory of language acquisition. The initial condition of this theory is the primary linguistic data, and what this theory predicts is the exact contents of knowledge of language that the child will eventually attain.

Under this interpretation, these two types of explanation we mentioned above (the explanation of the content of knowledge of language, and the explanation of its origin)are unified into one in the following way. Suppose that one such linguistic theory is formulated. Then, if we give a set of primary linguistic data for a person, this theory explains both why a grammatical fact

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this person knows is a grammatical fact, and how this person has come to know this fact. First, this theory explains how a particular grammar is determined on the basis of primary linguistic data, and, by using this grammar and deductive explanation in this grammar, explains why a particular grammatical fact is a fact. Let's call this type of explanation an acquisitional explanation of grammatical facts. The realization of this type of explanation becomes the new and the ultimate goal of Chomskyan generative grammar:

> What we seek, then, is a formalized grammar that specifies the correct structural descriptions with a fairly small number of general principles of sentence formation and that is embedded within a theory of linguistic structure that provides a justification for the choice of the grammar over alternatives. Such a grammar could properly be called an explanatory model, a theory of the linguistic intuition of the native speaker. (Chomsky 1960, p.533.)

If a linguistic theory achieves this goal, it is said to attain explanatory adequacy.[85] If there is such a theory, what is specified by this theory are the universal features of all human languages since a child can learn any language given an appropriate environment ("major features that are defining properties of natural language and that distinguish natural languages from arbitrary symbolic

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85. Chomsky 1965, p.25.

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systems" Chomsky 1965, p.36). These features are called the "innate schema", and categories that express them are called "linguistic universals".[86] Thus, under the acquisitional interpretation, a linguistic theory comes to be considered as a theory about the universal features of human language that are responsible for children's potentiality for learning any natural languages. Such a concept of linguistic theory is called Universal Grammar (U.G.) in current framework of G.B. theory (for discussions about U.G., see 5.2.3.).

5.1.4.5. The Extension of "Knowledge of Language"

Given these two concepts of explanation specific to Chomskyan generative grammar, the concept of "knowledge of language" is extended to two ranges of objects about which we usually don't use the term "know". One is that of rules or principles from which particular grammatical facts are deduced in deductive explanation. Another is that of laws and categories of Universal Grammar used for describing the innate schema for language acquisition.

Chomsky asserts that a speaker has a kind of cognitive relationship -- a kind of "knowing" relation -- to both of these two classes of objects, and uses a technical term "to cognize" to express this relation:

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86. Chomsky 1965, pp.27-28.

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> When we know that p, we cognize that p.... furthermore, we cognize the rules and principles from which these cases of knowledge-that derive, and we cognize the innately given principles that are further articulated by experience to yield the mature system of knowledge that we possess. The term "cognize" is similar to "know". It is identical with regard to knowledge of specific facts, and also, I think, virtually so with regard to knowledge of the system that underlies them... (Chomsky 1986, p.265.)[87]

Here whether we use the ordinary term "know" or Chomsky's technical term "cognize" is irrelevant; the essential question we have to ask is whether we have any cognitive relation to these additional two classes of objects which we cannot make the object of focal consciousness unless we learn a specific linguistic theory.[88] What we have to consider is whether there is any cognitive difference between our relationship to these rules (principles) and our relationship to laws of nature to which we don't think we have any cognitive relation even though our "body" obeys them. If there is no difference between these two relationships, it is clear that to call one of them, but not the other, cognitive is arbitrary. If, on the other hand, there is any difference that can be characterized in cognitive terms, it would be absurd to unconditionally reject this application of the concept of "knowledge".

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87. Also see Chomsky 1975, pp.164-165, and Chomsky 1980, p.92.

88. For the inaccessibility to consciousness of these rules (rules and principles), see Chomsky 1980, p.128.

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We have essentially the same cognitive relationship to the first group of objects (rules from which particular grammatical facts are derived) as we have to logico-mathematical axioms/postulates like Peano the postulates of number theory. For example, we know we can recognize many particular facts about natural numbers which were not taught by an explicit instruction but are the result of the application of a certain algorithm. Suppose that we have never calculated "14 x 5". Then that 14 x 5 = 70 is one of them. This fact can be derived from Peano postulates, and, in a sense, it can be explained why it is true by means of them. However, we can hardly recognize the truth of the Peano postulates as the object of focal consciousness without external guidance such as reading a book about number theory,or taking a course in set theory. A person who hasn't learned number theory doesn't know these postulates in the ordinary sense of "know". Nevertheless, he has a certain cognitive relation to them that he doesn't have to the laws of physics, namely the contents of knowledge he already has can be derived from these postulates through the repetition of a simple deductive process. On the other hand, what can be derived from the laws of physics through calculation and inference is not the contents of knowledge he already has, but statements describing particular physical events, e.g. the motion of his body in space. Quantum mechanics and molecular biology

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has no essential connection with what we know, but they do have an essential connection with how our body moves. We have no cognitive relation to them unless we learn them as theoretical knowledge. On the other hand, all human beings have an indirect cognitive relationship to the Peano postulates or Euclid's axioms of geometry, insofar as we have the concepts of natural number and three dimensional spacial relations. In a similar way, a native speaker of a language has some indirect cognitive relationship to the rules or principles from which basic linguistic fact of his language are derived through a repetition of reasonably simple procedures.

As Chomsky remarks, "our concept of knowledge fades into obscurity" in this area, but this doesn't mean that we have no cognitive relationship to the latter.

What we should call this indirect cognitive relation, and how we should characterize it is quite a general problem for all serious normative sciences of knowledge that try to systematically explicate atheoretical knowledge of basic categories.

Does a person who has never studied axiomatic set theory know axioms of Zermelo-Frankel system? There seems to be no clear answer, but it is undeniable that this person has some indirect cognitive relationship to them. If the concept of "axiom" cannot be reduced to purely formal notions, but means "things that are cognitively

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prior to everything else" or " principles of knowledge", the root of this concept has to be in this unexplainable indirect cognitive relation. If we recognize the validity of such concept, it is difficult to reject Chomsky's extension of "knowledge of language" to rules and principles on any apriori ground. Of course, we cannot unconditionally accept proposed rules and principles as "principles of knowledge of language". One obvious difference between the case of language and the cases of arithmetic or geometry is that knowledge of language is specific to each speech community while our knowledge of number and spatial relation is quite universal. Despite this difference, Chomsky's claim about the extension of knowledge of language seems to contain an important piece of truth.

From this point of view, a typical criticism of this application of the term "know" or "cognize" to rules of Chomskyan linguistics made by such people as Quine or Searle has to be considered as being based on a narrow view of "rules" which is not applicable to laws of language.[89] This type of criticism is based on the classification of the relevant cases into two groups:

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89. Quine 1972, in Harman p.104, and Searle 1980, pp.37-38. Curiously enough, Quine and Searle, who have quite different philosophical views on language, make exactly the same argument. For Chomsky's counter criticisms, which are quite effective, see Chomsky 1975, pp.179,189-190, and Chomsky 1980-II,pp.54-56.

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(1) a genuine case of rule-following, in which the rule-follower can be consciously aware of the rule, and the rule causally determines his behavior, such as rules of chess,

(2) the case of natural laws that describe our bodily movements.

The argument says that since the case of "rules" of generative grammar is not (1), therefore it must be (2) unless evidence is given that they belong to (1). Therefore, we cannot say that we have any cognitive relationship to these rules. As Chomsky correctly remarks, this argument misses the fact that there are the third sort of cases to which laws of language ("rules" in Chomsky's term), Peano postulates, and Euclid's axioms belong.[90] In our terminology, both Quine and Searle fail to distinguish rule-constituted normative categories (chess-like cases) and primitive-normative categories (cases like language or logic). In the case of former, we cannot say that we know rules unless we can explicitly recognize them. On the other hand, in the case of primitive normative categories, our relationship to laws that govern categories we know is neither that of explicit knowledge nor total ignorance (see

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[90]. Chomsky 1975, pp.189-190, Chomsky 1980, p.274 note. 56.

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our discussion in 4.2.7.). When Quine and Searle think of "rules", they no doubt think of cases like chess, and think that these cases exhaust the possibility. However, there is an essential difference between chess-type cases and language. Chomsky correctly grasps this difference.

Now let's turn to the second extension of "knowledge of language", namely the application of the concept of knowledge to the relationship between children, including newborn babies, and the categories --e.g. basic semantic roles, sentence, verb, noun-- and the laws (e.g. principles of binding theory)[91] of Universal Grammar that are supposed to common to all human languages. The question is, do we know these categories or laws in any sense when we are born? We think that this extension of the concept of knowledge is highly problematic, though we ourselves cannot offer any answer to the difficult question of what we know when we are born. We cast a doubt on Chomsky's claim not because we think that newborn babies don't know these things as Chomsky claims, but because we think that in the arguments surrounding this extension of concept of knowledge there is too little discussion about what kinds of cognitive categories can and should apply, if any, to

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91. For more detailed contents of Universal Grammar, see 5.2.3.

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children for us to be able to answer to this difficult question.

Let us clarify our point. When we discuss the cognitive development of a human being throughout his or her life, there are two questions we can ask. One is about what and how a person learns at each stage of life. We can ask this question about every stage of the life of a person. What and how a 10 year old child learns is different from what and how a 40 year old adult learns. There is little reason to suppose that these two processes of learning can be explaied by a single theory. Our process of coming to know new things virtually doesn't stop until our death, and this process itself undergoes various changes. Thus, this first question is not the one exclusively about the first stage of our life. Another problem is about when and how a child first acquires the ability to perform cognitive activities such as knowing, believing, supposing, and inferring. This is the problem of the ontogenesis of our cognitive ability and our cognitive agency. If we think about our life process from the moment of the fertilization to the intellectual maturation of adult period, we cannot "solve" this problem just by saying that this ability is "innate" unless we mean that the event of birth has some magical effect of conferring this ability to a newborn baby or that an fertilized egg already has this ability. The problem, of

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course, is not that of specifying the moment or date of this emergence of cognitive ability, which is obviously impossible, but that of specifying the set of special cognitive or semi-cognitive categories that are specifically applicable to this process that happens only once in our life.

If the study of children's first language acquisition has a special significance that the general study of learning doesn't have, and if the problem of children's knowledge of Universal Grammar is not simply another application of general learning theory that also applies to matured adults under an assumption that children are already little scientists who observe the world surrounding them and construct a theory about it, these initial cognitive categories have to be different from the cognitive categories applicable to matured adults such as knowing, recognizing, inferring, making inductive generalization, and so on. For if we describe the process of the genesis of cognitive ability, knowledge of language, or knowledge itself by means of these categories, it amounts to our presupposing the existence of the very thing whose genesis we want to know; we cannot explain the origin of children's cognitive ability by talking as if they already possess some of them at the beginning of this process.

There are, as is well known, two different positions

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concerning this initial process that have been expressed in the context of philosophical discussions concerning generative grammar: one is Chomsky's so-called rationalism that claims that children already have rich knowledge of Universal Grammar even at the moment of birth and the other is the so-called empiricism.[92] The empiricists like Quine assert against Chomsky's strong "innateness hypothesis" that newborn babies have only general inductive ability and primitive quality space that define the concept of "similarity".[93] Though these two positions are radically different in terms of what children know at the moment of birth, they equally assume that children already possess basic cognitive abilities at this earliest stage of life and tell almost nothing about how and when they emerge and we become a cognitive agents. It is often said by both positions that these initial ("innate") cognitive abilities of children are "unconscious" to avoid an implausible direct application of adults' full-fledged cognitive categories to children.[94] Thus, they seem to address the problem of the genesis of cognitive abilities -- the transition from non-cognitive stage to the full cognitive stage --. However, such a modification by means of the

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92. For Chomsky's own comparison of these two positions, see Chomsky 1965, pp.47-48.

93. See Quine 1967, pp.123-127.

94. See Chomsky 1965, p.58, and Quine 1967, p.122.

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term "unconscious" itself doesn't even touch the problem of the genesis of cognitive abilities. For if we are to use the term "unconscious" as the key concept in the genesis of cognitive agency, we can and have to seriously ask such fundamental questions as what is "unconscious inference", how this is related to conscious inference, and when and how the results of unconscious inference come to be conscious if they do at all, and why we can call them knowledge if they never come to be conscious. If children's "innate" cognitive abilities are to be characterized by the concept of "unconscious", these questions have to be asked and answered. Otherwise it is hard even to understand what "innate ideas", "innate scheme", or "innate quality space" mean even less to judge whether Chomsky's claim of this second extension of the knowledge has certain validity or not.

It is true that we are born with many abilities from which our matured cognitive ability eventually develops, but this indirect connection with the full-fledged cognitive ability itself doesn't seem to license us to say that these initial abilities are already cognitive; after all, what is the reason to think that the moment of the birth is also the moment of the birth of a cognitive agent? why is our cognitive birth is simultaneous with rather than before or after our birth? When the term "innate" is used in the discussion about first language acquisition, it

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cannot simply mean "being physically equipped at the moment of birth"; it has to mean "being cognitively equipped at the moment of birth". For the focus of discussion is not the physical development of children's bodily organs, but the development of their cognitive ability whose culmination is our ability to speak and understand language. Thus, we think that Chomsky's second extension as well as empiricists' objection to it, at best, is highly problematic since the very concept of cognitive innateness seems to lack a definite content under current discussions surrounding this problem.

5.1.5. The Naturalistic Turn in Chomskyan Generative Grammar

If we review the history of Chomskyan generative grammar, we can recognize two clear shifts of view in it. The first one is from the formal view of linguistic theory of the 1950's to the acquisitional interpretation we discussed in 5.1.2.3. and 5.1.4. This shift has been completed by the time of the appearance of Aspects (1965). The second shift is what we here call the naturalistic turn. This is the shift from a position in which the relationship between grammatical facts (and knowledge of language) and natural facts in general remains obscure, to a position in which

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grammatical facts are clearly interpreted as natural -- especially biological -- facts and linguistics is regarded as a part of natural science. If we think about the fact that Chomskyan generative grammar established its identity by sharply distinguishing itself from Bloomfieldian physicalism (behaviorism), it becomes clear that this process of naturalization for generative grammar is neither a straightforward consequence of its essence nor a trivial process, since Chomskyan generative grammar started with rejecting Bloomfieldian naturalism that thinks that language is nothing but a collection of observable physical phenomena in the natural world. Chomsky's naturalization had to take quite a different course than that of Bloomfieldian/post-Bloomfieldians. In other words, both of them think that linguistics is a part of natural science, the ways they try to naturalize language are radically different.

Essentially, naturalization of language within the framework of Chomskyan generative grammar requires nothing less than a naturalization of knowledge of language itself. In this section, we review how this shift -- which was first systematically expressed as a philosophical overview in Reflections on Language (1975) and has been completed as an explicit theory of language acquisition and universal grammar (UG) by the time of the publication of Lectures on Government and Binding (1981) -- occurred. We critically

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examine the validity of this naturalization in the next section.

At the stage of Aspects Chomsky's attitude to naturalism, especially to the problem of whether linguistics qualifies as a natural science was, at best, ambivalent though it is by no means the case that he took a clear humanistic view on the nature of language like that of Trubetzkoy, Sapir, or Itkonen. In other words, we can say that Chomsky's initial ontological view of language is ambivalent, as between the naturalistic view that sees human language as a part of the natural world and a humanistic view that sees language as a unique human object in the sense we specified in chapter one. The humanistic side of Chomsky's view of language is represented by his so-called Cartesianism:

> In fact, as Descartes himself quite correctly observed, language is a species-specific human possession, and even at low levels of intelligence, at pathological levels, we find a command of language that is totally unattainable by an ape that may, in other respects, surpass a human imbecile in problem-solving ability and other adaptive behavior. (Chomsky 1972, p.10.)

Such a passage might suggest that possession of language is simply a biological feature specific to homo sapiens just as having a long nose is a biological feature specific to elephants, and that therefore there is no conflict between a naturalistic view of language and the humanistic aspect

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in Chomsky's idea of language (Cartesianism). However, the problem is not so simple, and the root of complexity consists in the essential duality of the idea of "human being" itself, namely human being as a natural (biological) species (homo sapiens) and the concept of human being whose essence consists in its "freedom" that necessarily goes beyond the determination of the laws of nature. If we try to naturalize the latter, we have to have an unintelligible concept "biologically (naturally) determined feature of having the ability not to be totally governed by the determination of the laws of nature".

This semi-humanistic Cartesianism of Chomsky is symbolized by one concept: the creativity of language. Cartesian idea that there is a deep difference between human beings and other animals and that this difference is most clearly manifested in human language forms a background of Chomsky's thought in the mid-1960's. We can hear the mixture of the voices of Descartes and Chomsky from the following passages of Cartesian Linguistics (1966):

> But he [Descartes] arrived at the conclusion that man has unique abilities that cannot be accounted for on purely mechanistic grounds, although, to a very large extent, a mechanistic explanation can be provided for human bodily function and behavior. The essential difference between man and animal is exhibited most clearly by human language, in particular, by man's ability to form new statements which express new thoughts and which are appropriate to new situations. ...

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> In short, then, man has a species-specific capacity, a unique type of intellectual organization which cannot be attributed to peripheral organs or related to general intelligence and which manifests itself in what we may refer to as the "creative aspect" of ordinary language use -- its property being both unbounded in scope and stimulus-free. Thus Descartes maintains that language is available for the free expression of thought or for appropriate response in any new context and is undermined by any fixed association of utterances to external stimuli or physiological states (identifiable in any noncircular fashion) (Chomsky 1966, pp.3-5.)

It is not difficult to see a virtual conflict between such semi-humanism of Cartesianism and a straightforward naturalism which says that human language is nothing but a natural phenomenon. Because of this conflict Chomsky's attitude toward natural science in the mid-1960's is ambivalent:

> One may ask whether the necessity for present-day linguistics to give such priority to introspective evidence and to the linguistic intuition of the native speaker excludes it from the domain of science. The answer to this essentially terminological question seems to have no bearing at all on any serious issue. At most, it determines how we shall denote the kind of research that can be effectively carried out in the present state of our technique and understanding.
> (Chomsky 1965, p.20.)[95]

In 20 years from this point, however, the tone of Chomsky's voice has completely changed:

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95. Also see Chomsky 1972, p.14.

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> Linguistics, conceived as the study of I-language ["competence" in Aspects] and S_0 ["innate schema" in Aspects], becomes part of psychology, ultimately biology. Linguistics will be incorporated within the natural sciences insofar as mechanisms are discovered that have the properties revealed in these more abstract studies; indeed, one would expect that these studies will be a necessary step toward serious investigation of mechanisms. (Chomsky 1986, p.27.)

> The study of language structure as currently practiced should eventually disappear as a discipline as new type of evidence become available, remaining distinct only insofar as its concern is a particular faculty of the mind, ultimately the brain: its initial state and its various attainable mature states. (Ibid., p.37.)

If we were to think that the difference between these two periods is a reflection of actual technical progress in generative grammar, we would miss the point. These two passages from Knowledge of Language (1986) actually mention no technical progress by virtue of which naturalization has come to be possible, but simply predict future progress. In this respect, Chomsky's voice now sounds like that of Bloomfield in the paper we quoted at the beginning of 5.1.2.2.(Bloomfield 1936). Both of them are simply prophesies about the future progress of the natural sciences.

Between these two periods there exists a deep change of Chomsky's view on knowledge of language and its acquisition that makes the present full-fledged naturalism of Chomsky possible.

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At the Aspects stage, Chomsky thinks that native speaker's knowledge of language is a kind of theoretical knowledge in our sense and that the process of language acquisition is a kind of epistemic justification like theory construction of scientists. A child is considered more or less as a little linguist who constructs a theory about the grammar of his/her future language from primary linguistic data:

> On the basis of such data, the child constructs a grammar - that is, a theory of the language of which the well-formed sentences of the primary linguistic data constitute a small sample. To learn a language, then, the child must have a method for devising an appropriate grammar, given primary linguistic data. As a precondition for language learning, he must possess, first, a linguistic theory that specifies the form of the grammar of a possible human language, and, second, a strategy for selecting a grammar of the appropriate form that is compatible with the primary linguistic data.
> (Chomsky 1965, p.25.)

Thus the process of language acquisition is understood as the process of establishing epistemic justification for one theory of language (grammar) over others[96]. As a consequence, the child's acquisition of language and a linguist's theoretical activity are considered analogously.[97] The apparent difficulty of such a view is that there is no decision procedure in any actual theoretical activity of scientists and there is no

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96. Cf. Chomsky 1962, p.533, Chomsky 1965. p.26.

97. Chomsky 1973, p.11, Chomsky 1965,p.30.

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guarantee that a scientist who applies a particular method to the given data will eventually discover and establish a correct theory while every child who grows up in a speech community always eventually acquires (determines) the same language, except for certain individual variations.[98] The requirement for linguistic theory as a theory of language acquisition is much more specific and deterministic than that for general methodology of science, if there is any. To supply this extra methodological or procedural content to linguistic theory is the basic problem for the theoretical view of language acquisition ("the child as a little scientist"). This is the problem with which Chomsky has been struggling since Logical Structure of Linguistic Theory (1955) in his attempt to establish realistic view of grammar through the concept of linguistic theory with an evaluation measure as an essential element.

This approach to the problem of language acquisition as well as that of grammatical realism is quite hopeless since the child's process of acquiring language and the

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98. Later in the same book (Aspects) Chomsky makes a comment on this theoretical process to the effect that it is not a conscious formulation of rules or hypotheses. As we remarked at 5.1.4., the obvious difficulty of such a modification is that there is no point of calling this process theory construction by a child if it is totally inaccessible to his consciousness. Grammar is a theory for linguists, but not for children. Curiously enough, exactly the same modification is made by Quine in his explanation of initial learning process. See Quin1967, p.122. In a word, Chomsky at this period and Quine share the view that knowledge of language is theoretical.

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mode of resultant knowledge are quite different from scientists (linguists)' theoretical activity and the resultant theoretical knowledge. In a word, knowledge of language the child acquires is atheoretical knowledge without any ground or justification while scientists' knowledge is theoretical one for the establishment of which epistemic justification is absolutely necessary. Roughly speaking it is in the mid-1970' that this atheoretical aspect of knowledge of language is explicitly recognized by Chomsky:

> Knowledge of physics is conscious knowledge; the physicist can expound and articulate it and convey it to others. In contrast, the other two systems [grammar and common sense] are quite unconscious for the most part and beyond the bounds of introspective report. Furthermore, knowledge of physics is qualitatively distinct from the other two cognitive structures in the manner of its acquisition and development. Grammar and common sense are acquired by virtually everyone, effortlessly, rapidly, in a uniform manner, merely by living in a community under minimal conditions of interaction, exposure, and care. There need be no explicit teaching or training, and when the latter does take place, it has only marginal effects on the final state achieved. ... Knowledge of physics, on the other hand, is acquired selectively and often painfully, through generations of labor and careful experiment, with the intervention of individual genius and generally through careful instruction.
> (Chomsky 1975, p.144.)[99]

Such a realization itself already contains radical

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[99]. Cf. ibid., pp.157, 205, Chomsky 1986, pp.12, 222, 263.

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departure and criticism of traditional epistemology. Chomsky, as Austin and we do, challenges both beliefism and justificationism of traditional epistemology:

> Note that knowledge of language is quite different in character from the kinds of knowledge discussed in the Gettier cases; we do not "believe" rules of grammar or other cognitive systems, as John Fisher properly emphasizes. (Chomsky 1980, p.93.)
>
> In this case [knowledge about the use of "each other"], surely, we think it would be stretching the terms "grounding" or "justification" or "having reasons" beyond any point where they might serve the epistemological function demanded of them to say that the knowledge is grounded or justified or supportable by good reasons; rather it is, in significant respects, caused.
> .... Rather, it seems that the concept of "grounding","justification", and "reasons" may be inappropriate in many instances to an analysis of the nature and origin of knowledge... (Chomsky 1980, pp.94-95.)[100]

However, the realization of the insufficiency of traditional epistemology, more specifically traditional epistemological internalism, itself doesn't entail naturalistic view of knowledge. The recognition of the independent value of atheoretical knowledge doesn't necessarily lead one to a naturalistic view of knowledge. We cannot characterize Chomsky's recent view of knowledge simply by his critical attitude to traditional epistemology to which he used to belong.

It is the unique combination of the criticism of

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100. Cf.Chomsky 1986, p.264.

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traditional epistemology and a highly biological view of the origin of atheoretical knowledge that characterizes Chomsky's current naturalistic view of knowledge. According to this view, the development of knowledge of language in a child is considered as a phenomenon similar to the development of organs such as heart, arm, or eye:

> ...we learn how to do the high jump. But we do not learn to have arms rather than wings, to walk or run rather than fly, to have binocular vision with analysis of stimuli in terms of linear contours, or to adhere to the principle that linguistic rules meet various conditions of universal grammar. These requirements are elements of the genetically determined initial state, though of course they may only come into operation at a particular stage of maturation...
> (Chomsky 1980, p.238.)

> A physical organ, say the heart, may vary from one person to the next in size or strength, but its basic structure and its function within human physiology are common to the species. Analogously, two individuals in the same speech community may acquire grammars that differ somewhat in scale and subtlety . What is more, the products of the language faculty vary depending on triggering experience, ranging over the class of possible human languages (in principle).
> (Chomsky 1975, p.38.)

This new view of language acquisition is totally different from the earlier one. The earlier view of language acquisition is more or less based on traditional internalism, and it is a natural consequence of Chomsky's Cartesian view of human beings, namely a human being as conscious and free agent. On the other hand, the new view

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is a radical externalism[101] that assimilates the becoming of knowledge with physical and mechanistic development of bodily organs in which there is very little room for the conscious activity of the subject.[102] [103] From the hidden conflict between Cartesianism and naturalism in the mid-1960's naturalism has emerged as the dominant element.

Once such a naturalistic and mechanistic view of language acquisition is established, related cognitive concepts are also a given naturalistic interpretation. To know a language as a native speaker is interpreted as having a particular "mental structure" determined by genetic constitution and triggering stimuli given in a speech community, and to recognize a particular grammatical fact (to intuit a grammatical fact) is considered as having a certain representational state of "mind" computed by that structure:

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101. Chomsky makes explicit reference to Alvin Goldman, see Chomsky 1980, p.99.

102.
> ...and further, evidence has been provided for the hypothesis that the principles of UG constitutes part of the structure of IS [initial state] and play a "causal role" in determining AS [attained state] (note that in the latter case, the notion "causal role" is appropriate, since questions of will and choice do not appear to enter - AS is determined, it is postulated, by IS, given experience).
> (Chomsky 1980a, p. 55; underline is A.K.'s.)

103. "If so, then knowledge of language need not be justified knowledge; it may simply be caused." Chomsky 1980, .93. Cf. ibid., p.94.

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> To know a language, I am assuming, is to be in a certain mental state, which persists as a relatively steady component of transitory mental states. What kind of mental state? I assume further that to be in such a mental state is to have a certain mental structure consisting of a system of rules and principles that generate and relate mental representations of various types. (Chomsky 1980, p.48.)[104]

Now terms like "mental structure" and "mental state" "mental organ", "cognitive structure" are frequently used for denoting the substantive form of knowledge of language. Though the term "mental" indicates Cartesian origin of Chomsky's thought, it doesn't mean a special substance that doesn't belong to natural and mechanistic order. It now means a brain described at a high level of abstraction; "mind" has been thus naturalized:

> Suppose that we proceed further to regard talk of mind as talk about the brain undertaken at a certain level of abstraction at which we believe, rightly or wrongly, that significant properties and explanatory principles can be discovered. Then statements about R [the relation of knowing] and L [language as abstract entity] belong to the theory of mind, and one task of the brain sciences will be to explain what it is about H's brain (in particular, its language faculty) that corresponds to H's knowing L...
> ... The statements of a grammar are statements of the theory of mind about the I-language, hence statements about structures of the brain formulated at a certain level of abstraction from mechanisms. (Chomsky 1986, pp.22-23.)

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104. Cf. Chomsky 1986, pp.26,270.

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Thus, Chomsky's naturalism about language is completed; to know a language is to have a certain brain structure, just as to be a male is to have certain genetic structure.

The most prominent change of the particular contents of linguistic theory (Universal Grammar) brought about by this naturalistic turn is the way the linguistic theory conditions the range of possible grammars. Under the old view the linguistic theory was a kind of formal framework in which linguists as well as children can construct various grammars as empirical hypotheses given empirical data. Such a framework more or less looks like a notational convention of a formal system which imposes no substantial conditions on the contents of possible grammars.[105] Consequently the number of grammars that can be constructed in such a framework is virtually infinite, and the problem of evaluation measure was always the central issue.

On the other hand, the linguistic theory (Universal Grammar) under the new view is a theoretical representation of the innate cognitive structure of mind/brain. Therefore, it cannot be simply a formal system any more; it now has to have substantial contents about what is originally in this cognitive structure. Since the child's language acquisition is now considered as a

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105. Cf. Chomsky 1965, p.31.

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mechanistic development of this initial structure, the concept of evaluation measure almost loses its significance; there is no evaluation measure since there is no one who evaluates theories or no theories to be evaluated. Consequently, what has to be accounted is not the determination of one grammar out of infinitely many possibilities, but the derivation of actual variation of languages out of the same original structure through mechanistic process.

It is the current framework of Chomskyan generative grammar called Government and Binding theory (G.B.) that realizes the substantial contents of a linguistic theory thus required under the new mechanistic view of knowledge. In short, Universal Grammar in this framework consists of several systems of principles that are supposed to be universal for any human language and a certain number of parameters each of which has only two possible values (positive or negative). Under this framework, the determination of a grammar for the child is nothing but the mechanistic fixation of the values of parameters. Chomsky calls this radical shift of linguistic theory -- from the rule-system of the Aspects stage to the system of principles and parameters of G.B.-- "the second conceptual shift"[106]. This shift of linguistic theory is the most significant consequence of the fundamental change of

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[106]. Chomsky 1986, p.146.

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Chomsky's view of knowledge:

> In terms of the second conceptual shift, we no longer consider UG as providing a format for rule systems and an evaluation metric. Rather, UG consists of various subsystems of principles; it has the modular structure that we regularly discover in investigation of cognitive systems. Many of these principles are associated with parameters that must be fixed by experience. The parameters must have the property that they can be fixed by quite simple evidence, because this is what is available to the child... Once the values of parameters are set, the whole system is operative. Borrowing an image suggested by James Higginbotham, we may think of UG a an intricately structured system, but one that is only partially "wired up". The system is associated with a finite set of switches, each of which has a finite number of positions (perhaps two). Experience is required to set the switches. When they are set, the system functions. (Chomsky 1986, p.146.)[107]

Here Chomsky still uses the cognitive term "evidence", intentionally or unintentionally. However, this concept cannot have significance any more under the current mechanistic view of language acquisition. Evidence is not the name of a natural event in itself, but an event with a certain cognitive value for a certain cognitive agent who holds a particular hypothesis. Evidence is something that gives a reason to a cognitive agent for a certain judgment. Now that there is no cognitive agent who make judgment or decision in the process of language acquisition, "evidence" has no sense. What can mechanistically fix the values of

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107. Also see Chomsky 1986, p.102, Chomsky 1982, p.7.

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parameters is not "evidence" but stimuli.[108]

Universal Grammar, which was considered as a theory of "innate ideas" or "innate scheme" under the old internalistic concept of language acquisition, is now considered as a theory about a special biological constitution specific to human beings as a biological species. This special constitution is manifested as human beings' possession of language, but is a purely biological feature determined mostly by genetic structure of homo sapiens. Chomsky still thinks that language is unique to human beings as Descartes did, but this unique feature is now interpreted as determined by the genetic structure, just as the long nose of elephants as their unique feature is determined by their genetic structure. Certain humanistic elements of Chomsky's thought possessed under his Cartesianism now completely give way to strong biologistic naturalism:

> Throughout the discussion I have been referring to <u>human</u> language and <u>human</u> cognition. I have in mind certain biological properties, the most significant

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108. The same thing should be remarked for another term that is frequently in the G.B. framework, namely "experience". "Experience" as a concept relevant to the theory of acquisition is a cognitive agent's conscious comprehension of the relationship between itself and its environment/objects as a meaningful(structured) world in the process of the former's activity of living. If the process of language acquisition is considered as a purely mechanical one, as Chomsky currently does, this concept has no place in the process. "Experience" in his current framework can have no other meaning than stimulus.

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> of these being properties that are genetically determined and characteristic of the human species, which I will assume for the purpose of this discussion to be genetically uniform, a further idealization. These properties determine the kinds of cognitive systems, language among them, that can develop in the human mind. In the case of language, I will use the term "universal grammar" to refer to these properties of human biological endowment. Thus the properties of universal grammar are "biologically necessary", but in the interesting cases not logically necessary elements of what someone might choose to call a language. (Chomsky 1980, p.28.)

To summarize, the naturalistic turn of Chomskyan generative grammar that started in the mid-1970's and was completed by the early 1980's has the following components: (1) the thesis of the atheoretical nature of knowledge of language and the consequent criticism of traditional epistemology, (2) a causal and mechanical view of language acquisition, (3) a shift from a system of rules to a system of principles and parameters in the linguistic theory (UG).

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CHAPTER 5 CRITIQUE OF CHOMSKYAN LINGUISTICS (PART II)

5.2. The Critique of the Naturalism of Current Chomskyan Linguistics

As we have shown in 5.1., Chomsky now takes a strong naturalistic view about language after several significant developments of fundamental concepts of generative grammar. Thus, he now claims that "[t]he statements of a grammar are ... statements about structures of the brain formulated at a certain level of abstraction from mechanism."[1] Whatever this "abstraction from mechanism" may mean, Chomskyan generative grammar now claims that linguistic phenomena are phenomena about objects (brains) in the natural world that can be objectively described and explained through the methods of natural science like all other natural phenomena. Thus, Chomskyan generative grammar now considers itself as a part of natural science, and is sharply opposed to the humanistic view of language which sees language as the essence of human being not as a

1. Chomsky 1986, p.23.

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biological species but as an essentially self-conscious and self-making entity which becomes itself only by knowing itself. This ontological as well as methodological opposition between naturalism and humanism, which we have followed since the beginning of this work, is by no means imposed by us without being recognized by Chomsky as such. On the contrary, Chomsky himself contrast these two views by symbolically representing them by means of two great Italians: Galileo and Vico.[2]

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2. In Rules and Representations, Chomsky characterizes his view by comparing Galileo and Vico and identifying himself with the former. In this passage Chomsky takes what we call the humanistic view of language as an explicit target of criticism to defend his Galilean naturalism:

> It might be that physics with its various offshoots, developed through inquiry in the Galilean style, is a remarkable historical accident resulting from chance convergence of biological properties of the human mind with some aspect of the real world. Whether this proves true or not, we have no present alternative to pursuing the "Galilean style" in the natural science at least.
>
> Some might argue, perhaps along Vicoesque lines, that we can do still better in the "human sciences" by pursuing a different path. I do not mean to disparage such possibilities. It is not unlikely, for example, that literature will forever give far deeper insight into what is sometimes called "the full human person" than any mode of scientific inquiry can hope to do. But I am interested here in a different question: To what extent and in what ways can inquiry in something like "the Galilean style" yield insight and understanding of the roots of human nature in the cognitive domain. ....
>
> We might tarry for a moment on the reference to Vico, and the view that the products of our mind are "made by men" and hence accessible to an approach quite different from that of the natural sciences... Have we, as individuals, "made" our language? That

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Though which discipline of natural science they think is the most relevant to linguistics differs between Chomsky and Bloomfield, Chomskyan generative grammar and Bloomfieldian/post-Bloomfieldian linguistics now reach an agreement that linguistics is a natural science.

> seems either senseless or wrong. We have no choice at all as to the langauge we acquired... Was the language "made" by our remote ancestors? It is difficult to make any sense of such a view. (Chomsky 1980, pp.9-11)

Chomsky's point that language cannot be considered as "made" by individual human beings in any sense seems to be perfectly valid, and this is also pointed out by Saussure ("Of all social institutions, language is least amenable to initiative", Saussure 1916, English translation, p.74).

However, this remark of Chomsky doesn't constitute a valid criticism of the humanistic view of language as we understand it here. For the essence of humanistic view in this sense does not consist in a crude idea that language is made by human beings as a sculpture is made by an individual or a castle is made by a collectivity of individuals. According to our view expressed in chapter 1, the real point of the humanistic view is that language is a normative entity whose existence is based on its natives' activity and normative knowledge, as we discussed in chapter 4. It is this idea that has to be really contrasted to the Galilean naturalistic view which presupposes the objective existence of language apart from human activity and knowledge.

It might be thought that this opposition between naturalism and humanism is only a methodological one and, therefore, should be resolved on an empirical ground rather than philosophical consideration of ontology. However, it is not the case. As we already discussed in 5.1.2.2., the two methods contain different concepts of "basic facts" against which theories are empirically tested. For the humanistic view, the contents of native knowledge of people who are investigated constitute basic facts in linguistics while the contents of knowledge of the objects to be investigated have no place in the methodology of natural science ("Galilean style). For the more detailed discussion of this problem, see 5.2.2. This is what we mean when we say that naturalism is a problem in 3.3.3.

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We have serious doubts about this claim. The fundamental reasons for these doubts have been already given in Chapter 1 through Chapter 4. In this section, we develop our interrnal criticism of Chomskyan naturalism on the basis of our interpretation in Chpater 5-I. In the following, we first offer some prima facie reasons to cast doubt on Chomsky's claim of naturalization of grammar(5.2.1.), and examine the significance of deductive explanation and acquisitional explanation in current Chomskyan generative grammar (G.B. theory) to see whether they really constitute explanation of language as a natural (biological) phenomenon (5.2.2. and 5.2.3.).

After this, we examine the possibility of naturalization of grammar beyond current practice in Chomskyan generative grammar, and show that this possibility crucially depends on an individualistic view of language, which Chomsky firmly endorses (5.2.4.). Chomsky's linguistic individualism consists in the idea that a common language --a particular language such as English, Dutch, or Chinese-- and its speech community are not scientifically valid concepts because of their internal variation. We will show that his argument for this view lacks an adequate ground, but rather is motivated by his idea about the relationship between universals (e.g.English) and their instantiations (e.g. dialects of English), which we think is deeply misguided (5.2.5.).

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Thus, we will conclude that Chomsky has no ground for his individualistic view of language, and that his naturalism and individualistic view of language should be considered an ideology or a dogma in the sense that it is asserted and clung to regardless of the nature of linguistic phenomena and the actual theoretical practice of linguistics, just as Bloomfield's physicalism was separated from his view on particular aspects of language as well as from actual practice of linguists.

5.2.1. Prima Facie Reasons to Cast Doubt on Chomsky's Claim about the Naturalization of Grammar.

In his current naturalistic framework, Chomsky claims that his linguistic theory and grammars constructed within it are empirical theories about brain structures of human beings expressed at a highly abstract level, just as an astronomer's theory of thermonuclear reactions inside the sun is an empirical theory stated at a highly abstract level.[3] Moreover, he claims that current practice in Chomskyan generative grammar offers positive empirical support for naturalism as much as possible within the methodology of natural science. Chomsky claims that theoretical constructs in current Chomskyan linguistics

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[3]. See Chomsky 1980, pp.189-192.

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have "psychological reality", just as theoretical constructs of physics have physical reality insofar as a physical theory receives empirical support.[4] We think that

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4. As we already remarked, there are two meanings of "psychological reality".

One is Sapir's concept of the psychological reality of linguistic categories (e.g. phonemes) that is essentially based on a native speaker's recognition. In this sense, that a linguistic category is psychologically real means that this category is recognizable by a native speaker as such on the basis of his/her normative knowledge common to his/her speech community. See Sapir, 1933. In Aspects Chomsky uses the term "psychological reality" more or less in such a sense. See Chomsky 1965, p.193 note. 1.

As Chomsky moves more and more toward naturalism, Chomsky's interpretation of this concept of Sapir gradually departs from its original sense. Thus, Chomsky's representation of Sapir's concept of "psychological reality" in Rules and Representations (Chomsky 1980, pp.107-108) is highly unfair to Sapir, as Chomsky admits. According to this interpretation, Sapir's concept of psychological reality doesn't mean any more than a theoretical concept's conformity to, and ability to account for, linguistic data in general. Sapir's idea is not a formalistic or nominal one that asserts that if a theoretical concept explains any linguistic evidence whatever, then it has psychological reality. For Sapir, there is only one fundamental type of "data" that is relevant to the psychological reality of linguistic categories, and that is their recognition by native speakers. This concept of psychological reality belongs to the science of knowledge that studies the content of knowledge.

Another concept of the psychological reality of a linguistic category is comparable to the concept of physical reality of concepts of physics. In this sense, a linguistic category's being psychologically real means that this category plays a crucial rule in a psychological theory that explains and describes a causal mechanism of psychological processes, cognitive as well as non-cognitive. When Chomsky claims the psychological reality of theoretical constructs of linguistics after the naturalistic turn, what he means is close to this concept. See Chomsky, 1980, pp.189-190. This concept of psychological reality belongs to psychology and physiology as a science that studies naturalistic basis of cognitive activities. Many chemical substances that control our emotional states have psychological reality in this sense,

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we cannot accept immediately these claims because of the following prima facie reasons.[5]

First, we have shown that the proper object of generative grammar is not any object external to the linguistic subject, including his body organs, but the contents of his knowledge, and the method of "intuition" or "introspection" is necessary only because of this feature (5.1.2.3.). However, in the third chapter, we also argued that we cannot naturalize knowledge simply by introducing such words as "representation", "code", or "computation". If Chomsky's concepts of "representation" and "computation" are similar to those of Fodor's or Pylyshyn's, we have a good reason to think that Chomsky's claim is based on an incorrect analogy between a non-natural code based on the knowledge of a code, as in the case of a computer code, and a natural code based on causal

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but not in the first sense.

What makes Chomsky's recent writing on this issue puzzling is his conflation of these two concepts, intentionally or unintentionally. Something can have psychological reality in the second sense if it causes a certain psychological process even though this something itself cannot be recognized by the subject of this process. On the other hand, if something is not recognizable by a cognitive agent, it cannot have psychological reality in the first sense. Therefore, evidence that is relevant for the psychological reality in the first sense (e.g. the results of Harris's paired utterance test) is quite different from evidence relevant to psychological reality in the second sense (e.g. the existence of the priming effect of a certain stimulus insentence processing).

5. Many linguists express doubt about the second claim. For the most clear expression of such doubt, see Bresnan and Kaplan 1982, xx-xxii.

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relation. Moreover, the situation of a linguist who tries to naturalize grammatical facts through the concept of representation is much worse than that of an epistemologist who tries to naturalize knowledge in general through this concept. If he/she interprets a speaker's knowing a grammatical fact <u>that</u> p as his having mental representation whose content is p and that p is true, the linguist has to face a difficult problem of determining whether a proposition about a grammar of a language is true or not without appealing to native speaker's knowledge of grammatical facts in order to know whether the speaker really knows what he/she claims that he/she knows. For example, a naturalistic linguist who studies English grammar eventually has to determine whether <u>that</u> p is, for example, a grammatical fact of English or not without taking English speakers' judgments or intuitions about this "fact", including his/her own judgments as a native speaker of English, as the final criterion of factuality. Remember that such a request of the determination of a "fact" independent of objects' "intuition" or "judgment" is not an unreasonable one at all in what we usually call the natural sciences. We can know whether <u>that</u> p is a fact about water or not without appealing to knowledge of any special population (natives of water), and there are no such special populations. This is also the case even when we investigate human organs such as hearts or brains. On the

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other hand, we don't see any immediately conceivable answer to this question concerning the independent factual basis of grammatical facts.[6] Even if we appeal to behavior of

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[6]. We cannot say that the structures of brain themselves can be the independent basis of grammatical facts. This answer, stated in this way, may sound plausible, but if we think about how it actually can be executed, we have to realize that this plausibility is based on our tacitly smuggling native knowledge as an independent factual basis into the process of theory confirmation, which we already observed in Bloomfield-Quinean naturalistic explanation.

The problem such an approach eventually has to face is this: how can we know that a grammatical fact(e.g. "it is raining" is a sentence of English) is really a fact on the basis of brain structure without taking the manifestations of native speakers' knowledge such as judgments or intuitions about this "fact" as an independent factual basis.

In other words, our point here is that it is extremely difficult even to imagine that natives' knowledge of a language, say English, is replaced by a more accurate definition of English based on biological properties so that natives' "knowledge" of English is not systematized but replaced by linguists' scientific knowledge about English, just as Ptolemy's theory and "common sense" based on that was replaced by Copernicus's theory. Of course, here we have to carefully distinguish native knowledge of language and natives' self-image based on their self-reflections to avoid a misunderstanding that we claim the "incorrigibility" of natives' judgments about their own language (see 5.1.3).

The essential difference between these two cases is that the revision of "common sense" about the movement of the sun is a revision of our beliefs about our environment while the revision of our native knowledge of our own language, if possible at all, amounts to the change of our linguistic identity. Suppose that you are a speaker of American English and that the international congress of linguists declares that sentences like "It is raining" or "It is snowing" are actually not the sentences of English on the basis of empirical study of the brain structures of English speakers. What would be your reaction? Isn't is that they are not studying English, but something else? If you believe in natural science, do you change the way you speak e.g. by adapting such expressions as "The rain drops are falling."?

Can a person remains a speaker of the same language

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speakers, observations of such behavior become the basis of grammatical facts only when we already know what the speakers know as native knowledge (see 5.1.2.2.). Moreover, such a behavioristic approach is exactly what Chomsky criticizes about post-Bloomfieldians on the basis that the latter's grammar cannot meet descriptive adequacy , which means the grammar's conformity with native knowledge.

The root of this difficulty is the normativity of language, namely the inseparability of knowledge and its object in language. Because of this normativity, a representation and a fact represented by it cannot be two different things in knowledge of language, insofar as we assume that natives know their language in a genuine cognitive sense. For if they are two things and there is a grammatical fact on the one hand, and the speaker's representation of that fact on the other, we always can

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after such a revision? If the answer is "yes", this would mean that this speaker didn't know his own language correctly before such a revision. At least Chomsky himself rejects such a "normative" (in a vulgar sense) concept of langauge (Chomsky 1986, p.16), which implies that there is a standard for the correctness in a language outside its native speakers. If the answer is "no", then the purported scientific discovery about this speaker's language is actually not about his language, but about another language to which he is forced to convert. In any case, the scheme of eliminative materialism doesn't seem to apply normative knowledge of language unless eliminative materialism itself is radically revised, insofar as by "language" we mean a language spoken in its speech community.

Actually Chomsky's concept of "idealization" is deeply related to this problem. For the more detailed argument, see 5.2.5.

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(and have to) ask (1) whether the content of a speaker's representation is true or not, and (2) how we can know the truth of represented fact independently of the fact that the speaker represents it as a grammatical fact of his/her language. That we cannot answer either of these questions means that we cannot use the ordinary concept of representation for grammatical facts. It is exactly because of this normativity that Chomsky's concept of descriptive adequacy is valid concept in linguistic and that his criticism of post-Bloomfieldian linguistic in Current Issues in Linguistic Theory is also valid (see 5.1.2.3.). Otherwise, we would have to say that this standard itself has no independent ground and that there is no reason to select Chomskyan generative grammar over post-Bloomfieldian linguistics.

Secondly, we cannot help feeling a kind of bewilderment when a grammarian who has described and systematized the contents of speaker's knowledge suddenly says that what he has described is the structures of the speaker's brain at a certain level of abstraction. Think about a similar case for a logician. Suppose that a logician who has constructed axiomatic systems of first order predicate logic for a long time suddenly declares that his theories describes the universal and genetically conditioned structure of human brain and the representations within it at a certain level of abstraction

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since these facts of logic are universally recognizable by any ordinary human beings. Suppose, moreover, that he says that it is not a mere conjecture but a hypothesis supported by a good amount of evidence since it explains why all human beings universally recognize these facts of logic without learning them and there are no alternative explanations for this fact, namely that this is the best explanation available so far. What Chomsky claims is basically the same as this. Their fundamental "hypothesis" is that to know grammatical or logical facts is to have the representations of these facts in the brain, and their claim is that this hypothesis gets positive empirical supports from their study. What is problematic is this second claim.

We have these two reasons to cast doubt on Chomsky's naturalistic claim about language. The first one is more radical and is rooted in the very nature of language and knowledge of language, which we have extensively discussed in previous chapters. It casts doubt on the very claim that this naturalistic view is an empirical hypothesis that can be tested on a common unproblematic ground. The second one is more concrete and local. It cast doubts on the more specific claim that linguists' practice under the current framework of Chomskyan generative grammar (Government and Binding theory).

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To discuss this second point more, we have to take a closer look at the actual theoretical explanations in this current framework. In 5.2.2., we examine the nature of deductive explanations in G.B. theory and their relevance to Chomsky's naturalistic claim, and we examine the nature of acquisitional explanation in G.B. theory in 5.2.3.

On the other hand, we ultimately have to examine the scientific validity of concept of "common language" and "speech community" that cannot be specified by any intrinsic descriptions of individual biological organisms as such to develop our first reason against Chomskyan naturalism. We deal with this problem in 5.2.4. and 5.2.5.

5.2.2. The Nature of Deductive Explanation in Current Chomskyan Generative Grammar(G.B. Theory)

In this and the next sections we examine Chomsky's claim that his naturalistic view of language receives empirical support from the current theoretical practice of Chomskyan generative grammar (G.B. theory). This amounts to a specific claim that theories in the current framework explain linguistic data, and, therefore, these data give empirical support for the psychological reality (in the second sense) of theoretical concepts of G.B. framework. In other words, Chomsky claims that these data give

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empirical support to the idea that knowing a language is having a specific brain structure. Since there are two types of explanation in Chomskyan generative grammar, namely deductive explanation and acquisitional explanation, we deal with them separately.

The point of our examination of deductive explanation here is to see whether Chomsky's claim with respect to this type of explanation is any more than our caricatured logician's claim. If this type of explanation gives us only logical and formal relationship among contents of knowledge of language, we have to conclude that what linguists are practicing is the systematization and classification of the contents of native knowledge of various languages, and that Chomsky's naturalistic hypothesis of grammar remains a fantastic conjecture without any specific empirical support beyond merely logical possibility.

5.2.2.1. Analogy between Linguistic Explanation and Physical Explanation

Chomsky's recent claim that his linguistic practice goes beyond this fantastic stage is fundamentally based on the analogy between explanation in natural sciences like physics and the explanation in the current framework of generative grammar. Therefore, we have to examine what kind of evidence and explanation linguists actually uses

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and whether there is a significant analogous relationship between their cases and the case of natural sciences, especially physics. Arguments for this claim is typically expressed by passages like the following:

> (i) When Jones is dropped, he falls (6)
> (ii) Jones understands (2) ["who was persuaded to like them"] and (3) ["John is too stubborn to talk to"] in the manner indicated
> (iii) Jones has acquired the knowledge that the facts are as they are on the basis of a certain exposure to data.
>
> How do we proceed to explain these facts? In each case, we proceed by attributing to the person certain properties: in case (6i), mass; in case (6ii), an attained state S_L incorporating a language (an I-language); in case (6iii), an initial state S_0. Returning to Quine's example, Jones obeys the laws of falling bodies because of some property that he has: mass. This property does not suffice to explain why he obeys the "laws of grammar", so we therefore have to attribute to him other properties, those of S_0 and S_L, just as we attribute properties beyond mass to a molecule of water or benzene or to a cell of the body to explain their behavior....
>
> What is the nature of the states we attribute to Jones? As already discussed, we want to develop the best theory of Jones's behavior, and we find that this best theory attributes to Jones a language faculty with these states, which we can then attempt to characterize at various levels: in terms of neural elements or in terms of general properties of these elements at a certain level of abstraction. At the second level, we propose certain principles, parameters, representations, modes of computation, and so forth, and we seek to explain the facts in these terms, taking this account tentatively to express the truth about language faculty.
>
> (Chomsky 1986, pp.248-249; underlines are A.K.'s.)

To see what kind of explanation is given for Jones' understanding of (2) at this "second level", let me quote related passages in which he describes what kind of

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explanation he means:

> We have every right to assert (tentatively, these being empirical matters) that it is a fact about Jones that his language has the rules R,R', ...: rules of pronunciation, rules of binding theory determining the antecedent for a pronoun, rules determining the meaning of "John is too stubborn to talk to" by a computational process, and so forth. ... These properties of Jones enter into his behavior and understanding but do not determine his behavior, not even his inclinations or dispositions. But throughout, this is discourse about facts, facts about Jones. (Chomsky 1986, pp.242-243.)
>
> Rather, the person uses the lexical properties of persuade under the projection principle, and the principles of Case adjacency, Move-alpha, binding theory, and so on, with values of the parameters fixed in a particular way. (Ibid., p.243.)[78]

Here Chomsky makes an analogy between an explanation in physics ((6i)) and an explanation in current Chomskyan generative grammar ((6ii)). In the first case, what is to be explained (explanandum) is why and how Jones's body

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7. For the actual execution of this type of explanation, see Chomsky 1986, pp.

8. These two explanations represent the explanation in Aspects stage (the one by means of "rules") and the explanation in G.B. framework (the one by means of "lexicon","projection principle", etc) respectively. With respect to the problem of naturalization, they are not different from each other since both use the same basic linguistic categories such as "sentence","phrase","verb", "noun", and "transformation", and the naturalization problem of language ultimately depends on the naturalization of these categories, just as the naturalization of economics ultimately depends on the naturalization of economic value (exchange value). However, we here focus on a specific nature of deductive explanation in the current framework.

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falls when he is dropped, and in the second case the explanandum is why and how he understands certain English sentences as he does. Moreover, Chomsky explicitly remarks here that he wants "to develop the best theory of Jones's behavior." If what is meant by "behavior" is a certain pattern of our body movements and the "explanation of behavior" is what is actually done by the theoretical practice of current generative grammar, and if this endeavor is successful, then this analogy between physics and linguistics should be considered as valid. Both disciplines explain and predict events in the natural world by positing various theoretical entities, mass in the case of physics, and the initial state of language faculty S_0 and its attained state S_L. In both cases, if the theory successfully explains its explanandum, the latter, in its turn, becomes evidence for the supposition that the theory truly describes a certain aspect of the natural world. If this analogy is valid, these theoretical entities in linguistics should be considered as representing reality in the natural world (natural kinds) in the same degree as their counterparts in physics are considered as representing natural kinds. In any case, Chomsky's naturalistic hypothesis should be considered as receiving certain empirical support from the current practice of Chomskyan linguistics.

Despite these similarities, we have strong reasons not

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to accept this analogy unconditionally. For one thing, it is not clear to what extent Chomsky really means that he tries to explain a speaker's (Jones's) behavior. In the second passage we quoted above, Chomsky says that the properties of the speaker that are postulated for the Chomskyan explanation such as initial state or attained state "do not determine his behavior". If the phenomena to be explained are not determined by the theory proposed, whether deterministicaly or probabilisticaly, how can this theory "explain" these phenomena in a sense comparable to the case of physics? In another place, Chomsky explicitly denies that the explanandum of his theory is the behavior of a speaker.[9] Moreover, if we see the actual practice of Chomskyan linguists, what they take as the explanandum or the evidence for their theory is not a behavior of a speaker in a usual sense of the word, but the contents of his intuitive judgments about grammaticality or interpretation of a sentence. In a word, both the explanandum and the evidence of Chomskyan generative grammar are usually the contents of cognitive activities of a native speaker such a judgment, intuition, or understanding. From our point of view, this practice is nothing but a natural consequence of the fact that generative grammar is a science of knowledge and that linguists are studying what natives know.

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9. See Chomsky 1980a, p.54, Chomsky 1975, p.189.

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However, what Chomsky really proposes here to explain is a fact that Jones understands particular sentences in certain ways if we interpret Chomsky's words fairly. In this respect, Chomsky's presentation of the case and the ordinary practice of generative grammarians are subtlely. It is one thing that a particular sentence of English has a certain interpretation, and it is another that a particular native speaker of English (Jones) actually understands this sentence in that way, though there is a non-trivial relationship between them.

On the other hand, Jones's understanding is different from his behaviors in an ordinary sense. The latter are observable just as animals behaviors are observable; both of they are legitimate evidence and explanandum in behavioral science, and the explanation in the latter has a nature comparable to that of physics in that both of them posit various theoretical entities to explain observable events in the natural world. The question we have to raise is, how can Jones's understanding be observed if this is the explanandum in linguistics and Chomsky claims that the mode of explanation in linguistics is analogous to that in physics? Thus the most crucial point in the critical examination of Chomskyan naturalism is not the nature of its theories (explanans), but the nature and the kind of facts that are supposed to be explained by them (explanandum).

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If we think about the nature of understanding, the problem becomes much more complex than it first appears. After all, it is by no means unambiguously clear what is meant to be explained when it is said that a linguistic theory or a grammar constructed in it explains the understanding of a speaker. Let's first see how ambiguous such a phrase is.

5.2.2.2. Ambiguity of Explanandum in Linguistics

Between (6i) -explanandum in physics- and (6ii) -explanandum in Chomskyan linguistics- there is a crucial difference that prevents any straightforward analogy between them: the former is unambiguous while the latter is highly ambiguous. As for (6i), there is no question about what fact is to be explained: the fact that Jones falls when he is dropped, and this is a fact in the natural world. Any theory that explains this fact has to explain why and how he falls. There is no ambiguity about what has to be explained.

On the other hand, if we say that our theory explains the fact that Jones understands particular sentences in a certain way ((6ii)), it is not clear what we are actually going to explain because of the ambiguity of "explanation of Jones's understanding of particular English sentences." We can enumerate, at least, the following five different things as the intended explanandum in (6ii):

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(a) Why the ways Jones understands these sentences are correct - this is the explanation of a grammatical fact of English.

(b) Why Jones as an individual native speaker of English made the judgments he did. This case is further classified into two sub-groups:

(b1) The case in which sentences are unproblematic. The explanation is simply that Jones judged in this way because he knows English and that these sentences have such and such interpretations is a fact of English. If we seek further explanation, the explanation becomes that of (a).

(b2) The case in which sentences are problematic or difficult to interpret and judgments among English speakers vary. The explanation is about what elements of Jones's social and linguistic background as well as his personal idiosyncracy motivated his judgment. We have to think about, among other things, his dialect, social class, and gender, to give an answer. The explanation is sociolinguistic, sociopsychological, and psychological.

(c) Why and how Jones performed a certain psychological act we usually call "understanding"

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under a certain condition - this is the explanation of a fact about an individual's psychological act. The explanation is psychological and physiological.

(d) Why Jones can correctly understand these sentences - this is the explanation of the origin of Jones's knowledge of English. There are two different types of explanation of this fact about the origin of Jones's knowledge of language.

(d-1) Explanation through categories of English. This simply says that Jones correctly understands them since he knows English, and he knows English since he grew up in a speech community of English or learned English as a second language. The concept of causality doesn't play any essential role in this type of explanation.

(d-2) Explanation through non-linguistic categories. In this case, we seek the causal correlation between stimuli he was exposed to and the attained sate. The explanation is essentially causal.

Each one of these alternatives is a possible explanandum when a linguist claims that his/her theory explains Jones's understanding. There is no comparable ambiguity in the explanation of Jones's falling. The measurement of success

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of theoretical "explanation of Jones's understanding" crucially depends on which one(s) are intended to be explained.

Such an ambiguity also exists for other cognitive activities that play an important role in the theoretical activity of generative linguists such as "intuition", "recognition", and "judgment".

Corresponding to this ambiguity of explanandum in linguistics, the way the linguist may handle these cognitive activities is also ambiguous, and the same concrete act of "understanding" or "intuition" can be taken in many different ways. When it is said that understanding or intuition of a speaker is used as evidence for a linguistic theory, there is not one, but many ways a linguist takes this concrete act. A theory that can explain one of them may not explain others. To understand the real nature of explanation in generative grammar, and to assess Chomsky's analogy between linguistics and physics, we have to examine different ways we can handle a concrete act of understanding or intuition.

5.2.2.3. The Nature of Cognitive Activities as Evidence in Linguistics

As we discussed in 4.2.3., various kinds of criticism have been raised concerning the extensive use of these cognitive activities as evidence in generative grammar. Especially,

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when the naturalistic view of language is seriously claimed by Chomsky, the status of these cognitive activities in linguistics as a natural science becomes more problematic.[10] Chomsky replies to such criticism by saying that a linguist performs an experiment on himself when he uses his own linguistic intuition:

> In actual practice, linguistics as a discipline is characterized by attention to certain kinds of evidence that are, for the moment, readily accessible and informative: largely, the judgments of native speakers. Each such judgment is, in fact, the result of an experiment, one that is poorly designed but rich in the evidence it provides. In practice, we tend to operate on the assumption, or pretence, that these informant judgments give us "direct evidence" as to the structure of the I-language, but, of course, this is only a tentative and inexact working hypothesis... (Chomsky 1986, p.36.)

Obviously the force of this reply depends on the validity of analogy between experimental sciences and linguistics and the one between the concept of experiment in natural sciences and the use of "intuition" in linguistics. Namely, this comment of Chomsky has a force as a reply to the criticism that the extensive use of "intuition" in linguistics disqualifies it as natural science only when the performance of intuitive act by a subject (including a linguist himself) is treated in linguistics in the same way

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10. As we already quoted a relevant passage, Chomsky showed more cautious attitude to the problem of the use of linguistic intuition and the nature of linguistic science at the stage of Aspects. See Chomsky 1965, p.20.

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as experimental events, including human behaviors, are treated in natural sciences. Because of the potential ambiguity of the way cognitive activities can be treated, we have to be very careful in assessing the value of this analogy.

To discuss this problem, we have to clarify the general evidential relationship between a theory and an experiment in natural sciences, and to clarify this relationship, we have to first discuss the relationship between a theory and facts relevant to it.

In natural science as a theoretical activity, a concrete natural event is observed as such and described through the application of a set of variables that are specified by the basic categories of each theory such as "mass", "velocity", or "electric charge". Depending on what set of variables the scientist chooses, the same event may be described in many different ways. The results of these descriptions are considered as "basic facts" of each discipline. We call this process of a cognitive agent's (a scientist's) recognizing a fact in the observation of a concrete event yielding of a fact through a set of variables (categories), and these facts yielded facts. When we discuss the evidential relation between a concrete event and a theory, we cannot talk about an event in itself, but have to specify which aspect of the event is

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relevant to a theory, and this concept of yielded fact is indispensable. For example, when a scientist observes Jones's falling, if he/she chooses the variables "mass" and "velocity", his/her observation of this event (Jones's falling) yields a fact that a body with certain mass actually falls with such and such a velocity at time t, but if he/she chooses the variable "homo sapiens", that yields a fact that a homo sapiens actually falls rather than flies. These two yielded facts support completely different theories: one is a law about natural fall of a body, and the other is a law about a biological species called homo sapiens. The indispensability of the concept of yielded fact consists in the fact that we have to apply a specific set of categories when we give a theoretical representation to a concrete event.

These yielded facts are the results of abstraction from a concrete event by means of the application of a selected set of variables (categories), and they are always relative to these categories used by scientists.

Though, thus, there are no observations or facts as such in natural science as assumed by logical positivism because a certain set of categories always have to be applied to them in order for them to give an empirical support to a theory[11], we have to always distinguish a

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11. For a concise summary of the process in which this concept of observation has been formulated and criticized, see Suppe 1977, chapters I and II of "The

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theory as an universal supposition produced in the process of theoretical activity and the facts as the results of the application of relevant categories to concrete observed events if we discuss the empirical support for the theory at all. A theory can receive an specific empirical support as a special type of epistemic justification characteristic to natural science only from the facts, and all facts in a theoretical activity are yielded facts in the sense specified above.

An yielded fact can function either as explanandum or as evidence in a theoretical activity depending on its relationship with the act of supposing a theory. If the yielding of a fact is prior to the formulation of a theory and the cognitive agent raises a question of why this fact is actually a fact, this fact thus recognized is called the explanandum, and a theory that is subsequently formulated to give a reason why this fact is actually a fact is called the explanans. On the other hand, if a yielded fact is recognized as another instance of facts whose reason can be given by a theory that is formulated independently of the recognition of this fact, this fact functions as evidence for that theory. Therefore, the distinction between explanandum and evidence doesn't consist in the nature of a yielded fact itself, but in its place in the theoretical activity of a cognitive agent. For example, if we first

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Search for Philosophic Understanding of Scientific Theories".

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observe Jones's falling and formulate a theory that gives reason why he falls in that way, Jones's falling is our explanandum, but if we first formulate the same theory when we observe an apple's falling and afterward recognize that Jones's falling also can be explained by our theory, Jones's falling functions as evidence for our theory.

In natural science facts are yielded either in the observation of uncontrolled events (natural phenomena) or in the observation of an event tightly controlled in an experiment. The fundamental distinction between them is that in the experiment the scientist has some degree of control over the set of variables that have to be applied to an event when a fact is to be yielded. For example, if Jones falls with a parachute, a scientist who observes this event cannot eliminate the variable of "the resistance of air" if he wants to apply such categories as "mass" and "velocity" to it, while if the scientist designs an experiment, he can make the resistance of air small enough so that he can eliminate this variable when a fact is to be yielded. The essence of experiment in "Galilean style" consists in this control of variables so that an experiment can produce a fact yielded exactly by means of the set of variables that are used by the theory to be tested.

The evidence-hood of an event for a theory of natural science consists in the fact that because of the applicability of a set of categories to it this event

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belongs to a class of natural events that are governed by the alleged laws of nature concerning these categories that the theory asserts valid. When the scientist's theoretical supposition is correct, the yielded fact shows that an instantiation of the alleged laws is actually observed. For example, if the observation of an experimental event yields a fact that a particular body with certain mass falls with such and such a velocity, this experiment give a positive support to all theories that assert the universalized form of this fact. Therefore, it is not an event itself, but these basic facts yielded by a specific set of variables controlled by the experiment that serves as evidence for a theory in an experiment. Because of this control of variables an experiment can give a more specific and stronger support to a theory than observations in general.

Therefore, we have to know what fact is yielded in the observation of a controlled or uncontrolled event and what laws are proposed by a theory, in order to judge whether the experiment gives any positive support to the theory. This is the practice that is always done in every empirical discipline when an observation's value with respect to a theory is seriously evaluated.

In the case of generative grammar, it is claimed that a speaker's act of "understanding" or "intuition" functions as explanandum as well as evidence obtained in an

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experiment that is poorly designed but rich in the evidence it provides". In such a claims, it is assumed as unproblematic that "understanding" or "intuition" can be observed just as the falling of a body is.

We have to ask whether these cognitive activities are observable or not, and, if they are, how and what kinds of facts are yielded in their observations, and what kinds of laws of nature are proposed by a theory to explain these facts.

In general we can treat concrete acts of cognitive activities such as "intuition" or "understanding" that are the manifestation of knowledge in three different ways by taking three different attitudes to these activities and their subjects, and there are corresponding three types of facts related to these acts. Take Jones's act of understanding of an English sentence as an example. A linguist can take this concrete event in the following three different ways by taking three different attitudes to Jones, and he will know different types of facts:

(A) <u>As a manifestation of knowledge of English</u>
In this case, if Jones asserts <u>that</u> p (e.g. "He is too stubborn to talk to" has such and such an interpretation) as a report of his confident judgment as a native speaker of English, a linguist takes p as

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a grammatical fact of English unless the linguist has a particular reason to think that Jones is not reliable or insincere. The linguist takes the content of Jones's assertion as a fact about English on the basis of his recognition that the subject (Jones) is a native speaker of English. The basic precondition for this treatment is that the linguists already knows that the subject knows English through the communication in a common language, directly or through an interpreter. Moreover, when the subject reports how he understands the sentence, the linguist has to understand what the subject says by engaging in the speaking activity with the subject.

The linguist's attitude to the subject in such a case can be characterized as the one between two natives engaging in the speaking activity. The linguist's activity related to Jones cannot be called "observation" in the sense that a natural scientist yields a fact in the observation of an event. To know a particular grammatical fact about English (e.g. such and such a sentence has a certain interpretation) from Jones's act of understanding, the linguist has to understand what Jones says as well as the sentence Jones is understanding, and the linguist has to speak with Jones in a common language to do this. Moreover, to know that Jones is a

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reliable informant about English (a native speaker of English), the linguist has to extensively engage in the speaking activity with Jones before hearing what Jones says about the target sentence. This relationship cannot be characterized as the one between an observer and an observed event.

It might be thought that the linguist's activity is characterized as an observation if the subject (Jones) mostly speaks and the linguist mostly listens to him. However, there is a crucial difference. What makes the observation in natural science an observation is its objectivity, and this objectivity consists in the fact that the observer doesn't have to have any specific relationship with the observed event or object to be an observer though sometimes the observer is required certain technical skills necessary for scientific observation. The situation in the present case is radically different from this. The linguist and Jones cannot be in such a relation; they have to know the same language, and this knowledge of language is by no means a technical skill necessary for linguistic observation. They have to share communal knowledge of language. If they don't know the common language, the linguist cannot know how Jones understands the sentence even less any grammatical facts of English form the

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observation of Jones' behavior however closely the linguist observes it. To know a grammatical fact from Jones, the linguist has to understand what Jones says and to take the content as a fact. If something can be "observed" only by the speakers of a particular language, it is not the objective observation in the sense that the falling of a body can be observed by anybody. The observer and the observed don't have to share any communal knowledge at all.

Therefore, the grammatical fact the linguist knows form the subject in this way cannot be called a fact yielded in the observation of an event. It rather has to be called an understood content taken as a fact. This is one of the fundamental ways we know many things in our life. The relationship we have with other people when we know things this way is not the one between the observer and the observed objects, but the one between natives engaging in the common activity of speaking. When a judge learns a fact about the case from the testimony of a witness, he/she cannot simply observe the witness; he/she has to listen to what the witness says and take it as a fact. To know an understood content taken as a fact, we have to speak with a reliable person or read what is written by a reliable person in the same language

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as ours.

As a special case of this treatment, we can think of the case in which Jones himself is thelinguist. In such a case, the relationship between the linguist and the subject is not mediated by speaking activity, but through so-called "introspection". However, this act seems to be a recollection or a re-enactment of an actual act of understanding a sentence in speaking activity rather than the observation of the act of understanding performed at the same time. We understand a sentence in the most proper way when we listen to other people speaking or read written material, and during such an activity of understanding we usually cannot observe what we are doing. Therefore, the object to be observed (the act of understanding) is absent when we observe it. On the other hand, when we have a pain, we can observe our sensation of pain when we actually have it. The difference between sensations and understanding is that the latter is our activity while the former are not. Since the observation is another activity of our own, it is extremely hard to observe ourselves understanding while it is not difficult at all to observe our having pain. It might be possible for a linguist to acquire a special ability to perform the act of understanding and the act of observation at

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the same time, but the danger is that there is no guarantee that what the linguist performs under such a acrobatic self-observation is the same act that he/she performs when he/she reads a book or listen to what other people say.

In any case, this linguistic introspection is radically different from the observation in natural science or introspection of sensations in which the observed object actually exists when the observer observes it.

(B) As a act of judgment

When the linguist takes the subject's (Jones's) act only as an act of judgment by not taking the content of the subject as a fact for one reason or another, the fact the linguist knows from this act is that the subject makes such and such a judgment under a certain condition. Despite this difference, the relationship between the linguist and the subject in this case cannot be characterized as the one between the observer and the observed object in the sense of natural science since the linguist has to understand what the subject says to know that the subject makes such and such a judgment even though the linguist doesn't take what is said as a fact. The linguist and the subject have to know the common language and

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engage in the activity of speaking for the linguist to know this type of facts. Their relationship still is the one between two natives of a language engaging in the common speaking activity.

Therefore, the fact the linguist knows in this fashion cannot be called a fact yielded in the observation of an event, either. It has to be called an understood fact. That a person makes such and such a judgment is an understood fact. To know an understood fact, we have to speak with other people or read what other people write in the same language as ours.

(C) As complex bodily movements or a behavior

When the linguist watches the subject's (Jones's) bodily movement or a behavior when the subject makes a judgment by not paying attention to what the subject is saying, the linguist takes the same attitude to his subject as he/she takes to animals or physical objects. Since the linguist doesn't have to know the subject's language to take such an attitude, we can characterize the relationship between them in such a case as the one between the observer and the observed object. If they happen to share no language, the linguist has no other way than observing the subject's behavior in such a way. The

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way we observe other people's behavior is clearly different from the way we observe animals behavior or from we observe the motion of a body, but all of them share the common feature that there is no need of shared knowledge of language between the observer and the observed and that they don't have to belong to the same speech community. The objectivity of the observation in these case consists in this fact.

In this case, the fact the linguist knows is appropriately called a fact yielded in the observation of an event. Facts known in this fashion have the same type of objectivity as the facts in natural science have.

It is clear from this three-fold classification of the kinds of facts we can know from a cognitive activity of the subject that Chomsky's analogy between explanation in linguistics and the explanation in natural science like physics is valid only if the explanandum and evidence in the linguistic explanation belong to the third class, namely facts yielded in the observation of events. On the other hand, if the explanandum or evidence in linguistics is either an understood content taken as a fact or understood fact, the analogy fails to hold.

If a linguistic theory explains and gets supports from facts yielded in the observation of events by postulating

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various theoretical entities such as certain brain structures or computational states, these theoretical entities get the same type of reality as all theoretical entities in physics by virtue of which observed physical events are explained. On the other hand, if the linguistic theory explains and gets supports from other two types of facts, linguistic explanation differs from the explanation in natural science in that in the process of linguistic explanation there are involved two clearly demarcated entities, namely the knowledge of language common to the linguist and the subject and the speech community both of them belong to. These two entities are involved not as theoretical postulates that are supposed to explain the subject's behavior, but as the entities by virtue of which the linguist and the subject can communicate with each other. In such a case, the method the linguist uses for knowing the basic facts that function both as explanandum and evidence is not <u>observation</u>, but <u>understanding</u>. However, what we call here <u>understanding</u> is not a general concept of understanding as the one often used in a discussion concerning "hermeneutics" (cf.1.2.2.), but a specific concept of understanding as the speaking activity between two natives. This is what we experience when we speak with our fellow natives; this "method" is applicable to not all human beings even less to all objects in the world. It applicable only within a speech community.

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Because of this limitation to the speech community, this "method" lacks the objectivity the observation in natural science claims, and it is at this point that the analogy between natural science and linguistics conducted with such a "method" collapses. Actually it is not a method for science, but the way we are engaged in our proper activity as a linguistic subject.

Now let's turn to Chomsky's explanation. First we have to re-examine Chomsky's recent expression "explanation of behavior". No doubt what motivates him to use this expression is the analogy between linguistics and physics since if his theory actually explains the behavior, the basic linguistic facts for his theory belong to the third class in our trichotomy and the analogy holds without question. We can see such a motivation in the following passage:

> Suppose that our most successful mode of explanation and description attributes to Jones an initial and attained state including certain rules (principles with parameters fixed or rules of other sorts) and explains Jones's behavior in these terms; that is, the rules form a central part of the best account of his use and understanding of language and are directly and crucially invoked in explaining it in the best theory we can devise. Are we now entitled to say that the rules of the attained state guide Jones's understanding and enter into his behavior, and that the rules of the initial state have "causal efficacy" in bringing about the attained state? Are these further claims, beyond the claim that our best theory of Jones attributes to him encoded rules that operate in this way? Since the first step of the

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> argument exhausted the methods of science, if something else is involved in this second step, then it goes beyond the natural sciences...
>
> I cannot see that anything is involved in attributing causal efficacy to rules beyond the claim that these rules are constituent elements of the states postulated in an explanatory theory of behavior and enter into our best account of this behavior. (Chomsky, 1986, pp.252-253; the underlines are A.K.'s except the one under "further".)

The claim made by saying "I cannot see that anything is involved in attributing causal efficacy to rules beyond the claim that these rules are constituent elements of the states postulated in an explanatory theory of behavior and enter into our best account of this behavior.", is that his theory explains an observable behavior by postulating unobservable entities as physicists do. In this same passage he also says that his theory is or can be "the best account of his use and understanding of language." If he means by "use" the behavior of a speaker, this analogy has validity. However, in the passage we already quoted, he also says, "[t]hese properties of Jones enter into his behavior and understanding but do not determine his behavior not even his inclinations or dispositions".[12] If a theory about behavior doesn't specify the agent's behavior, either deterministicaly or probabilisticaly, there is simply no way to tell whether the observed events

12. Chomsky 1986, pp.242-243.

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give any positive support to the theory or not, as we already remarked. Such a theory can be neither supported nor falsified by any empirical data, though it can be a theory about something other than behavior. As a theory about behavior, such a theory is simply not an empirical theory. Moreover, if we remember that it has been an official doctrine of generative grammar that a grammar doesn't determine the behavior of a speaker, either deterministicaly or probabilisticaly,[13] we have to conclude that Chomsky's use of the expression "explanation of behavior" is nothing but an abuse of words and that the linguistic facts in generative grammar are taken at the first or second level of our classification. In other wards, it exclusively uses the method of <u>understanding</u> of what speakers says, but not that of <u>observation</u> of events. Thus, the analogy Chomsky claims doesn't hold at all; physics and linguistics (generative grammar) use completely different methods.

However, there still remains a problem whether the

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13. This is the position Chomsky hardly compromises since Chomsky's criticism of behaviorism (including both Skinner's and Quine's) is crucially based on this doctrine. See Chomsky 1957, p.16, Chomsky 1964, pp.10-11, Chomsky 1965, pp.15. 195 note.5, Chomsky 1975, pp190-195, Chomsky 1986, p.10.

In fact, if the analogy Chomsky claims holds and the basic linguistic facts in generative grammar were <u>facts yielded in the observation of a speaker's behavior</u>, generative grammar would commit the same mistake Chomsky has been warning against since his influential review of Skinner's <u>Verbal Behavior</u>. See Chomsky 1957.

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explanandum of Chomsky's explanation is a understood content taken as a fact (what a speaker knows) or an understood fact (what a speaker does by using language). If what Chomsky's theory tries to explain the latter, his explanation belongs to psychology of individual speakers. The passage about Jones sounds as if it were the case. However, if the explanandum of generative grammar is an understood fact, what a linguist knows from the subject is not that such a such is a grammatical fact of the subject's language, but that the subject makes a certain judgment in a certain circumstance. In such a case, the misunderstanding of the subject would have the same significance as the correct understanding since what the linguist has to know is not what is the correct understanding, but how a speaker actually makes a judgment.

If the task of generative grammar is the explanation of how a speaker actually makes a judgment and the linguist suspends his/her own judgment about the content of the speaker's judgment rather than take the content as a fact about his language, there is no way for the linguist to know what are the grammatical facts about a language. It is not the result of any theoretical or technical difficulty, but the result of the linguist's decision of the purpose of his/her theory. If the linguist wants to know the grammatical facts, namely what a native speaker knows, the

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linguist has to take the concept of "a native speaker of language X" as a primitive concept and take the content of a native speaker's judgment as a fact he/she knows for certain class of cases unless there is a specific reason not to trust the native speaker.

If we consider the actual practice of generative grammarians and Chomsky's characterization of the goal of generative grammar, this is exactly what they are doing. They take the contents of native speakers' (including their own) judgments as basic facts about a language. Considering the nature of generative grammar as a science of knowledge, this practice is the only possible way they can proceed since we have to take people's judgments made under a normal condition as manifestation of knowledge if we want to know what they know.

Therefore, we have to say that the expression "the explanation of understanding" is also a misleading one. When Chomsky says that his theory explains the fact that Jones understands a sentence in a certain way, he doesn't use the term "understand" as a psychologist may use. What he explains is not how Jones as a pariticular individual with various features will understand a particular sentence under a certain circumstance (e.g. under a time pressure), but how Jones as a native speaker understands a sentence as the manifestation of his knowledge. Therefore, if Jones's interpretation is radically different from the grammatical

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fact Chomsky unmistakably knows as a native speaker of English, Chomsky couldnt take what Jones says about English sentences as basic facts since Jones would be disqualified as a native speaker of English because of this misinterpretation under a normal condition. Under such an interpretation of "understanding", the explanation of how a native speaker understands or judges and the explanation of what he/she knows as a native speaker coincide. If we can infer what a person knows from other facts we know that that person knows, we trivially can "predict" what he/she would say under a normal condition, but it is not because we know something special about the psychology of that person as theoretical knowledge, but because we know what it is to know a language as atheoretical knowledge.

Therefore, we conclude that deductive explanation of grammatical facts even under the current framework is the formal deduction of the content of native speakers' knowledge of language from relatively general principles and a lexicon.[14] In such a explanation, the basic facts to

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14. For the details, see Chomsky 1986, pp.102-114. In these deductive explanations, particular contents (e.g. that the sentence "who was John persuaded to visit" is understood in a certain way, see ibid. p.102) are taken as contents of knowledge of a speaker, namely grammatical facts. These contents themselves are the explanandum. Any aspects belonging to the levels (B) or (C) are not included in the descriptions of these contents of grammatical facts.

An explanation of this type (deductive explanation) in current G.B. theory consists in deriving a theoretical representation of a grammatical fact thus extracted from a concrete manifestation of knowledge from various principles

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be explained are not the result of any observation comparable to that in natural science, but the result of understanding what a native (including a linguist him/herself) says about the basic feature of his/her language (e.g. whether a sentence is grammatical or not) and taking it as a fact.

That generative grammar uses this method doesn't disqualify it as a science unless we mistakenly equate science with natural science as Chomsky seems to do. Actually this is the only possible and proper method for

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and lexicon. Lexicon and principles are the fundamental explanatory devices in deductive explanation in the framework of G.B. theory. Lexicon is a systematic representation of the contents of native speaker's (basically the linguist's) knowledge of words in a language. Some principles are generalization from grammatical facts of many languages (e.g. principles of binding theory, principles of bounding theory), and other principles are the results of rational speculations based on our general understanding of how the meaning of a whole sentence is related with the meaning of its predicate verb and the meanings of the nouns that are required by the meaning of that verb (e.g. projection principle which says that the set of semantic roles for the predicate verb of a sentence that are specified in lexicon are represented at all levels of grammatical representations of that sentence, and full interpretation principle which says that all words in a sentence have to be used in its interpretation, see Chomsky 1986, pp.84,98).

From one point of view, these particular grammatical facts extracted from concrete manifestations of knowledge of the native speaker give evidence for these principles and lexicon, and from another point of view, these particular grammatical facts are explained by these principles and lexicon. In any case, both explanandum and explanans in this type of explanation are stated at the level of (A), namely contents of knowledge, and, therefore, the whole explanation belongs to the type (c), namely explanation of one content of knowledge another more generalized content of knowledge. No facts at the levels of (B) and (C) are shown or used in this type of explanation.

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any science of knowledge unless we erroneously think that we can know what other people know exclusively on the basis of the observation of their behavior without relying on the communication based on common native language as Bloomfieldians and Quine assumed (see 5.1.2.2.). Chomsky seems to be caught between his recent naturalism and the fundamental nature of generative grammar as a normative science of knowledge of language. Linguists don't have to be ashamed of doing the latter any more than logicians have to be ashamed of doing logic which is not a natural science. Natural science and normative science of knowledge simply have different types of objectivity. The objectivity of the former consists in the objective existence of natural objects independent of the act of cognitive agents. The objectivity of the latter consists in the knowledge-hood of our native knowledge of language based on the speech community and the communal activity in it. The existence of us as animals speaking a particular language (human beings) consists in this knowledge.

5.2.3. Nature of Acquisitional Explanation and Universal Grammar in Current Chomskyan Generative Grammar.

Let's now turn to acquisitional explanation. As we have shown in 5.1.5., Chomsky now claims that his current theory

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of Universal Grammar is the one about the language faculty as a biological innate organ that explains the process of children's language acquisition and the diversity of languages. In a word, he seems to think that the analogy between the development of bodily organ and the development of knowledge of language in children holds to a significant degree[15]. Moreover, as he says in the passage we just quoted:

> Are we now entitled to say that ... the rules of the initial state [the innate language faculty] have "causal efficacy" in bringing about the attained state [acquired knowledge of language]? Are these <u>further</u> claims, beyond the claim that our best theory of Jones attributes to him encoded rules that operate in this way? since the first step of the argument exhausted <u>the methods of science</u>, if something else is involved in this second step, then it goes beyond the <u>natural sciences</u>... (Chomsky 1986, p.252.)

Chomsky also claims that his theory of Universal Grammar gets the same kind of empirical support from current study of generative grammar as physical or biological theories do from empirical studies conducted in the methods of natural science. It is this claim we want to examine here.

To distinguish what we think problematic about this claim from what we don't, we first have to show the special nature of the study of language acquisition and in what

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15. Chomsky 1975, pp.9, 29, Chomsky 1980, pp.237-238, Chomsky 1986, p.25.

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sense it is an empirical study.

When we are born, almost the only activity we are engaged in by using our innate vocal organs is that of crying. However, by the time we reach the age of 5, most of us already have acquired the full ability to engage in the activity of speaking with not only our parents, but also virtually all members of our speech community. Our ability to speak (our native knowledge of language) develops gradually between these two periods by undergoing several stages with a great variety among individuals. Nevertheless, this sequence of various stages has a certain order. In the first several months, we are engaged in more and more complex vocal activities such as laughing, cooing, and babbling, but they are not directed to adult speakers.[16] For this reason, they cannot be considered as the activity of speaking; they are more like playing with one's own vocal organs. We pass from this pre-linguistic stage to the beginning of speaking activity toward the end of the first year when we utter our first "word" to the adults and perform our first "speech act" like that of attracting parents' attention by using vocal signals.[17] After the period of accumulating our initial vocabularies,

16. For the summarized description of this stage, see Stark 1986, and reference there.

17. See Griffiths 1986.

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we come to be able to formulate sentences with adequate syntactic structures by combining more than two words in our speaking activity though they are still incomplete for adults' standard, and our language become more and more similar to adults' after this period until our knowledge of language is more or less completed at the age of 5.

A theory of language acquisition is a theory that explains the transition from one stage to another in this process of becoming a linguistic subject by means of a postulated "mechanism" or "learning strategies" the children possess. Such a theory can receive an empirical support from the actual facts about children's developmental process in terms of the correlation between the difference of two consecutive stages and the process that takes place between them. For example, if a theory states that the learning of the initial words is exclusively done through the reinforcement by the reward and/or punishment given by parents, we can ask whether the child actually has gone through such a process for each word he/she learned to see whether there is an empirical support for such a theory. In this sense, the validity of a theory of language acquisition is purely empirical problem.

However, the methodology of the study of language acquisition has a unique complexity we suggested at 5.1.4. because this is the study about the transition from the

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non-cognitive stage to the cognitive stage which neither can cognitive categories of adults nor purely mechanical categories fully capture, and this complexity is manifested by the kinds of facts the researcher should know at each stage to look for the empirical support for his/her theory.

For example, when the researcher studies the babbling activity of a child at the earlier period of the prelinguistic stage, the researcher has to objectively observe the child's activity without engaging in any communicative activity with the child, just as an ethologist observes animals without communicating with them. The researcher has to record the produced sounds by applying phonetic categories that are not specific to any particular language but applicable to any human acoustic objects, since there is no reason to think that what the child produces are the words or utterance in his/her language. Therefore, the researcher doesn't have to know the language of the speech community to which the child will eventually belong insofar as the researcher has a good phonetic training. The facts about this stage is the fact yielded in the observation of a child's vocal activities through the application of phonetic categories. If a theory receives an empirical support from these facts, it is supported in the same way empirical theories of natural science are.

However, if the researcher tries to study the language

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of a four year old child, the situation is radically different. To fully assess the developmental stage of the child's knowledge of language, the researcher cannot simply make phonetic transcription of the sounds the child produces. Above all the researcher has to take them as the products of speaking activity with other speakers and record what the child says in this speaking activity. The researcher has to know the language of the child's speech community and, in most cases, to speak with the child in this language to know what the child says. The categories he now has to apply in the description are the categories specific to this language since he has to record what the child says in that language. Therefore, the facts the researcher has to know are the understood fact though they are not yet the understood content taken as facts since the child hasn't developed reliable meta-linguistic consciousness yet (e.g. the researcher cannot take the child's answer to the question, "Is this an English sentence?" as a fact about English even if the child gives any answer).

On the other hand, the researcher has to devise a special set of categories that are different from the categories of adults' language when he/she tries to study the earliest linguistic period of the child since the vocabularies used at this stage are often unique to an individual child and the inventory of the child's speech

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acts are not the sub-set of adults' speech acts, but primitive ones to which there are no exact counterparts in adults' full-fledged speech acts such as questioning, asserting, or requesting a certain content. In a word, the researcher cannot simply impose the categories of adult language on the child at this stage if he/she tries to capture the seed of matured language in the child.

Considering this special nature of the process of language acquisition, it becomes clear that it is only to the first stage of this process that the method of natural science based on objective observation is applicable. Moreover, it is also only to the relatively late stage of this process that the method of science of knowledge based on the communication in the common language is applicable in the usual way. We need a special method and the unique set of categories to the period between them, and this necessity constitutes the unique difficulty and interest of the study of language acquisition.

Now if we consider these special features of the process of language acquisition, Chomsky's claim is, at best, highly doubtful. If Chomsky's theory of Universal Grammar is a theory about the development of a unique biological organ unique to a species (homo sapiens) like the bat's sonar, this theory has to be tested in the exactly same way a theory of the development of bat's sonar is. If we devise

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a theory about the development of bat's sonar, we have to trace the developmental process that starts with a rudimentary organ (the initial state) and ends up with a matured organ (the final state). If this final state really has the function of a sonar and if the transitional process goes through the stages our theory predicts, our theory will receive a certain degree of empirical support from the facts. The crucial point in this process of empirical research is that the facts about this organ at each stage are based on objective observation of the morpho-functional nature of this organ. They are the objective facts about the natural biological world, and there is no necessity to refer to any community to define the objectivity of these facts. What Chomsky claims is that his theory of Universal Grammar has reached a similar stage as an empirical theory about "language faculty" as a biological organ.

Let's see the specific contents of the recent theory of Universal Grammar in generative grammar to see whether this type of objectivity is now attained for it.

In a word, this theory has the following four elements: (1) the lexicon of each language, (2) universal principles of various sub-systems, (3) a single transformational rule of Move-alpha, and (4) various parameters whose values determine the variation of

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languages.[18] Despite numerous novel technical terms, all of these elements are ultimately expressed by such traditional grammatical categories as "sentence", "word", "noun", "verb phrase", "subject", "object", and various semantic roles. For example, one of these parameters called "pro-drop" parameter concerns whether a language allows sentences without overt subjects like Italian or Spanish or prohibits such construction like English or French.[19] Therefore, we have to use such categories as "sentence", "noun phrase", "verb phrase" as primitive to judge whether a given language is a pro-drop language or not. Basically the same thing can be said for other elements of this theory. Therefore, what is deductively inferred from this theory, and what this theory predicts, if it does at all, are fundamentally couched in these traditional categories that have been used since the beginning of generative grammar. This means that what this theory can predict about the each stage of children's linguistic development always has the form that a child in the speech community of a language X at such and such a stage understands or produces such and such a type of sentence of this language. For example, one of recent researches that apply the concept of parameters to the

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18. Chomsky 1982, pp.3-7, Chomsky 1986, pp.145-152.

19. For a text-book explanation of this concept, see Riemsdijk and Williams 1986, pp.298-303.

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grammatical development of children's language tries to explain the transition of English children's grammar from the "pro-drop" stage in which they produce sentence without overt subject noun phrases like (1) to the "non-pro-drop" stage in which they produce correct English sentences with both an overt pronoun subject and an auxiliary verb like (2).

(1) Want more apple. (in the sense of "I want more apple.")

(2) He won't come.[20]

What we problematize here is not the validity of such an explanation, which has an interesting content that certain grammatical features are acquired together. What we problematize is Chomsky's assumption that the fact that the children produce these sentences at certain stages gives to the theory of Universal Grammar the empirical support of the kind our observations of bat's sonar would give to a theory about the development of this biological organ. A fact that one child said (1) at a certain stage of his life and another fact that another child said (2) at certain stage of hi/her life are not the facts in the natural world known to the researcher on the basis of objective observations of events. The crucial fact is that the

20. Hymas 1986, pp.10, 13.

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researcher recognizes that the children produced particular linguistic objects such as words or sentences in the actual speaking activity. It is only because of this recognition that the researcher took these objects as instantiations of sentences, and it is only because of the applicability of the category of "sentence" and "subject" to these objects that the researcher can take the one stage as "pro-drop" stage and the other "non-pro-drop" stage. The researcher cannot know these facts without understanding the children's speaking activity as such, namely understanding their products not as acoustic objects that are observable by any observer but as meaningful words of English that can be understood only by those people who know English. If the researcher doesn't know English, he/she can hardly know these facts however objectively he/she observes children's behavior. The objectivity of these facts are based on the objectivity of the speech community to which the researcher belongs and to which the children are going to belong. The method the researcher uses in this application of Universal Grammar is completely different from the one biologists use when they study human arms or bats' sonar. The facts against which the theory of Universal Grammar has to be tested are not facts yielded in the observation of events in the natural world, but facts understood in the speaking activity in a speech community.

Therefore, we have to conclude that Chomsky's claim of

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the naturalization of knowledge of language on the basis of the analogy between biological organs and "language faculty" has no specific ground beyond mere logical possibility.

Moreover, our analysis reveals a substantial inadequacy of the current theory of Universal Grammar as a theory of language acquisition. Since this theory is couched in the linguistic categories of adults' language, it can apply only to the stages in which the children already utter the sentences with a certain syntactic structure like (1) and (2). However, one of the most crucial processes in language acquisition is the transition from pre-linguistic stage to such a linguistic stage in which children already can produce sentences with a certain syntactic structure. This is the process in which knowledge of language emerges. When a child tries to achieve something by addressing such words as "mama" or "choo-choo" to adults for the first time , namely when the child strives to become a linguistic subject for the first time, there is a certain linguistic element in this act though it is not yet a full-fledged activity of speaking. A linguist who is equipped with Chomskyan theory of Universal Grammar has no way to capture and record this linguistic element to see how it eventually developes into full-fledged knowledge of language since the categories like "noun phrase", "verb phrase", or "sentence with

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subject-predicate structure" don't seem to apply these primitive utterances at all. Therefore, Chomsky's theory of Universal Grammar as it is now stated is likely to miss the most crucial process in language acquisition that it is supposed to explain.

Thus, even if we accepted Chomsky's reasoning for the so-called innate hypothesis from such alleged grounds as the poverty of stimuli[21], the uniformity of the acquired knowledge within a speech community[22], and certain general features common to various languages (linguistic universals)[23], we can hardly say that the current theory of Universal Grammar is about the actual process in which children come to know their language. This means that Chomsky's concept of "innate ideas" or "initial state" is not something that is temporary and causally prior to the attained knowledge of language in the temporal process of language acquisition, but something that is conceptually prior to the latter under a certain formalism and that is common to many languages in the world, just as the axioms of Principia Mathematica are conceptually prior to other theorem of first order predicate logic under a specific

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21. Chomsky 1967, pp.3-4, 7, Chomsky 1975, p.10, Chomsky 1980, p.34.

22. Chomsky 1967, p.4, Chomsky 1975, p.21.

23. Chomsky 1967, p.7, Chomsky 1975, p.29

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system of proof that Russell and Whitehead proposed. The real significance of Universal Grammar, therefore, seems to consists not in its' being a theory of language acquisition based on the genetic constitution of human beings, but in its' being a taxonomy of human languages through the systematization of the contents of grammar of each language by means of variables partly derived from generalization from many languages[24] and partly derived from independent rational principles[25].

5.2.4. Further Possibility of the Naturalization of Grammar.

From the discussions of the previous two sections we have to conclude that current theoretical practice within the framework of G.B. theory lends no specific empirical support to Chomsky's naturalistic hypothesis that knowing a language is having a certain brain structure common to all

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24. So-called the principle of Subjecency Condition is an example of this group. See Riemsdijk and Williams 196, chapter 4.

25. A principle of full interpretation (FI) and the projection principle belong to this category. For the former, Chomsky 1986, p.98, and for the latter Riemsdijk and Williams 1986, pp.144-145. As a general tendency, Chomsky tries to reduce the first category (principles whose origin is generalization from particular languages) to the second category (principles based on rational or conceptual ground).

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speakers of that language and that acquisition of a language is biological maturation of a functional unit of the brain which is genetically conditioned and triggered by external stimuli. The main reason for this failure of Chomsky's claim is that the current linguistic practice in generative grammar takes concrete cognitive activities of linguistic subjects not as observable events in the natural world, but as the manifestation of native knowledge of language whose contents are expressed by traditional linguistic categories. Current Chomskyan linguistics still is a science of knowledge. The facts against which theories of generative grammar are tested are not facts yielded in the observation of natural events, but understood contents taken as facts, which are based on the communication in common native knowledge.

The problem revealed in our discussion is not that there hasn't yet been enough progress made in natural science enough to naturalize language, but that the linguists don't take the attitude to language that is necessary for its naturalization. As we discussed in 5.2.2., when the subject performs the act of intuition or understanding, the linguist can always take three different attitudes to this event: the attitude of a fellow native speaker who takes the content of the subject as a fact, the attitude of a fellow native speaker who understands what the subject does and says, and the attitude of an observer

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of a natural event. The linguist can take any of these three attitudes, and if he/she thinks what they are studying are events and objects in the natural world whose objectivity has nothing to do with that of a speech community, they have to take the third attitude from the beginning. This is the attitude of a naturalist, and this is the way of naturalizing language. To takes this naturalistic attitude doesn't depend on any particular progress of science and technology. If the naturalization of language isn't started now, it won't be started forever. Chomsky's and all generative grammarians attitude indicates that Chomsky's discourse on naturalism is nothing but a dogma which has nothing to do with what they are doing.

However, this doesn't mean that the naturalistic hypothesis about the nature of language is false or cannot be correct for some apriori reason. Before closing our investigation, we want to explore the theoretical possibilities of establishing this naturalistic hypothesis and its preconditions in order to understand the real philosophical significance of the naturalistic view of language.

As we already remarked, the general concept of representation based on the distinction between the representation and the thing represented is very difficult to use in the naturalization of grammar because of the

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normativity of language, and in addition, because of the general difficulty of representationism that we discussed in chapter 3. For if such a separation of the grammatical fact and its materialized representation in our brain is possible, and if the grammatical fact is a fact whether or not it is represented in such a way, the researcher eventually has to know whether an alleged grammatical fact reported by a native speaker is really a fact without using the testimony of any native speaker as an independent factual source in order to know whether this native speaker really knows this alleged fact or it is nothing but groundless belief of this native speaker. In other words, a grammatical fact would have to be a fact even when it is not known by any human beings if such a separation is possible. This is a necessary consequence of the idea that a native speaker's knowledge of language consists in his/her having the representation of a grammatical fact which is a fact whether it is known by somebody or not. As we discussed in 4.2.4., such an idea can hardly make sense insofar as we mean by "language" a natural language spoken by particular people. Such a separation of a fact and its representation causes no trouble in the case of facts about the natural world. Because of this special difficulty which we call the normativity of language, there is little hope to naturalize language by means of the general concept of representation.

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Moreover, naturalization of grammar doesn't have to use this general concept of representation. When we naturalize knowledge in general by means of the cognitive agent's possession of a cognitive state as a natural state (e.g. a brain state), it is absolutely necessary to use the general concepts of representation that connects the contents of knowledge in general with certain kinds of natural state in a systematic way ("code"), since virtually everything imaginable can be a tentative object of our knowledge (e.g. we can know that Pegasus doesn't exist) and has to be able to be represented by these states if our knowing a fact consists in our having its representation. The medium of representation cannot pose any significant conditions on the contents that are representative. On the other hand, the contents of grammatical knowledge are highly restricted; they are not about such diverse objects as trees, animals, people, numbers, dreams,or Pegasus, but are simply about linguistic objects such as sentences, words, speech sounds, and their derivatives. This means that if these fundamental linguistic categories have their natural counterparts that play a causal role in the organic process of our body which we now call "knowing language", we can utilize these natural counterparts of linguistic categories of our biological/psychological life for naturalizing knowledge of language without relying on a general system of representations ("code"). In other

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words, there is a hope to equate our knowing a language with our having certain causal relationship with the natural counterparts of these linguistic categories. This is the possibility we want to pursue here.

The second important point for any serious attempt at the naturalization of a language (knowledge of language) is that the naturalization of language ultimately depends on the naturalization of such cognitive manifestations of knowledge as intuition or understanding. Both an innate biological organ as language faculty and an enduring state of that organ can be identified as such only through the identification of temporal natural states as the manifestation of knowledge such as intuition or understanding. What makes an innate biological organ or functional unit the language faculty is the fact that this initial structure eventually produces or develops into a stable structure that is called knowledge of language. If a scientist identifies a special functional unit in children's brains that he suspects may be the language faculty, he can check this particular hypothesis only by observing whether it produces or develops into a stable state/structure of the brain that can be identified as knowledge of a particular language. Thus, the naturalization of language faculty has to be based on the naturalization of knowledge of language. Similarly, a stable state of a brain can be identified as knowledge of a

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language only when it causally produces various phenomena that are currently known as manifestations of knowledge of language such as production of linguistic objects, understanding of speech, and intuition of grammatical facts. However, under the Chomskyan assumption, there is no determining relationship between knowledge of language and the actual production of linguistic objects ("creativity of language", "Cartesian problem"). Thus, a particular structural and functional unit of brain has to be identified as knowledge of language through its causal connection with the naturalistic processes that can be identified with the acts of "intuition" or "understanding". This means that we cannot check our empirical hypothesis about the naturalistic identity of knowledge of language (e.g. such and such a configuration of neurons is responsible for the possession of knowledge of language) unless we identify the naturalistic counterparts of "understanding of a sentence" or "intuition of a grammatical fact" and know their natural properties. This means that naturalization of language requires nothing less than the naturalization of "intuition" and "understanding". Above all we have to know what kind of natural fact it is for a speaker to understand a sentence or to intuit a grammatical fact if we are serious about the naturalization of language. On the other hand, if these cognitive processes were to be naturalized, we would be able to

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conclude that the major part of naturalization of language has been accomplished. Let's examine how this could be done.

The point about the representation we just made implies that it cannot be the case that in the act of intuition or understanding a speaker recognizes a fact through the possession of the representation of this fact that is different from the act of intuition itself. Let's take a close look at this point. Suppose that a speaker of English hears a sentence and intuits/recognizes that it is grammatical. If this act is the recognition of a fact that such and such a sentence is grammatical through the possession of its representation, this represented fact has to be either about the speaker himself or about an object/event external to him. If it is a fact about an external object, it must be about this heard utterance itself. This means that the speaker recognizes this acoustic object as an instantiation of the category "sentence-of-English". To naturalize this grammatical intuition means to naturalize this process of the recognition of the linguistic property of being grammatical in English thorough the recognition of naturalistic properties so that the recognition of a grammatical fact can be considered as the recognition/identification of complex natural property in an acoustic object. Moreover,

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that the speaker has this intuition means that he knows the truth of this acoustic object's having that complex natural property without any process of epistemic justification or of the analysis of the structure of that sentence. What can be this complex natural property that is shared by all instantiations of all actual and possible grammatical sentences of English? If we think about the morphological and phonological diversity of all grammatical sentences of English and phonetic diversity of their actualization, it seems almost impossible to think about any natural unity among them, however complex the properties we may think of as common to all these cases. Thus it is highly unlikely that what the speaker recognizes is particular common features of external acoustic objects. On the other hand, if this represented fact is about a part of the speaker's own body, then the cases can be further classified into two sub-groups depending on whether or not this part of the speaker's body is involved in the very act of intuition. If this part is not related to the act of intuition itself as our hand is not related to the act of seeing when we see this hand, the obvious question is how the speaker knows a fact about this part of body when he hears an utterance produced by others. It seems that the speaker cannot know such a fact or cannot be sure the truth of this fact until he examine this part of his body separately, but this is against the basic assumption that the speaker knows the

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truth of this grammatical fact in the single act of intuition.

These considerations naturally lead us to an idea that what is recognized in a act of grammatical intuition or understanding is something about this act itself. This seems to be the most promising and, probably, the only feasible approach to the serious naturalization of these cognitive activities related to knowledge of language.

One story that expands this idea may be the following. When a speaker hears various grammatical sentences on different occasions, they produce a similar state in his brain each time, which the speaker feels as a special sensation which induces a thought that this sentence belongs to my language. The act of intuition or understanding can be considered as a process of having and identifying such a feeling or sensation, which in its nature is comparable to our sensation of a pain or an itch. Let's call this feeling grammatical feeling or grammatical sensation. What the speaker actually knows when he makes a grammatical judgment is that he has this grammatical feeling on a occasion of hearing an acoustic object. He knows this fact without any process of justification or analysis, just as he knows that he has a pain when he does without any process of epistemic justification. We can interpret the act of understanding in the same way. When a speaker understands the sentence produced by others, he

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feels a type of understanding feeling or understanding sensation.

According to this view, to know a language means to have a kind of aesthetic sense that is selectively sensitive to a particular class of objects that may not have any significant natural properties in common. Let's call this sense that manifests itself as our sensation of grammatical feeling or understanding feeling linguistic sense. Thus, possession of linguistic sense is comparable to the possession of a taste for food. Each one of us has a particular taste for food by virtue of which we identify a certain class of objects as "my favorite foods" even if these objects had no significant natural properties in common except that of being liked by us. Therefore, we can think that the possession of knowledge of language is, at least, as natural a phenomenon as each individual's possession of the taste for foods. Acquisition of language would then be considered as a process of developing this grammatical sense.

Thus, we can see that there is a real possibility of developing a naturalistic view of knowledge of language along such lines. According to such a view, our knowledge of language becomes highly subjective, actually as subjective as our taste of foods. In a sense, knowing a language becomes having a particular taste for acoustic objects, and understanding a speech becomes a kind of

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musical appreciation and recognition of other people's voices. Speaking, according to this view, would be considered an activity like the improvisation in jazz. Let's call such a view of language the subjective aesthetic view of language[26].

Though this aesthetic and subjective view of language is not without interest, it contains a serious difficulty within it. Namely, the process of communication between two linguistic subjects becomes highly problematic under this view. According to this view, what we recognize or feel when we "understand" others' speech is nothing but our own sensation caused by external objects. Because of this self-referentiality, according to this view, we can know what we know without any analysis or justification when we "understand" the speech of others. The process of communication between two speakers thus becomes a process of sending aesthetic stimuli to each other in which each one feels something about oneself. All we know about the other in such a process is that a particular aesthetic stimulus that causes a grammatical feeling in us comes from the other. If we try to extend our knowledge about the other in this process beyond this stage, we inevitably have to be engaged in a theoretical activity through which we

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26. Such a view of language is by no means new. A view close to the one we have explored was held by people like Vossler or Croce in Europe in the first part of this century. See Volosinov 1929, English translation pp.48-51.

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construct a hypothesis about what the other means by this aesthetic stimulus, if he/she means something at all. Here we cannot think that this aesthetic stimulus means something in itself and we know this meaning through our knowledge of language since our basic assumption is that what we know when we know a language is our own "grammatical taste". An acoustic object is significant only for me, just as my favorite food is significant only for me. Here the factual similarity or identity of grammatical sense among speakers doesn't change the situation at all, just as the factual sharing of a taste doesn't make the communication possible unless we presuppose the channel of communication beyond this sharing of taste. In such an exchange of aesthetic stimulus between us what I know is something about my own state and what you know is about your own state; beyond these things each of us has have to guess what the other knows or feels, since we don't share the same content of knowledge. What is missing in such a process that is necessary for the communication in a genuine sense is <u>common knowledge of language</u>, which is rejected the moment we take this subjective and naturalistic view of language. Thus, the process of communication under this view, if there is any, becomes essentially a theoretical activity, and the problem of other minds becomes a real problem. Consequently, the concept of a speech community loses its original meaning,

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and a speech community becomes a collection of individuals who happen to share a certain aesthetic sensibility whose basis is no doubt biological.

If we return to Chomsky's thoughts on language, we cannot fail to recognize that such an individualistic view of language is also held by Chomsky himself. According to him, the sharing of language within a speech community is nothing but a historical accident about the multitude of individuals who happen to have a similar environment, and the communication among its members is essentially a theoretical process.[27] After all, according to Chomsky,

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27. Chomsky's view on communication is essentially solipsistic. He thinks that communication is a process of constructing a theory explaining other people's behavior. He writes as follows:

> As for the fact that the rules of language are "public rules", this is, indeed, a contingent fact. It is a fact of nature that the cognitive structures developed by people in similar circumstances, within cognitive capacity, are similar, by virtue of their similar innate constitution. Thus we share rules of language with others as we share an organization of visual space with them. Both shared systems play a role in successful communication. Hearers sometimes assume that the speaker is expressing beliefs that he holds, at other times not, depending on the circumstances.
> (Chomsky 1975, pp.71-72.)

Here Chomsky fails to distinguish locutionary and illocutionary acts, on the one hand, and perlocutionary acts on the other hand. When we speak, we use "rules of language" (knowledge of language) in order to understand not other's perlocutionary acts, but his/her locutionary and illocutionary acts. The understanding of beliefs in the sense Chomsky is talking about here is related to the latter. There are no "rules of language" that tell us what

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what is common to all human beings as the knowers of a language is not our special "form of life" as members of a speech community, but a biological "form of life"[28] constituted by a genetic structure.

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the speaker actually believes, but this doesn't contradict the fact we share knowledge of language by belonging to the same speech community, and communication in our sense is possible by this shared knowledge. When we want to know what others believe, we have to sometimes guess, but when we understand what is said, we don't have to guess. This is what it means to know a language.

For his theoretical view of communication, see also Chomsky 1986, section 4.1.

28. Chomsky calls UG (a given biological constitution responsible for langauge acquisition) a form of life. Chomsky 1986, p.232. Here we have to distinguish two senses of "life" and, consequently, two senses of "form of life". One is biological , and another is communal and normative.

All living organisms have a life as a continuous biological process in which each individual sustains its existence from its birth to its death. In this sense, a bacteria as well as a human being has its own life. The course and features of the biological life of an each individual organism is basically determined by the biological constitution of the species it belongs to. We can call the totality of these features a form of life in the biological sense, which determines how and where each individual can and must live by the biological necessity. In this sense, all human beings have the same form of life which is radically different from that of whales.

On the other hand, there is another sense of life which is applicable almost exclusively to human beings. In this sense, the life of a king is radically different from the life of a beggar, though both of them have the same biological form of life as human beings. The course and features of life of an individual can be called a form of life in the non-biological sense. Each individual's form of life in this sense is determined by various factors, one of which is the speech community one belongs to.

Sharing the form of life in the biological sense is only a remote foundation for communication between individuals; more specific ground is given only by belonging to the same speech community, which amounts to sharing an aspect of a form of life in the non-biological sense. Cf. Chomsky 1975, p.71.

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Now we have to recognize that this individualistic view of language is an inevitable consequence of the subjective aesthetic view of language we described above, and the latter is the most promising approach to language under a naturalistic assumption. The naturalistic view of language and the individualistic view of language are closely related to each other with the mediation of individual psychology. In other words, the naturalization of language is hardly possible unless language or knowledge of language has such an individualistic character.
Our last argument against the naturalistic view of language consists in an argument against Chomsky's individualistic view of language.

5.2.5. Critique of the Individualistic View of Language and the Validity of the Concepts of Common Language and Speech Community in Linguistics.

Chomsky's individualistic view of language has two pillars. One is his deep conviction that facts about a language are facts of individual psychology and physiology and that the most real entity in linguistics is each individual's language (idiolect).[29] The other is his deep skepticism about the concept of a common language and speech

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[29]. Chomsky 1986, p.224.

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community. As for the first one, the difference between his view and ours seems to be so great that it is quite difficult to argue for either side without begging the question. For example, if an individualist accepts solipsistic consequences about the nature of communication as Chomsky seems to do and insists that our concept of communication in the common language is nothing but a illusion, there is little to talk about between the two sides. Therefore we concentrate on the second point, which would give a specific support for individualistic view if it is correct.

The fundamental reason for Chomsky's skepticism about a common language and speech community is an observation that there are vast variations both among dialects within a common language (e.g. English) and among individuals within a dialect. From this observation, he concludes that common language and speech community is not a well-defined concept for linguistics. This view is typically expressed by passages like this:

> Consider the concept "language" itself. The term is hardly clear; "language" is no well-defined concept of linguistic science. In colloquial usage we say that German is one language and Dutch is another, but some dialects of German are more similar to Dutch dialects than to other more remote dialects of German. We say that Chinese is a language with many dialects and that French, Italian, and Spanish are different languages. But the diversity of the Chinese "dialects" is roughly comparable to that of the Romance languages. A linguist knowing nothing of political boundaries or institutions would not

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> distinguish "language" and "dialect" as we do in normal discourse. Nor would he have clear alternative concepts to propose, with anything like the same function.
>
> Furthermore, even within the more restricted "languages" there may be considerable diversity. Two dialects of what we call a single language may be mutually incomprehensible. A single individual will generally command diverse modes of speech, in part associated with varying social conditions of discourse. No clear principles are known that determine the range and possible variation for a particular individual. (Chomsky 1980, p.217-218.)[30]

If what Chomsky tries to establish in such passages is correct, and linguistic units such as English, German, Dutch, and Chinese, have no substantial contents for linguistics as a science of language, there arises a serious methodological problem, unless linguists are content with studying each individual's language as a separate entity. Chomsky's solution to this problem caused by the individualistic view is to construct a collection of individuals who share exactly the same linguistic stimuli as an idealized theoretical model for a common language, which doesn't exist in an actual world, and to study actual languages in comparison with this model.[31] This is his concept of "idealized homogeneous speech community":

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30. See also Chomsky 1986, p.15.

31. He calls this collection "speech community", but there is no assumption that goes beyond their sharing of biological constitution and the stimuli. It is not a community even in the ordinary sense since their knowing each other's sharing of knowledge is not included in Chomsky's assumption.

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> It should come as no surprise, then, that a significant notion of "language" as an object of rational inquiry can be developed only on the basis of rather far-reaching abstraction. How to proceed is a matter of controversy. My own view is this. We may imagine an ideal homogeneous speech community in which there is no variation in style or dialect. We may suppose further that knowledge of the language of this speech community is uniformly represented in the mind of each of its members, as one element in a system of cognitive structures. Let us refer to this representation of the knowledge of these ideal speaker-hearers as the grammar of the language. (Chomsky 1980, pp.219-220.)

As is well known, this concept has been the target of heavy criticism, against which Chomsky replies as follows:

> The legitimacy of these idealizations has sometimes been questioned, but on dubious grounds. Indeed, they seem indispensable. Surely there is some property of mind P that would enable a person to acquire a language under conditions of pure and uniform experience, and surely P ... is put to use under the real conditions of language acquisition. To deny these assumptions would be bizarre indeed: It would be to claim either that language can learned only under conditions of diversity and conflicting evidence, which is absurd, or that the property P exists.. but the actual learning of language does not involve this capacity. (Chomsky 1986, p.17.)

Behind these skeptical considerations exists one fundamental problem in linguistics. That is the problem of identity and difference of a language as a linguistic unit: what makes two speakers the speakers of the same dialect? what makes two dialects the dialects of the same language? Chomsky's skeptical conclusion about the validity of the

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concepts of common language and speech community and his methodological solution in terms of an idealized homogeneous speech community have to be considered as the consequence of his specific view on this problem of individuation of language and knowledge of language. His view on this issue, which lies behind these passages, seems to contain the following two elements:

> (1) Unless the individuals share exactly the same grammar at a linguistically significant level of description (e.g. phonological description against phonetic description), they cannot be said to share the same language in a linguistically significant sense. The same principle applies to dialects and social styles.
>
> (2) The ability to learn a language in a homogeneous linguistic community (the collection of individuals with exactly identical language) is an essential precondition for learning language in a heterogeneous linguistic community.

We have deep doubts about both of these statements, and, consequently, think that the observations about the variations of dialects and individual styles don't constitute a legitimate reason to consider the concepts of

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common language and speech community as inadequate for the scientific study of language. We rather think that they are the necessary preconditions for the possibility of linguistics. Let's start with discussing the first point on the identity of a language.

To evaluate the full significance of (1), we have to consider the general problem of the relationship between a universal and its various instantiations such as the one between a species and its members since the relationship between a language and its dialect or the one between a dialect and individual variations within its speech community is one variation of this general problem. The essential problem here is to what extent individuals can vary without ceasing to be the instantiations of the same universal. One view, which seems to be held by Chomsky, is that any discernible variation at a significant level of description which has to be specified for each case destroys the unity of individuals as instantiations of the same universal. If this view is correct, Chomsky's observations about German and Dutch or about individual variation within a dialect clearly constitute a strong reason to suspect that unity of dialects or unity of individual speakers within a speech community of a dialect means no more than that they happen to be called by the same name. There is, on the other hand, another view which

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distinguishes the properties possessed by individuals into two groups, one of which make them instantiations of the same universal and another of which make each individual a variation of the same universal. According to this view, a universal doesn't specify the totality of an individual's properties at a certain significant level, but only a part of them. If this view is correct, a simple observation of variation among individuals in itself doesn't constitute any decisive reason to disregard the reality of a universal.

Actually these two views on the relationship between a universal and individuals belonging to it are not contradictory to each other, but rather correspond to two different types of universals, namely idealized/idealizable universals and real universals. Both types of universals play essentials roles in various scientific theory, and we can classify universals (scientific concepts) appearing in scientific theories into these two types. Each type of universals have different relationship with their instantiations. Therefore, the real problem we are facing is not which view is correct in general, but which type of universal a particular language or a dialect as a universal belongs to. We have to clarify this distinction to set up the proper background for our current discussion.

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An idealized/idealizable universal[32] is characterized by the feature that it has no actual instantiations in the world. However, this doesn't mean that an idealized universal is a fictional universal like a unicorn. It rather means that we have a pre-given concept of this universal which can be explicated into a more and more exact definition or formula without limits though there are no actual individuals which we can take as the model of this explication. In this sense, universals of this type are idealizable, and after they are constructed as idealized universals, they are not instantiated in any actual individuals, but are the limits of the idealization of actual individuals which are only approximations to these universals. The scientific validity of idealized universals consists in the fact that we know the direction or the mode of idealization without any arbitrary decisions from actual individuals that are approximations. All geometrical concepts, such as straight line, triangle, or circle, have this feature. They are first given to us as idealizable universals, and geometry is constructed on the basis of idealized geometrical universals that are the results of the idealization of these idealizable universals. For example, even though there are no objects

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32. The concept of an idealized universal is clearly explicated by Husserl (1954), which he calls a pure ideality. See Husserl 1954, section 8-a, English translation pp.24-28.

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in the worlds whose shapes are exactly a circle in the geometrical sense, we know how to formulate the concept of circle through idealization from actual shapes of objects and our pre-given concept of a circle, and we can refine this concept without limits by giving definitions to such concepts as point, space, equidistance, and so on. The concept of a circle is idealizable. Another groups of examples of idealized universals are <u>irrational numbers</u>. Think about <u>pi</u>. Since there are no actual geometrical circles in the world, the ratio between any actual pair of the perimeter and the diameter of a circle-like object doesn't represent this irrational number, nevertheless we can calculate this number indefinitely without limits. The pre-given concept of "the ratio between the perimeter and the diameter of a circle" is thus an idealizable universal, and <u>pie</u> as a geometrical concept is an idealized universal. In such a process of idealization, we don't have to make any arbitrary decisions concerning the definition; we rather have to make what is taken for granted without explicit definitions, e.g. the concept of point, more and more explicit. In this respect, idealized/idealizable universals are distinguished from fictional universals for the formation of which we have to make many arbitrary modifications on actual individuals as is the case when the concept of unicorn is formulated from actual animals.

As a consequence of this first feature, an idealized

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universal has the second important feature that it is actually an idealized individual to which the concept of variation doesn't apply. That an idealized universal is also an idealized individual means that we are getting closer and closer to a full description of an individual without limits when we proceed along our idealization. Thus, the concept of a circle of three feet diameter fully specifies an individual geometrical figure, and all actual figures that we usually take as circles of three feet diameter are not variations of this geometrical figure, but its approximations. The basic relationship between an idealized universal and actual individuals is that of an approximation of. Therefore, there can be only one individual that can be called an instantiation of an idealized universal, and this individual is fully specified by the idealized universal; actually there is no distinction between an idealized universal and its possible unique instantiation. There is no distinction between pi as a universal and pi as an individual; no actual ratio is the former's instantiation or the same thing as the latter. All actual individuals are approximations to an idealized universal/individual.

A real universal, on the other hand, is characterized by the following two features. First, it has actual instantiations in the world, and we cannot idealize from actual individuals without arbitrary decisions . Second,

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all of these instantiations (actual individuals) are equally the variations of a real universal and no individuals can be fully specified by the real universal itself. The basic relationship between a real universal and actual individuals is that of a variation of. In other words, there are no actual or possible ideal individuals for a real universal to which other actual individuals are approximations. For example, all biological species have these two features, and are real universals.

Think about the concept of lion. There are actual individuals we, either as laymen or as zoologists, usually take as lions. They are not approximations to an idealized lion since there is no way to formulate the concept of an idealized lion and refine it indefinitely on the basis of actual individual animals without making arbitrary decisions about what constitutes an ideal lion. In this respect, the concept of lion is fundamentally different from that of a circle or pi. On the other hand, no pair of these actual lions are identical as individual animals though all of them are not approximations, but instantiations of a lion. This means that the concept of lion, unlike that of pi, doesn't fully specify the totality of the properties of any individual animal, but only a part of it. In other words, there is always left a set of properties of an individual lion that are not specified by the concept of lion itself. What the concept of lion

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specifies is not the totality of an ideal lion, but what is common to all actual lions.

Real universals like a lion are partial concepts in this sense. They are essentially partial since we cannot construct the concept of an idealized individual that is fully specified on the basis of what we pretheoretically know about actual individuals without making arbitrary decisions. We cannot know how long the tail of an ideal lion should be. Because of this partiality, two different individuals (e.g. two lions) can belong to the same universal without ceasing to be the instantiations of that universal because of their difference, insofar as they share the common properties that are specified by the universal. Plural individuals' belonging to the same real universal (their identity) doesn't contradict with their being different from each other (their variety). This coexistence of identity and variety is rather a necessary consequence of the essential partiality of real universals. It is the essential structure of a real universal that in each instantiation its' belonging to the universal and its' being a variation of the universal are complementary to each other. Because of this essential structure, a real universal has the feature that it can be repeatedly actualizable in different individuals, and many cultural concepts which presuppose the repeatability by different individuals are real universals.

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Now we are in the position to fully discuss our original problem: does a variation within a language or within a dialect constitute any legitimate reason to reject the concept of a common language as an adequate concept for linguistics? This question ultimately amounts to another question: is the pre-given concept of a language an idealizable universal or a real universal?

Chomsky says that we have to construct the concept of an ideal speaker of a language X since there are no actual speakers of X since there is no actual language X other than in our idealization because languages of individuals (idiolects) are all different. Such an argument is valid only when the concept of language is like that of circle rather than that of lion, namely only when the pre-given concept of a language is idealizable. From the imperfection of actual circle-shaped objects we can proceed to the idealization of a circle since we know how to idealize, namely the ideal is given as a limit of the process of conceptual refinement whose concept is pre-given prior to the idealization itself; on the other hand, we cannot proceed to the idealization of a lion from the actual variety among individual lions since we simply don't know how to idealize the concept of lion except by arbitrarily setting the concept of "an ideal lion". Is the concept of a language or a speaker of a language X (a

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member of the speech community of X) an idealizable universal as Chomsky thinks?

Let's take Italian as an example. First, we have to notice that the concepts like Italian, Spanish, or English, are necessary prerequisites for the current framework of generative grammar (Government and Binding theory) since one of the major topic in it is the typology of languages. To discuss how English and Italian are different as languages or how similar Italian and Spanish are in exact linguistic terms, linguists cannot do without these concepts. To achieve this goal, they cannot investigate individual idiolects separately without introducing these universals as if they are classifying individuals' psychological character traits. These languages in linguistics are not devices by which linguists classify individuals' languages, but the very objects of classification. They have to be given to linguists prior to the theoretical activity of classification. Moreover, the actual practice of linguists shows that they treat languages as objects of their inquiry; they straightforwardly talk about the syntax of French or Italian without bothering to mention idiolects from which they may inductively construct the concept of French or Italian.

Therefore, the question is how the concepts of these languages are given to linguists when they start the

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typology of language: through the idealization on the basis of individual speakers as approximations to the ideal speaker or by discovering real universals instantiated in actual speakers? Our answer is simple: the pre-given concept of Italian language is not an idealizable universal but a real universal since we simply have no idea of "an ideal Italian speaker" unless we make arbitrary decisions about what constitutes perfect Italian. Therefore, what linguists investigate or classify is not idealized Italian but an actual language spoken by people we usually call Italians or the speakers of Italian.

To make our point perfectly clear, we have to distinguish two dimensions along which the idealization of a speaker is initially proposed by Chomsky.[33] One is the dimension of finiteness-infinity and another is that of variation-homogeneity. We have a clear idea of idealization of a speaker or a language along the first dimension, whether such an idealization is necessary or adequate for linguistics. We can construct the concept of a speaker with no limit of memory by gradually extending our actual capacity of memory, or we can idealize a grammar

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33. Linguistic theory is concerned primarily with an ideal speaker-listener, in a completely homogeneous speech-community, who knows its language perfectly and is unaffected by such grammatically irrelevant conditions as memory limitations, distractions, shifts of attention and interest, and errors ... in applying his knowledge of the language in actual performances." (Chomsky 1965, p.3.)

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by extending the application of recursive rules without limits so that sentences like " John thinks that Mary thinks that John thinks that Mary thinks that John thinks that Mary loves John" becomes a grammatical sentence of English in a theory. We have no difficulty in idealizing the concept of language or a speaker along this dimension of finiteness-infinity, just as we have no difficulty in idealizing the concept of straight line by extending actual lines without limits. However, these idealizations are nothing specific to language, but instances of general mathematical idealization to infinity. Thus, we can find exactly the same idealizations (limitless memory and unlimited application of recursive rules) in Turing's construction of Turing machine as an idealization of human activity of calculation.

The idealization of a language and a speech community we are talking about is not this one. It is rather the idealization along the dimension of variation-homogeneity. The reason Chomsky thinks that there are no actual speakers of Italian or that the concept of Italian or a speech community of Italian needs an idealization is not that all actual "Italian speakers" have only finite memory or are susceptible to errors, but that their languages are different from each other. Therefore, what is needed here, according to Chomsky's view, is the construction of the concept of "an ideal Italian speaker" to which actual

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"Italian speakers" are approximations with respect to linguistic variety.

However, we cannot do this idealization as we can do for geometrical concepts. The reason is that we, whether Italians or foreigners, have no pre-given concept of "an ideal Italian speaker" that we are supposed to refine in the course of idealization. Of course, we can imagine a speech community of Italians without any internal linguistic variation; what we cannot easily imagine is what version of Italian might be spoken in that community. The concept of a language is not idealizable. Consequently, we have no idea about how to construct the concept of "an idealized homogeneous speech community of Italian" since we don't know which version of Italian should be chosen as the language of such a community. We see no other way of doing such an idealization except by arbitrary choosing a particular speaker as a "standard" for Italian or by constructing a social linguistic "norm" of "good Italian". If the linguist chooses the first option, he/she can hardly say that he/she studies Italian language rather than an arbitrary chosen individual's language since there is no reason or ground that makes this individual "a standard of Italian speaker". On the other hand, if the linguist chooses the second path, this is nothing but what is usually called "prescriptive linguistics" or "school grammar", which doesn't study how people actually speak,

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but recommend or order how they should speak. We know that Chomsky firmly rejects such a prescriptive approach to languages, which is based on what Chomsky calls "normative-teleological element" in the ordinary concept of languages.[34]

This dilemma indicates that the pre-given concept of a language like Italian is not an idealizable universal but a real universal whose instantiations are actual people who we usually call Italians or Italian speakers. Insofar as we consider the concept of language as an universal idealizable along the dimension of variation-homogeneity and think that theoretical concept of Italian in linguistics should be the result of idealization, the linguistic unity of Italian and actual linguistic variation among people who we pre-theoretically call Italians or Italian speakers necessarily appear as conflicting with each other, nevertheless we have no idea about how to construct the concept of "an ideal speaker of Italian" or "an idealized homogeneous speech community of Italian" in order to resolve this conflict. However, once we see this concept as a real universal, as we should do, these two elements don't appear as conflicting any more since the concept of Italian language doesn't specify the totality of the linguistic features of any individual idiolect, but only the common part of the linguistic features of people

34. See Chomsky 1986, p.16.

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who we pre-theoretically call Italians or the speakers of Italian. Such a partial specification of linguistic features necessarily implies the actual linguistic variety among Italians, and these two elements (the linguistic unity of Italian and the linguistic variety among Italians) are rather complementary to each other. Therefore, we conclude that Chomsky's argument for the necessity of the construction of the concept of an idealized homogeneous speech community from the observation of actual variety among what is usually called speech community has no ground. The concept of a language and speech community can be the foundation for linguistics without idealization to an homogeneous speech community.

Before turning to Chomsky's second point about the language acquisition in a homogeneous speech community, let's briefly think about how linguists should investigate the concept of a language and speech community. As we discussed above, the attitudes we have to take toward an idealizable universal and a real universal are radically different, and this difference determines the nature of investigation in the corresponding areas. When we have an idealizable universal as the object of our investigation, we know that we cannot find exact nature of this concept by investigating the individuals which we pre-theoretically take as its instantiation since we know that they are really not its instantiations, but only approximations.

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Therefore, we first have to idealize this idealizable universal to know its real nature, and what becomes the object of our theoretical activity is not the original idealizable universal but the result of idealization. The object of our theoretical investigation is constituted by our act of idealization, and actual individuals have little relevance to our investigation. On the other hand, when we have a real universal as the object of our theoretical investigation, the object of our investigation cannot be constituted by our act of idealization, but has to be considered as given in actual individuals. What we have to do in this case is to put the universal that is instantiated in actual individuals into theoretical terms; thus it is the actual individuals that we have to first investigate and to always return to when we need further factual basis. This is the process of the discovery of the unity of a real universal.

When we thus investigate actual individuals in the process of the discovery of the unity of a real universal, we cannot simply investigate each property of individuals indifferently; we rather have to apply the essential structure of the complementarity of the unity and the variation to each individuals. In other words, we always have to ask which properties of an individual constitutes the unity of a universal by virtue of which the individual instantiates this universal and which properties make this

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individual a particular variation of this universal.

Moreover, when we think about the variation of a real universal, we have to sharply distinguished bounded variation and free variation. A bounded variation of a universal is an aspect of an individual that is not determined by the unity of the universal itself but is conditioned by the possibilities that are structurally determined by the nature of the universal itself. On the other hand, a free variation is an aspect of an individual with respect to which this individual differs from other members of the same universal.

Let's take a lion as an example again. A lion is a mammal that lives on land. From this basic characterization of this universal, it follows that each individual lion has a particular gender and a particular land with a particular climate as its habitat. Each lion has to have a particular value for these two variables (gender and habitat/climate), whatever its individuality may be. Moreover, each variable has only limited range of values that is determined by the nature of lion, though it doesn't mean we can always count the number of possible values for each variable. A certain part of the properties of each lion is conditioned by the climate of its habitat, and this part constitutes a bound variation of a lion as a species conditioned by the climate of habitat. Very often, this bounded variation of a biological species constitutes

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a sub-species. Actually, there are now only two places in the world that lions have as their natural habitats: Africa and India, and two different climates of these habitats condition two variations (sub-species) of lions. Another part of the properties of each lion is conditioned by its gender, and there are two bound variations of a lion according to two genders. In addition to these two types of bound variation, each lion has many idiosyncratic properties which make it an individual lion. We can discover and explicate the unity of lion as a real universal only as the set of properties that unifies its bound variations into a single biological species. Therefore, we have to consider that this unity is instantiated in actual individual animals we pre-theoretically call lions if we are to seriously investigate the nature of lions, though there is always a possibility that there is actually no such unity among those individuals.

When we study a language, we have to take exactly the same attitude. If we are to seriously investigate Italian language, we have to consider that this universal is instantiated in the knowledge of people we pre-theoretically call Italians. Moreover, this universal is instantiated only through the complementary structure of the unity and the variation. The linguistic bound variation is conditioned by such factors as locality,

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gender, and social class. The bound linguistic variation conditioned by the locality of each individual constitutes a dialect, and, therefore, has the primary importance. On the other hand, the bound variations conditioned by other factors are usually called "styles". The linguistic unity of a language is the common knowledge that is shared by the speakers with different dialects and styles. When a linguist seriously takes a language, say Italian, as his/her object of investigation, the basic assumption is that people called Italians or the speakers of Italian have this common knowledge of language that both Italians and others recognize as an "Italian way of speaking" despite the great amount of linguistic varieties among Italians. In such an endeavor, the linguist shouldn't be discouraged by a superficial difference among dialects or style, even by such a difference that amounts to the mutual unintelligibility among speakers. If we consider the fact that dialects are more often different from each other in their phonological features than their syntactical features, many cases of apparent radical difference among dialects of a language should be considered as the cases of the phonological and/or phonetic variation of the same sound system (think about how High German and Low German phonologically differ from each other). This, of course, doesn't mean that we can always discover certain unity whatever pair of speakers we choose. For example, if we

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choose a speaker of Japanese and a speaker of Italian as our initial objects of investigation and think that we are investigating a single language yet to be discovered, there is nothing that justifies such an attitude as a serious linguistic investigation. The reason is that neither these two speakers nor any outsiders recognize that their share the same language; they have no historically significant linguistic relation, either. When a linguist select a language as his/her object of investigation, this theoretical activity is never such that the linguist happens to select certain numbers of speakers without knowing whether they share the same language or not. The linguist already knows that there is (or used to be) a community whose members share a unique way of speaking, and it is this way of speaking that the linguist tries to explicate. The very act of the linguist's selecting a language as his/her object of investigation indicates the existence of the pre-theoretical relationship between the linguist and the speech community of that language, whether the linguist is explicitly aware of this relation. The linguist him/herself may be a member of this community; in this case the theoretical activity of the linguist is essentially the inquiry of one's own linguistic identity. The linguist may have friends in this community or be interested in the culture of this community. In such a case, the linguist's activity is the inquiry of another

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mode of human existence realized in the speaking activity of another speech community. In either case, the investigation of a language is always an investigation of the varieties of human beings that are constituted by the varieties of communal knowledge of speaking activity in a certain speech community, to one of which the investigator him/herself belongs. When the linguist studies a language only through books without having any direct connection with its speech community, it is very likely that the linguist forgets the fact that what he/she studies is a particular mode of human activity in a certain speech community. However, if the linguist seriously asks the following two questions concerning the significance of his/her activity, he/she will inevitable realize the real significance of what he/she is really doing unless he/she nihilistically considers his/her own activity as a meaningless intellectual game. The first one is: what is the meaning of what he/she reads, especially the meaning of the theoretical categories used in these books such as sentence, noun, noun phrase, subject, object, and so on. The second one is: how were these linguistic facts discussed in these books originally known as facts by the authors.

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Now let's discuss Chomsky's second point which asserts that children's ability to learn language in Chomskyan homogeneous speech community that gives children "pure and uniform experience" is an necessary precondition for their possibility of learning language in a heterogeneous speech community. We think that this thesis seems to be false if we take the concept of "homogeneous speech community" that gives children "pure and uniform experience" literally. In other words, we think that it is very difficult for a child to learn a language if his/her environment is acoustically uniform and there is no variety among individual speakers or styles of an individual speaker since there seems to be no way for a child to discern the unity and the variation for each linguistic category. On the other hand, if what is meant by " homogeneous speech community" is something different from this, these seems to be no reasonable way to specify this concept as a theoretical pre-requisite for the study of language acquisition. In either case, we think that this second point, from which Chomsky argues for the theoretical necessity of the concept of homogeneous speech community, has no ground.

First, let's think about the concept of "homogeneous speech community" itself. We have to specify the particular level at which the members of this speech community are homogeneous in order to understand what is meant by this concept. For example, one possible

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assumption is that they share all possible syntactic constructions and the lexicon, but have different frequencies of the use of each vocabulary and have different quality and pitch of voices. Another possible scenario is that they are exactly like each other in all possible linguistic features, including phonetic and acoustic aspects as if they were robots of the same type. The question is, what kind of scenario does Chomsky have in mind when he talks about "homogeneous speech community" and "pure and uniform experience"? If he means by them a condition in which children's physical(acoustic) stimuli have only minimum variation, the second scenario seems to be what Chomsky means. However, we have good reason to think that children cannot learn language in such a condition. To learn a language means to acquire atheoretical knowledge of various linguistic categories, among which are included phonological categories of speech sounds in a target language. This means that the child has to acquire the ability, among other things, to judge whether a given acoustic object is an instance of a certain sound of the target language or not. However, this ability is not the same as the ability to discern the same acoustic stimulus as such, but it is the ability to recognize various different acoustic objects as variations of the same sound. It is because each speech sound is a real universal that specifies only a part of the acoustic

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features of an actual speech sound. Think about the English sound /a/. There is no single acoustic object which the child can take as the paradigm or standard of /a/ to which all other sounds are mere approximations. /a/ of the mother when she is relaxed, her /a/ when she is irritated, /a/ of the father, /a/ of brothers and sisters, and the child's own /a/, all of them are equally the variations or repetitions of this real universal /a/ despite the acoustic difference among them. For a child to acquire the knowledge of the category of /a/ means to learn that all of them are equally the instantiations of this category. We have to simultaneously learn the unity and the possibility of variation to acquire knowledge of a category. If a child is exposed to the same acoustic object as the instantiation of /a/, he/she is likely to equate this particular acoustic object with /a/ itself so that he/she fails to recognize that /a/ can be produced by different people with different voices, just as a child who is given the same father's shoes as the example of shoes would fail to recognize that the concept of shoes can apply to other pairs of shoes. Exposure to the variations is a necessary condition for the acquisition of knowledge of a category. Therefore, Chomsky's point has no ground if we take his concept of "homogeneous speech community" at the phonetic level.

On the other hand, if we are to understand the meaning

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of "homogeneity" at other levels so that the acoustic variation exists in the speech community, there seems to be no way to select the level of homogeneity other than that of actual unity within an actual speech community. For once we depart from the level of acoustic homogeneity, causal effects of stimuli on a child become quite diverse, whichever level of homogeneity we may choose, and what matters most under the current causal view of language acquisition is the causal homogeneity of acoustic stimuli. Does the homogeneous frequency of uses of words facilitate language acquisition? Is the syntactical homogeneity all that matters? If the concept of "homogeneous speech community" is a necessary pre-requisite for the theoretical investigation of the process of language acquisition, the linguists have to be able to answer these questions when they start the investigation. Otherwise, these is no way to understand what they mean when they talk about a child's language acquisition in a homogeneous speech community. On the other hand, if these questions can be answered only through the investigation of the optimal condition for language acquisition, the concept of "language acquisition in a homogeneous speech community" is not a pre-requisite for the theoretical investigation of language acquisition, but rather one of topics in this discipline. If this is the case, Chomsky's second point is nothing but one empirical hypothesis which waits for the confirmation by

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the actual observation of children's language acquisition under various conditions. We cannot use such a hypothesis as an independent ground for the concept of homogeneous speech community as a necessary pre-requisite for the whole discipline.

In either case, Chomsky's second point as a part of his position that rejects the theoretical adequacy of the concept of a common language and speech community has no ground. Actually we can hardly think that this second point reflects any serious thinking on the nature of actual language acquisition; it rather seems to be an artificial argument that was made up only for the defence of Chomsky's individualistic view of language as another dogma.

Therefore, we conclude not only that Chomsky's argument from the actual diversity among dialects and individuals' styles doesn't constitute any reason to reject the concepts of common language and speech community as the fundamental categories in linguistics, but also that they are necessary for the theoretical activity of linguistics and <u>are</u> actually used even by Chomskyan linguists. There is no positive reason to think that Chomsky's individualistic view of language is correct, and actual practice of current generative grammar (G.B.) indicates the contrary. Chomsky's individualistic view of language as well as his naturalistic view of language seems to be nothing but a

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dogma in the sense that it is simply repeated independently of any considerations of the actual nature of languages and the actual theoretical practice of generative grammarians. Since this individualistic view of language is almost a necessary consequence of any serious attempt to naturalize language, we conclude that it is reasonable to reject Chomsky's naturalistic view of language and knowledge of language, too.

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