BEYOND OBSERVATION

Literature and Science in Kafka, Rilke, Mann and Musil

by

Ekaterina Ilina

A dissertation submitted to the Graduate Faculty in Germanic Languages and Literatures
in partial fulfillment of the requirements for the degree of Doctor of Philosophy
The City University of New York

2009

© 2009

Ekaterina V. Ilina

All Rights Reserved

This manuscript has been read and accepted for the
Graduate Faculty in Germanic Languages and Literatures in satisfaction of the
dissertation requirement for the degree of Doctor of Philosophy.

	Professor Paul Oppenheimer
Date	Chair of Examining Committee
	Professor Tamara S. Evans
Date	Executive Officer

Professor Andre Aciman

Professor Christa Spreizer
Supervisory Committee

THE CITY UNIVERSITY OF NEW YORK

Abstract

Beyond Observation: Literature and Science in Kafka, Rilke, Mann, and Musil

by

Ekaterina V. Ilina

Advisor: Professor Paul Oppenheimer

The relationship between science and literature is an expanding area of scholarly interest which remains underrepresented within the field of Germanistik. This dissertation will attempt to close the gap by focusing on the interactions between the selected works of Franz Kafka, Rainer Maria Rilke, Thomas Mann, and Robert Musil, and the scientific outlooks which began to emerge in the nineteenth century primarily by focusing on the concept of observation. Observation is a concept important for the period of my investigation because it signified a major shift in consciousness. The prior facile division into impartial experimenter and observed phenomenon, so characteristic of the empirical science of the nineteenth century, gave way to a world-picture in which observed phenomena were understood as no longer independent of one's will but as to some extent at least contingent upon the observer's position with respect to these phenomena, and goals, tools, and methods of investigation.

A discussion of the problem of the relations between science and literature as a historically contingent phenomenon, in the introduction, precedes chapters delineating the connections of specific literary texts to the ideas of particular scientists. An example of such a pairing is the proposed exploration of Kafka's short story "The Report to the Academy" in the light of Darwin's treatment of the relationship between biological observer and specimen (the object of observation). Other scientists central to my study,

and whose methods will also be treated in tandem with relevant literary works, are Ernst Mach, Sigmund Freud, and Albert Einstein.

This interdisciplinary study will show in new detail that literary texts do not simply reflect the ideas, desires, and fears produced by science; instead that both the literature and science of the period under investigation are permeated by similar sets of underlying assumptions about the world and man's place in it.

Acknowledgements

This dissertation would not have been completed without the support of many people, some of whom must be mentioned here by name. I owe a debt of gratitude to my dissertation advisor Paul Oppenheimer for his insights, breadth of perspective, and his tireless reading through all of my drafts line by line. His generous and insightful council helped me to improve the content of this dissertation, to root out some unfortunate writing choices, and to bring it to its completion.

I also would also like to thank the other members of my committee. I thank Christa Spreizer whose attention to detail and advice during the final stages of this dissertation were deeply appreciated. Andre Aciman asked many provocative questions challenging the validity of my choices and contributing to the quality of this project. I thank him for making specific suggestions regarding the style.

I sincerely thank Tamara Evans whose wisdom, generosity, and faith helped me navigate my graduate school journey. She was a mentor throughout my years at the Graduate Center, and without her patience and support the isolating task of writing a dissertation would be impossible. There were many moments when her words sounded in my ears long after our conversations ended, and this might have been a much more generous form of support than I received otherwise.

A very heartfelt thank you must go to Burton Pike who was a source of inspiration in many of our graduate seminars, and whose comments, suggestions, and practical advice at the dissertation writing seminar made this task seem less daunting. I also thank the late Rolf Kieser for teaching me how to approach a long writing project from the basics.

I received funding through Lane Cooper Dissertation Fellowship, given each year by the CUNY Academy for the Humanities and Sciences, which significantly eased my financial burden and expedited my research.

Last, but by no means, least I owe the greatest thanks to my family. I thank first of all my parents for constantly reminding me to believe in myself, and especially my mom for her selfless help and encouragement during the crucial stages of writing. You more than anything else made this possible. I thank my husband Larry, whose support, love, and encouragement helped me go on: thank you for so generously sharing me with a manuscript for several years. My twins Aidan and Ashleigh, who don't know life without this dissertation yet, are the source of unconditional happiness and fulfillment. They are also one of the best things that ever happened to my self-discipline, teaching me to use every hour wisely.

Finally, I lovingly dedicate this dissertation to my grandmother, who did not live to see it finished but who never doubted that I would. Her courage, good sense of humor, and unwavering optimism continue to inspire.

Table of Contents

List of Abbreviations viii

List of Illustrations ix

Chapter One: Introduction 1
Observation Re-examined

Chapter Two: 46
Scientific Objectivity in Kafka's "A Report to an Academy"
and in several of Darwin's Works

Chapter Three : 85
A New Vision in Rilke's Die Aufzeichnungen des Malte Laurids Brigge
and Freud's „Der Dichter und das Phantasieren"

Chapter Four: 131
The Concept of Space-time as Dependent on the Observer
in Thomas Mann's Der Zauberberg and Einstein's Theory of Relativity

Chapter Five: 181
Reality as a System of Functional Relationships
in Works of Robert Musil and Ernst Mach

Chapter Six: Conclusion 233
What Do We See When We Observe?

Notes 255

Bibliography 269

List of Abbreviations

MLB	Rilke, Rainer Maria. Die Aufzeichnungen des Malte Laurids Brigge. Stuttgart: Reclam, 1997.
DMoE	Musil, Robert. Der Mann ohne Eigenschaften. Reinbek bei Hamburg: Rowolt, 1981.
MwQ	Musil, Robert. The Man Without Qualities. Trans. Sophie Wilkins and Burton Pike. New York: Knopf, 1996.
dZB	Mann, Thomas. Der Zauberberg. Stockholm: Fischer, 1939.
TMM	Mann, Thomas. The Magic Mountain. Trans. John E. Woods. New York: Vintage Books, 1996.

List of Illustrations

Page		
67	Fig. 1	Drawing by Kafka of acrobats, 1909 (Hartmut Binder Archive).
78	Fig. 2	"Chimpanzee disappointed and sulky. Drawn from life by Mr. Wood" Fig.18 from "The Expression of the Emotions," From So Simple A Beginning. (New York: Norton, 2006) 1340.
117	Fig. 3	Rodin, "The Cathedral," 1908.
167	Fig. 5.	X ray photograph of the hand of Bertha Röntgen made by her husband on December 22, 1895. Robert Nitske. The Life of Wilhelm Conrad Röntgen, Discoverer of the X Ray. (Tuscon: The U of Arizona P, 1971) 6.
211	Fig. 6	A Self-Portrait by Mach. The Analysis of Sensations. (New York: Dover, 1959) 19.

Chapter One: Introduction
Observation Re-Examined

> Alles, was wir sehen, könnte auch anders sein.
> Alles, was wir überhaupt beschreiben können, könnte auch anders sein.
> Es gibt keine Ordnung der Dinge a priori.[i]
> *Tractatus Logico-Philosophicus*, Ludwig Wittgenstein

This dissertation, focusing on the concept of observation, will explore the relationship between German literary works and the changing scientific outlook at the end of the nineteenth and the beginning of the twentieth centuries. I propose to investigate the affinities of literary texts with scientific views of the time, as well as the resistance to science, and to consider how these are reflected in their narrative structures and techniques, their types of fictional characters, their themes, and the values which they affirm or question. Observation is a concept important to the period of my investigation chiefly because it signifies a major change in consciousness and it therefore allows me to explore revealing connections between modern science and literature. According to some historians of science as well as cultural critics (Holton, Everdell, and Kuhn), what one observes depends to a large extent on one's previous visual-conceptual experience: past assumptions are a starting point for the process of understanding. Such prior training is a prerequisite of perception, and it provides a framework, which the observer may impose upon the complexity of the natural world. During the period on which I focus, observation began to be thought of as an interpretive and reflexive process--rather than as a way to access nature "directly"--which is always selective and which may require a specific problem, point of view, and object. For purposes of discussion, observation will

[i] Whatever we see could be other than it is. Whatever we can describe at all could be other than it is. There is no a priori order of things.

here be defined as a purposeful looking accompanied by an insight, a record of which is later made. A division into subject and object is inherent in physical vision itself, involving one who sees, or the viewer, and that which is seen. Science deals with the facts of physical nature which can be repeatedly observed and described within current or proposed scientific theories; whether the results of observation can be communicated unambiguously remains a question to be investigated in what follows.

The epigraph above, from Wittgenstein's Tractatus logico-philosophicus (1918), alludes to the feeling of insecurity and arbitrariness that seemed to extend into many areas of thought at the turn of the twentieth century. Advances in physics, biology, psychology, and physiology had challenged the positivistic optimism of nineteenth-century science and the common belief that the most important features of nature had already been discovered, that improvements in theory were to be looked for mainly in the details.[1] While the nineteenth-century "objective" observer believed that watching phenomena in a detached, unbiased manner would eventually lead to discoveries of the truths of nature, modern thought had already begun to surrender its assurance that phenomena could be observed steadily and in their unity from some privileged perspective. Positivists saw the experimenter, or observer, as "objective"—that is separate from the material reality that he or she wished to observe. In many instances, causal and deterministic explanations of reality, typical of empirical science, proved inadequate, however, and were replaced by the statistical and probabilistic concepts.[2] Artists and scientists alike had begun to debate anew whether reality is directly accessible to man, or whether what we see is only a representation, a product of our sensory perceptions--an idea that had cropped up time and again since Plato's allegory of the

cave. Convictions about a general ambiguity of meaning had begun to affect whole sections of culture: experiences provided by the senses were pronounced indistinguishable from reality; the location and velocity of elementary particles could not be determined without taking into account the observer, once objective categories of time and space were declared dependent on the speed of the observer, and the human mind itself seemed to be governed by a vast unobservable undersection of itself hiding the repressed past. Instead of purely deterministic laws through which nature might reveal itself, modern man seemed also to be confronted with an instability of meaning in many areas and, as a consequence, a reality in which certain processes were, by their very nature, random and only statistically predictable. It was becoming evident that nature's "fundamental laws do not govern the world as it appears in our mental picture in any very direct way, but instead control a substratum of which we cannot form a mental picture without introducing irrelevances" (Hiebert 236).[3]

In focusing on these shifting meanings of observation, this study will consider as most pertinent and revealing to its inquiry Franz Kafka's short story „Ein Bericht für eine Akademie" (1919), Rainer Maria Rilke's Die Aufzeichnungen des Malte Laurids Brigge (1910), selected chapters from Thomas Mann's Der Zauberberg (1924), and selected chapters from Robert Musil's Der Mann ohne Eigenschaften (1930-52). The approach consists not so much of identifying the direct influences of scientific works on literary texts, although where possible direct connections will be explored, as looking at complementary treatments of similar issues in both literature and science. Successful literary texts do not simply reflect desires and anxieties produced by science and technology; instead both the literature and the science of many periods seem to be

permeated by the same or similar sets of underlying ideas about the world and man's place in it. Neither literature nor science can probably ever be considered an autonomous domain, but each operates within the constraints of current cultural assumptions, as well as those of actual discoveries. Such assumptions, or as William Everdell calls them, a "set of centrally located ideas," are rarely purely scientific or purely fictional (Everdell 8).[4]

Analyzing the concept of functional relations in the works of Ernst Mach and Robert Musil in fact helps to illustrate this point. Both speculate on the replacement of a classical model of causality with the concept of functional relationships, although Mach has science in mind and Musil morality. Essentially, they are each interested in how the mind relates to the world as it organizes experience into knowledge, although it was precisely Musil's quest in his early work to show the difficulties involved in living without causality as a principle imposed by reality itself. In The Analysis of Sensations, for instance, Mach insists on the obsolete nature of the notion of causality in physics and psychology:

> The connections of nature are seldom so simple, that in any given case we can point to one cause and one effect. I therefore long ago proposed to replace the conception of cause [with] the mathematical conception of function,--that is to say, [with] the conception of the dependence of the characteristics of phenomena on one another. (89)

The protagonist of Musil's novel Der Mann ohne Eigenschaften, Ulrich, similarly uses the language of physics to describe his view of moral phenomena and insists that they operate within a single field of energy without which they have no independent meaning:

> Sie [moralische Ereignisse] waren gewissermassen das, was sie wurden, und so wie das eine Wort Hart, je nachdem, ob die Härte mit Liebe, Roheit, Eifer oder Strenge zusammenhängt, vier ganz verschiedene Wesentheiten bezeichnet, erschienen ihm alle moralischen Geschehnisse in ihrer Bedeutung als die abhängige Funktion anderer. (258)[ii]

In this way an open-ended system of relationships arises, in which independent meanings no longer exist. What Mach is suggesting, and Musil wishes to question, is that one cannot properly focus on Kant's famous thing-in-itself, whether it be a physical phenomenon or psychological one, because things are not separable from our perceptions of them.[5] Instead, one should be concerned with functional relations between things. This view, expressed in Mach's The Analysis of Sensations (1886), signified the beginning of a major shift in science because it allowed for the inclusion of the observer in the act of scientific observation. The prior, facile division into impartial experimenter and observed phenomenon, characteristic of nineteenth-century empirical science, now began to give way to a world-picture in which observed phenomena were no longer considered independent of one's will but were, to some extent, contingent upon the observer's position with respect to these phenomena and upon the goals, tools, and methods of investigation. "Things" could no longer be viewed apart from the physiological limitations of the eye that viewed them, the instruments that measured them, or apart from the context of observation.

[ii] They [moral events] are what they will become, so to speak; and just as the word "hard" denotes four entirely different essences, depending on whether it is connected with love, brutality, zeal, or discipline, the significance of all moral events seemed to him [Ulrich] to be the function of other events on which they depended. Musil, Robert. Der Mann ohne Eigenschaften. (Reinberg bei Hamburg: Rowohlt, 1978) 258. The Man Without Qualities. Transl. Sophie Wilkins and Burton Pike. (New York: Knopf, 1996) 270.

In the beginning, it seems, the work of Charles Darwin, upon whose methods Ernst Mach relied, began to clear the ground for this change in scientific thinking. Darwin was among the first to place man among the other animals, thereby extending the authority of science from limited realms of natural phenomena--fossils, minerals, varieties of domestic animals--into that of the human. Man, traditionally considered the crown of creation, was for the first time turned into an object of study on an equal footing with "lower" animals. In other words, the "objective" observer would now be observed. Among other important changes that Darwin's theory brought about was the replacement of a purposeful, static, and hierarchically ordered natural world with a strikingly unidyllic image of a nature continuously at war, in which one organism struggled with another or with unfavorable conditions of life. The animate and botanical world was transformed into a battleground, and despite the fact that Darwin himself considered that such a struggle eventually led to the production of "endless forms most beautiful and most wonderful" (The Origin 760), traditional metaphysical convictions about the origins of beauty and the foundations of art were themselves called into question. Modern thought had yet to absorb the idea that a number of random forces acting together over unimaginably long periods of time, with no final goal in mind—such as beauty, perfection, and order—might be the driving force of life.

Another contemporary thinker of equal importance, whose methods contributed to this type of expansion of the boundaries of science and who sought to turn the observation of inner life into a science, thereby earning him a place in this investigation, was Freud. His work indeed prompts a revolutionary change, if only because dreams, fantasies, and fears, precisely the materials of the unconscious that he studies, had not

previously been considered valid objects of scientific inquiry; they lacked the materiality, which scientists could measure and record. Freud regarded his newly discovered science of psychoanalysis as being as observational, which is to say as empirical, as the astronomy of his day, in which experiments might be both impossible and irrelevant to scientifically valid data-collection and insight.

Along these lines, too, one cannot consider the changing views of the nature of observation and not mention Einstein's equally contemporary discovery that space and time are relative to the position of the observer. Classical physics had stated that all observers, whether moving or stationary, would arrive at the same measurement of time and space; Einstein demonstrated that there could be no absolute time or space, as Newton had imagined, because both are dependent upon the observer's and the observed system's relative motions. It is not that Newton was declared wrong—in many cases his insights remain perfectly valid—but that other phenomena were discovered, for which the laws of traditional mechanics proved insufficient.

The focus of this dissertation on the concept of observation will, in fact, be determined by this significant shift in thinking. The ways in which literature and science come to define space, time, perspective, perception, development, reality, human values, and the human mind itself, are in many ways related to the problem of observation. I have chosen to limit the primary texts to works that seem appropriate to the theme of the inquiry: these are the texts that seem most significantly to have changed the ways in which people see and interpret reality, or their world.

The idea that what one sees and experiences must depend on where one is, or on the position of the observer and his or her awareness of the act of observation, at once

allowed for an expansion of the rigorous methods of a positivist nineteenth-century science, overcharged, as some might say, with determinism and reductionism.[6] My title here, "Beyond Observation," thus signifies the extension of the nineteenth-century ideas of empirical observation to include other modes, such as those already cited. The premise is that the act and practice of observation are bound up with the way in which we see the world, and ourselves in it, and also with the way by which we tell our stories about it. For literary works, the disappearance of an objective independent observer meant that a traditional heroic, outstanding, well-rounded character--one extreme--came ultimately to be replaced by a man without qualities, as with Musil's Ulrich, or an animal's voice, as with Kafka's Rotpeter, or by a character who consistently fails to find grounds for his identity, as with Rilke's Malte, or by an "ordinary" man, as with Mann's Hans Castorp. In the cases of all these new types of protagonists, observation begins to figure as an important theme or a leitmotif: for instance "learning to see" for Rilke's protagonist Malte coincides with his aspiration to become a poet, even as in Mann's novel the changed geographical position of the protagonist determines the pace of time, at least for him.

At the same time, a traditional narrative begins to give way to a more fragmentary or essayistic form, or to a narrative that refuses to be defined by the rules of logic. This is not to say that the writers of earlier epochs did not on occasion experiment with similar possibilities, but that when they did so, they set out to achieve a different effect. If a concise and witty romantic *Fragment* contained a whole world in itself, then, in contrast to it, the fragmentary form of modernist writers often seemed to stand for a perceived lack of unity in the emotional and psychological world. At the end of the eighteenth

century, Novalis wrote in one of his fragments "Der echte Dichter ist allwissend—er ist eine wirkliche Welt im kleinen," and later "Der Dichter versteht die Natur besser wie der wissenschaftliche Kopf."[iii] [7] In the modernist period this confidence about the role of the poet and his ability to comprehend reality, characteristic of the romantic writers, seemed often in turn to be replaced by an attempt to raise literature beyond the status of science: through stylization and ornament, through self-questioning, doubt, as well as through a struggle to express a transformed social reality and the new scientific concepts themselves.

If Goethe's Werther is the study of an individual soul's engagement with passions, nature, sentimentality, and pathology, then the very existence of a unique individual soul became problematic for many of the authors of Robert Musil's generation. The concept of identity began to be questioned, even as the ego was pronounced by Mach as a mere flow of sensations, even as Freud's theories about the powers of the unconscious made the existence of individual's will problematic. Equally new was the tendency of Modernist literature to question its own status, role, and power to influence an audience. Thus, writers of the previous generations who tried out similar techniques (Fragment) or to grapple with similar issues (the study of individual soul) had a different set of solutions available to them, and in part this depended on the status of science in society, as well as on particular scientific ideas.

Major works alone, and those of literature, will be considered below, which through style, themes, choice of characters, and metaphors, reflect in recognizably influential ways on the role of scientific themes in society and in individual lives.

[iii] A real poet is all-knowing. He contains the whole world in small.
The poet understands nature better than the scientist.

Research has been guided by an assumption that even those works of literature that do not address science directly, such as Rilke's Die Aufzeichnungen, reveal underlying tensions with respect to a prominent scientific world-view and changing modes of observation. The focus of this study is thus literary, and it is my goal to show that literature, like science, embodies and reflects the essential concerns of an age. Moreover, the scientists whom this dissertation discusses are generally recognized as apt writers themselves: in their scientific works, human vision is extended by the same literary means, such as metaphor.

In this light, *Chapter Two* deals with Kafka's short story "Ein Bericht für eine Akademie" in relation to Darwin's ideas of evolution, the development of species, the struggle for survival, and the detached position of the scientist-observer. In a certain sense, Darwin brought into science what Kafka made possible within the realm of literature—the disruption of the idea of intentionality in the universe, of the commonly accepted conventions of its coherence and continuity, and the introduction of its unpredictable transformations, of reality understood as a constant process of change. Darwin's concept of evolution is not of a series of causally linked stages leading toward a pre-established goal of perfection--although, as he warns his readers, some scientists tend to view it as such--but of a number of forces acting together to produce a possibly unlimited number of variations. Darwin's law depends on the concept of variability. Similarly, the realities depicted in Kafka's narratives contain no predictable rules and laws, and therefore remain open to various quite unpredictable choices for characters and plots, which often seem to float free of nature altogether. His characters constantly metamorphose into other forms, even as identity is never stable, and fictional realities are

ambiguous, layered, and frequently incomprehensible: a man may turn into an insect, an ape evolve into a man, and a dog begin to question the existence of its own species. As in Darwinian theory, species and varieties blur—notions of species, class, genus being only conventional ways to help classify living forms—constantly changing and always differing greatly from what they once were: Kafka's Gregor Samsa awakes one morning as an insect, Rotpeter in "Ein Bericht für eine Akademie" is an ape who decides to stop acting like an ape and becomes human. But if, according to Darwin, such variations in nature accumulate only over vast periods of time, in Kafka's stories, they unfold rapidly, as before the readers' eyes. In this chapter therefore, Kafka's story will be considered in connection to the Darwinian treatment of the relationship between scientist (or the observer) and specimen (or object of observation). Darwin's The Expression of the Emotions implies that animals are far enough down on the evolutionary ladder to be observed in a distanced and objective manner, yet close enough (literally, having the same origin) to allow the scientist to draw conclusions about the human race. This chapter demonstrates how the position of Kafka's Rotpeter in "Ein Bericht für eine Akademie" (1919) is similar to that of the objective observer in Darwin's theoretical writings. Rotpeter is a rational and analytical creature capable of suppressing his emotions to narrate his story of humanization in the form of a scientific report. A Darwinian role reversal takes place when the ape is transformed into a man by means of his powers of observation and his imitation of human behavior. The paradox of Kafka's story is that it is told by an animal, and thereby seems to engage in a dialogue with Darwinian tradition.

Chapter Three explores the intersections of Freudian concepts—those of the unconscious, of repression, and of self-observation--with the themes developed in Rilke's Die Aufzeichnungen des Malte Laurids Brigge (1910), which can be viewed as a novel about learning to see in a new way. Although many of Freud's works became known to a wide public only after Rilke's novel had already been written, the writer's interest in psychology and pathology seemed to have been typical of the period. Rilke himself knew about developments in psychoanalysis mainly through Lou Andreas-Salomé. In his letters, he acknowledged that the idea of undergoing psychoanalysis to treat his unstable condition, as he viewed it, sometimes occurred to him, but he feared that it could undermine his creativity, or, as David Kleinbard observes, based on his reading of Rilke's letters, that "with the exorcism of his devils, his angels too might leave" (14).

In the opening passages of this novel, a fictional young writer, Malte, reports that he has discovered the inner part of himself of which he was previously unaware and which seems to contain and control his fantasies and desires. This concept has since become widely known from Freud's works, in which he defines the unconscious as, among other things, a storehouse of artistic ideas. I shall be making particular references throughout my own chapter here to Freud's essay "Der Dichter und das Phantasieren" ("Creative Writers and Daydreaming") (1908) which outlines his concept of creativity as a series of corrective measures taken against an unsatisfying reality, or wish-fulfillment.

Die Aufzeichnungen is a novel about seeing and being seen: Malte's goal of learning to see (Sehenlernen) in a new way is constantly interrupted by his anxieties about being seen by strangers in a large city. Paris, as a city of spectacle (one is constantly been looked at by strangers in the crowd), is threatening, it can deprive one of

the individuality necessary for the creative process, in the sense of a Western tradition where a stable individuality is a prerequisite of authorship. Malte is apparently suffering from a split personality after having discovered parts of his "I" previously unknown to him, and the gazes of a strange crowd directed at him, of the cripples, the sick, and the homeless, seem to intensify his fears of ego fragmentation. This aspect of the novel has undeniable parallels with Freud's ideas about the mechanism of repression, as well as with his insights into the genre of the psychological novel. Freud points out the ability of the modern writer "to split up his ego, through self-observation, into many part-egos" ("Creative Writers" 51). Rilke's protagonist possesses a similar ability to observe various parts of his own ego: Malte the beginning writer; Malte the reader; Malte trapped in his childhood fears; Malte unable to distinguish what part of himself truly belongs to him, and what belongs to the costume, which he tries on as a boy in his grandfather's house; and Malte the prodigal son. These "fragments" of Malte's ego are not mere roles that individuals assume in various contexts throughout their life: they fail to merge into a coherent personality, as if they belonged to different people.

It will be important to take stock of the fact that the final version of the novel allows the reader an intense concentration on Malte's experiences: the narrative frame of earlier versions is eliminated, as are the circumstances of Malte's death. Previously, various scenes describe Malte as the fictional narrator's acquaintance whose notebooks are edited and have been organized posthumously. I will touch upon the similarities and differences between the novel's narrative perspective and the genre of the Freudian type case-study, or record of close observation of an individual in the context of a particular situation. Like such a case-study, Rilke's novel deals in a quasi-scientific way with a

segment of a person's life, it is not a life-story but a close examination of an individual in a sealed-off situation, its aim being not an exhaustive account but a selective analysis. The difference is that, in contrast to Rilke's novel, psychological cases are studied retrospectively and provide some commentary on the causes, symptoms, as well as possible outcomes of a neurotic instance.

Chapter Four discusses Thomas Mann's novel Der Zauberberg in relation to Einstein's concept of space-time, which is contingent on the position and movement of an observer. The central role of science in the novel distinguishes it from other fiction as it in various ways relies on biology, medicine, psychology, embryology, and physics. Mann not only makes scientific ideas a constant background of his novel but also finds many points of contact with Western philosophical and literary traditions. Mann was a contemporary of Einstein—both met in Princeton-- and it is thus perhaps not incidental that both are preoccupied with the concept of time, as were other literary contemporaries, such as Faulkner and Proust. The problem of time can of course be seen as crucial in an epoch when the development of communications, transportation, and commerce required a standardized way to measure time and new ways to speed it up or shorten it. Einstein concluded that there could be no single valid standard of measuring time because its measurement depends on the position and movement of the observer within a particular frame of reference; moreover, cosmic time and space are aspects of a higher unity that lies beyond the reach of ordinary human perception.

Mann's novel is distinguished by its intense preoccupation with the concept of time: there is the time of the flat country below the mountains in the book and mountain time itself, the time of the fast-paced world down below and the time of the sick and

dying above, in a sanatorium. The passage of time in the novel becomes dependent on particular conditions of place, geography and climate ("Drei Wochen sind fast nichts für uns hier oben. . . ." 8) (Three weeks mean almost nothing for us up here). Time in the novel thus has more than one dimension, as realistic time overlaps with what seems fantastic. Walks into a village, conversations at dinner table, regular temperature taking, rest-cure on the balcony, all pertain to the realistic. Yet there are also allusions to Greek mythology, German fairy-tales, legends, symbols, and intertextual quotes, combined with contemporary scientific ideas derived from the protagonist's reading. There is no stable relation between time as measured by a clock or calendar and time as experienced by an individual: when one is idle, time slows down; when one is busy, it accelerates. The novel presents time not only as an abstract scientific concept but as an emotional experience marked by boredom and curiosity, joy and grief, love and friendship.

Temporality in Mann's novel is directly related to new visual technologies and their ability to transcend the present. Photography, cinematography, and the X-ray expand but also distort man's perception of time, enabling, respectively, a "freezing" of the moment, bringing the past into the present, or glimpsing into one's own grave.

In addition to its being a constantly recurring theme, time is also a principle of structure in the novel. Chapters differ according to the spans of time they cover, with Castorp's arrival and his first day in the sanatorium taking up almost as many pages as the next three weeks. The novel's structure is the result of the protagonist's perception of time, which dilates and contracts. The novel opens with the description of Hans Castorp's train journey as he sits by a window, observing the changing landscape outside--an

attitude of passive observation, rather than activity that is characteristic of him throughout the novel.

Chapter Five explores similarities and contradictions between the concepts and methods of Robert Musil and Ernst Mach: whereas the former sought to unify the truth offered by science with the insights offered by literature in a new form of knowledge about the real world, the latter insisted that phenomena should be viewed in their functional relations, thereby denying any real knowledge about a unified world (reality, according to Mach, is a bundle of sense data, and knowledge can only represent relations between things, not things and qualities in themselves). Both thinkers underscored the importance of an epistemological approach which allowed tracing the ideas historically, and both were committed to rigorous standards of objectivity, although both understood those standards in diametrically opposite ways. In the case of Musil and Mach, the connection between the two is directly determined by the writer's scientific background and his critical interest in Mach's scholarship. Musil's scientific training and knowledge were both extensive and profound, covering such diverse areas as engineering, physics, optics, mathematics, and experimental psychology; his doctoral dissertation consisted of a "Beitrag zur Beurteilung der Lehren Machs" (1908). The chapter also explores Musil's attempts to bring art into relation with modern science so as to overcome his culture's antagonisms between scientific objectivity and the realm of feelings, intellect and morality, or between "precision and soul." In addition to analyzing selected chapters of Der Mann ohne Eigneschaften, I will also look at some of Musil's essays relevant to the topic of this dissertation, such as "Das Unanständige und Kranke in der Kunst" [The

Obsence and Pathological in Art], "Über den Essay" [On the Essay], "Der mathematische Mensch" [The Mathematical Man], and "Geist und Erfahrung" [Mind and Experience].

Musil's search to define a more sophisticated relationship between science and art was guided by the acute awareness of a "pointless battle in contemporary civilization between scientific thinking and the claims of the soul." His solution was to offer a "different valuing of science as well as literature" through approaching conventional morality in a new way, applying scientific concepts to morality itself.[8] I plan to investigate scientific influences on the debate over good and evil, as reflected in Musil's writings.[9] The protagonist of his novel, Ulrich, does not see stable moral qualities in the world, only a system of relations between qualities. He is unable to define any moral quality independent of others because all interpretations of ethical characteristics acquire meaning only if one looks at them from a particular perspective and within a specific context. This attitude parallels Mach's view of functional relations. The mode of narration that corresponds to this view and enables Ulrich (and Musil) to look at things from many different angles, rather than from a single perspective, that of „essayism"[10]:

> Ungefähr wie ein Essay in der Folge seiner Abschnitte ein Ding von vielen Seiten nimmt, ohne es ganz zu erfassen,--denn ein ganz erfasstes Ding verliert mit einem Male seinen Umfang und schmiltzt zu einem Begriff ein-- glaubte er, Welt und eigenes Leben am richtigsten ansehen und behandeln zu können (Der Mann ohne Eigenschaften 257).[iv]

[iv] It was more or less in the way an essay, in the sequence of its paragraphs, explores a thing from many sides without wholly encompassing it—for a thing wholly encompassed suddenly loses its scope and melts down to a concept—that he believed he could most rightly survey and handle the world and his own life. (MwQ 270).

Along these lines, the novel opens with Ulrich's decision to take a year of vacation from life to look for a suitable application of his many abilities and predispositions. He becomes an observer of reality, a monsieur le vivisecteur, and life itself becomes a great experimental laboratory where one tests out different positions from which to define one's own identity. The world Ulrich is observing lacks any fixity and permanence: it is reality in flux, changed by science and technology. What was previously considered by empiricists as two separate entities--one in motion (physical reality itself) and the other at rest (the individual observing it)--are replaced by the view, introduced into philosophy of science by Mach, that describes time and space as perceptions of our mind.

Finally, in the *Conclusion* the study returns to the problem of observation in a fresh way. Here I plan to explore how science and literature alike struggled to embrace the new modes of observation, and how this struggle frequently resulted in visions both disorienting and puzzling. The question of language and its importance in scientific works will be taken up afresh. The advantage of this interdisciplinary study in fact will seem to lie in situating literary texts within a different context--the framework of scientific changes--thus allowing their previously overlooked meanings to emerge. This is not to say that exploring the affinities and contradictions between scientific outlooks and literary trends is the only way to gain a meaningful insight into literary works. It is however my contention that the relationship between science and especially these particular works of literature marks off a rapidly expanding area of scholarly interest to date underrepresented within the field of German literary studies, or Germanistik. It must be stressed that the relationship between literature and science is a historically contingent

phenomenon depending on which institutions are charged with the accumulation of past knowledge and development of new ideas during a given period, which groups in society have access to it, and which types of knowledge are considered primary--religion, philosophy, literature, or science--and by whom.

Prior to the specialization of science brought about by empiricism, literary, philosophical, and scientific activities frequently overlapped. Specialization among individual disciplines and the emergence of a scientific vocational pursuit in the nineteenth century not only provoked differing responses in fiction but also altered the traditional status and importance of several professions. Current research frequently emphasizes that there appears to be nothing inevitable about the existence of a gulf dividing the knowledge, or the ways of knowing, of scientists and non-scientists. Prior to the division of disciplines into various institutionalized fields of study, what belonged to science was poorly demarcated from what did not. For example, in the early modern period, the idea that man was the measure of all things formed a bridge between scientists, clerics, and laypersons. And in the seventeenth and eighteenth centuries face-to-face interactions between men of science and laypersons took place in coffeehouses, taverns, and at public demonstrations of scientific phenomena. The problematic nature of relations between the scientific community and the public goes back to the origins of systematic empirical science. The differentiation and specialization of science meant that scientific knowledge no longer enjoyed a matter-of-course place in the general culture since it soon changed the self-perceived role of science: a scientist became a distinct vocational path, separate from natural philosophy, literature, and religion.[11] The inevitable question arises: why was such demarcation of science from other disciplines

necessary? Although it is too extensive of a problem to be addressed within the confines of this section, it must be noted that science began to rely on the assumption that patterns in nature can be isolated so they can be studied. Repeatable patterns can only be established when the scientist is selective: this selection of a narrow area of study contributes to the institutional fragmentation of science. On the other hand, the focus on an isolated system produces an attitude of detachment and distance which characterizes the scientist's relationship with the object of study.[12]

As the overview below indicates, a number of German writers of fiction also engaged in scientific pursuits and were knowledgeable in, or at least familiar with, contemporary scientific ideas. Such ideas, however, do not remain static when they travel into different contexts, as both literature and science transform each other. The engagement with science, or the parallel interests of scientists and imaginative authors, was not the Modernism's invention; as I hope to show in what follows, the duality of science and literature—the problem of the "two cultures"—is a fairly recent concern.

Goethe

Goethe was not the only eighteenth-century intellectual to engage with problems such as evolution--an eighteenth-century form having to do with the mutability and development of the species--the interrelatedness of life forms, and man's ability to build science on an objective observation of nature. What distinguishes him from his contemporaries is his ability to bring aesthetic considerations to bear on his observations: as an artist he knew that language, be it the language of poetry or that of science, is unable to repeat the fullness of human experience; but images created by poetic language can approach that fullness much better than purely scientific, abstract concepts. He

insisted that all modes of human activity are interrelated and that the individual, in all his or her activities, should respond with the whole personality, the entire repertoire of faculties. The paradox of his views is that they constantly vacillated between enthusiasm and skepticism about science and were marked by a profound distrust of reductive systems, mathematical formulas, and a rationalist attempt to reduce everything to quantitative terms. Goethe's scientific views changed and evolved, and underwent their own metamorphosis, and these subtle changes are carefully documented in his writings and correspondence.

His scholarly activities unfolded at the time when the specialization of disciplines had not yet emerged in its modern form, and it was not uncommon for scientists, or natural philosophers, to engage simultaneously in such diverse areas as medicine, biology, geology, optics, and chemistry. Indeed, many of these fields overlapped and were dominated by the same set of underlying ideas: for instance, the unity and continuity of all being, the gradual nature of all change, the belief in the vital force, and the idea of an archetypical phenomena—a proto-animal, or a proto-plant, which serves as a model to all other types. One had to be a profound and versatile thinker to be able to grasp all the subtleties of these diverse fields, but one did not need to spend most of his or her life on one or two narrowly defined problems in order to reach cutting-edge research in a particular area. Below is the summary of those Goethe's views which offer close parallels to the problems characteristic for the period of my investigation.

Perhaps among the most fundamental beliefs underlying Goethe's scientific activities is that in the unity of natural phenomena, including man. Nature is characterized by a universal integration, purposefulness, continuity, and harmony; the

whole universe is a dynamic, organic and divine whole, of which man is an essential part.[13] These views stand in sharp contrast to Modernism's discontinuities and an assumed disjointedness of experience.

By contrast, Darwin's nature "red in tooth and claw," at least according to Tennyson, has no place for harmony, having instead become a battleground for survival. Nature is not a harmonious home for all its creatures, but is blind and brutal. What was once a model for harmonious co-existence, has now become a place of waste and destruction necessary for new species to evolve. Moreover, with the development of materialism and Darwinism together, the ground is suddenly pulled from man's traditional understanding of his origins and position in the universe itself.

Following the popular doctrine of the continuity of nature, or the imperceptible degrees of difference separating natural forms, Goethe conducted research which led to his finding of an intermaxillary bone in man, which led him to suspect that there could be no abrupt anatomical distinction between man and animals.[14] Man's anatomy and physiology were considered continuous with other creatures who stood lower on the great ladder of being. Not only was man an essential and organic part of the natural world, according to Goethe's beliefs, but in fact every living creature, every plant, and every mineral, had their defined place in the world: an unbroken and harmonious hierarchy formed the great chain of being. The chapters of this dissertation will outline how these beliefs were dismantled by scientific theories and discoveries in the late nineteenth and in the early twentieth centuries. For example, the idea of a divinely designed and created world lost inherent significance and value, having left the tradition of natural theology a thing of the past. Darwinian science denied a purpose in the universe because evolution

was a result of natural selection from accidental variations, rather than of a divine creation.

Just at the time when Goethe's views on the relationship between theory and experiment were developed, the empirical tradition in science, with its reliance on the inductive method of reasoning and observational evidence, began to emerge. Important to note is that Goethe's views changed in the course of his studies, from a clearly Baconian framework to an open criticism of Bacon.[15] Goethe eventually becomes convinced that there are numerous obstacles which nature places in the way of impartial observation, and notes that man tends to see everything in relation to himself. It is impossible to have a scientific experiment, he acknowledges, without some sort of a priori hypothesis or theory, which had existed prior to the act of induction. In Farbenlehre he states that "So kann man sagen, daß wir schon bei jedem aufmerksamen Blick in die Welt theoretisieren" (qtd. in Nisbet 34).[v] In this sense, Goethe's ideas parallel those twentieth century's views that assert the impossibility of collecting data, conducting scientific experiments, and exploring unknown fields without some prior idea or theory, or without subjective motivations and intuitive leaps.

For Goethe, the relationship between his scientific and literary activities was unproblematic: the modern need to choose between these two fields did not yet emerge. To him, the mind itself and various ways of knowing the world, are indivisible and stand in a harmonious relationship with the rest of the world; according to this view, the mind utilizes all its faculties in every activity. Human knowledge is an indivisible whole, and to impose any artificial fragmentation upon it would mean to abandon the principles of the natural world itself.

[v] So one can say that with each close look at the world we already theorize.

The German Romantics

The Romantics were, in many, if not all, ways, the followers of Goethe, one of the similarities being their attitude towards the rationalist tradition. While for rationalists the machine analogy adequately described the workings of the universe as in Descartes' idea of a universe functioning like a clock, in which everything is governed by predictable and knowable mechanical laws, for Goethe and the Romantics, the metaphor of the organism, with each part being a representative of the whole, was the only appropriate model. According to the Romantic worldview, the rationalist tendency to study nature by isolating linear causal sequences overlooked the multidimensionality of nature, in which every element was in a reciprocal relationship with everything else. In the Romantic thought, the mechanistic model was replaced by the vitalistic. In this sense, it is possible to assert that the Romantics attempted to emancipate knowledge from the necessity to pursue purely practical goals by denying the need to subdue nature to man's purposes and by refusing to look for predictable rules to explain the behavior of all natural phenomena. They brought art into closer contact with science, which strove to gain knowledge free of immediate utilitarian needs; both Hardenberg and Schlegel, for example, believed that scientists and poets speak a single language, and that art must become science and vice versa (Gode-von-Aesch 27-30).

The Romantics considered an adequate literary form for such aspirations the novel ("Roman ist ein romantisches Buch," Schlegel Fragment 116), which must strive to become an organic work that repeats the whole in all of its parts. Each element of the novel is dependent upon the others: they form an ever-repeated modulation of the same theme. Another typically romantic literary form was the Fragment, a discrete unit that

was conceived as relating to an infinite whole. It resembled the Romantics' perception of the natural world, in which each part evokes the totality of the universe and in which the unforeseeable associations reflect the diversity and interconnectedness of life forms.

Although the idea that man is the measure of all things in nature remained central to that period, Romantic thought can be said to be biocentrically oriented (in contrast to anthropocentricism). The problem of man's integration with other animals was widely discussed, and it was a Romantic endeavor to achieve precisely this type of integration and to break man's isolation in the world. It was believed that harmony between man and animals could be achieved by conquering the hostility of nature's other creatures and opening paths of communication with them. The attempt to achieve integration of man and animals was brought about not only by the revealed anatomical analogy of man and animals but also by the newly aroused interest in the greater than anyone had previously thought creatures inhabiting the planet, a result of new and major scientific expeditions (Gode-von-Aesch 56 and 140).

For the Romantics, the tendency to overcome the purely quantificational and mathematically exact sciences, based on observable evidence, meant the rehabilitation of the ancient mysteries of nature--an endeavor to discover its immaterial, metaphysical qualities in order to grasp the higher truth. One way to discover this other side of nature was, paradoxically, through self-knowledge. World-cognition is identified with self-cognition, and it is only in self-knowledge that true knowledge of the world can be achieved ("Wo gehen wir den hin?--Immer nach Hause"[vi]). It was frequently believed that God's essence lay in everything created and that the essence of every created thing

[vi] Where are we going then?—Always back home. (Novalis, Heinrich von Ofterdingen, [Stuttgart: Reclam, 1987] 164).

must lie in everything else: it is therefore through the knowledge of the individual soul that universal truth is to be achieved. Among many Romantics, the widespread belief that the way to get hold of the "higher nature" of things lay through parapsychic experiences was common, and it inspired a broad interest in dreams and somnambulism. States of mind beyond those of normal mental alertness and awareness might allow one to gain access into the entirety of existence, or so it was thought, and the insights thus gained were possible only through the abandonment of individual consciousness. In fact many representatives of the romantic period, Novalis among them, regarded the unconscious as superior to the mind's conscious states. Hoffmeister points out that G.H. Schubert's works, among them Ansichten von der Nachtseite der Naturwissenschaft [Examinations of the Night Side of Natural Science] (1808) and Die Symbolik des Traumes [The Symbolism of Dreams] (1814), together with a romantic tendency to decipher the hidden meaning of dreams, influenced Freud's development of psychoanalysis (185-86). Like much of romantic thought, psychoanalysis interprets the "hieroglyphic" meaning of dreams, looking for hidden connections between the ego and the unconscious life of the soul. An often employed Romantic symbol, standing for the harmony between the universe and individual soul, was darkness or night itself. Along these lines, dreams were believed to represent the resolution of all contemporary antagonisms, which man must seek out once again. Similarly, psychoanalytic thought was typically directed backward, into the past, toward individual childhood or the "childhood" of humanity itself.

Related to the problem of consciousness was a romantic preoccupation with the assumed "gap" between mind and matter, or life and matter in general, and how it might be bridged. Since it was believed that the continuity of all organic forms was ensured by

the existence of the universal vital fluid, then there had to be some substance or phenomena linking living organisms to inorganic nature. Animal electricity and animal magnetism were believed to constitute evidence of the parallel between organic and "dead" matter (Kuzniar 432). However, not all proponents of Romanticism subscribed to the same set of beliefs regarding the natural world. The most widely accepted doctrine of the Great Chain of Being, with its strictly assigned place for every creature, did not hold much attraction for a writer like Novalis. Instead of order, continuity, and strictly delineated boundaries between various forms, he imagines the interchangeability of rocks, plants, animals, and man (Kuzniar 430-33). Novalis, subscribing to the belief that vital fluid was the basis of all life forms, conceived of nature as elastic and limitless, where the accidental resemblances between disparate aspects were possible. This type of metamorphosis contradicts empirical reality and follows the freedom of association that governs dreams and fairy tales. Transformations of one form into another are based in the Romantic perception that each part of nature evokes its wholeness. The metamorphosis in Novalis' writings occurs not on the basis of equality between species but because, in a self-denying move, man ceases to see the animals in his own terms and begins to regard them as uniquely distinct creatures.

The world imagined by many Romantics was, in other words, a place full of singular transformations, diversity, and contradiction, in contrast to a rationalist tradition, that conceived of reality as predictable and fixed and following the rules of mechanistic science. Romanticism attempted to grasp the "other" side of nature and human existence, that which had seemingly been neglected.

The Naturalists

In contrast to the Romantic endeavor, literary naturalism attempted to realign literature with contemporary scientific methods. The proponents of this quasi-movement believed that literature might treat the world that it describes as no different from materialistic science, or in terms of physical and social causes—those of inheritance and milieu. For instance, Wilhelm Bölsche, a disciple of the French naturalist Emil Zola, strove to link poetry and science, and argued in his Die naturwissenschaftlichen Grundlagen der Poesie [The Natural-Scientific Foundations of Poetry] (1892) that mythology is for ancient poetry what Darwinian theory should become for literature—a source of inspiration, a model, and a method. In an attempt to find a new foundation for poetry, Bölsche asserts in his book that "Die Basis unseres gesamten modernen Denkens bilden die Naturwissenschaften,"[vii] and that poets should not ignore this tendency of contemporary life: "Wir müssen uns dem Naturforscher nähern, müssen unseren Ideen auf Grund seiner Resultate durchsehen und das Veraltete ausmerzen" (qtd. in Soegel 38-39).[viii] Further on, he makes the following comparison of the poet with an experimental scientist:

> Jede poetische Schöpfung, die sich bemüht, die Linien des Natürlichen und Möglichen nicht zu überschreiten und die Dinge logisch sich zu entwickeln lassen, ist vom Standpunkte der Wissenschaft betrachtet nichts mehr and nichts minder als ein einfaches, in der Phantasie durchgeführtes

[vii] the foundation of our entire modern thought is laid by natural sciences.
[viii] We must be like natural scientists, we must look at our ideas based on their results and eliminate the outdated.

> Experiment, das Wort Experiment im buchstäblichen, wissenschaftlichen Sinne genommen. (qtd. in Soegel 39)[ix]

Such a „recipe“ for writing poetry, as well as Bölsche's interpretations of Goethe and Haeckel, were extremely influential at the time; imaginative literature was to follow the same standards of logic, objectivity, and compliance with the natural law, as contemporary science.

Among other influences, Èmil Zola's essay "Le Roman expèrimental"(1880) inspired naturalist writers to become objective experimenters and to apply the meticulous methods of empirical science to literature. The author of a literary work should, according to this view, represent a "slice of life" seen through a temperament. Thus, man had ceased to be the crown of all creation, or the highest link in the Chain of Being, and had become an object of scientific scrutiny, just like other natural phenomena, as evident from the passage above. Man's life is subject to natural and moral laws--rather than to his free will--and, in fact, all action was regarded by the naturalists as explicable by the instincts, sexual impulses, heredity and the environment.

Among scientific theories crucial to the development of literary naturalism were certain types of positivism, Darwinism, and Marxism. Positivism denied any metaphysical or supernatural relationships, stating that phenomena, which cannot be observed and measured, are unscientific. This type of thinking diminished the role of free will and ethics in human life, and rendered man powerless to scientific determinism--the tendency which was reflected in literary works of the period. The tragic hero of a classical drama, for instance, gave way to the naturalist portrayal of men "in general,"

[ix] Each poetic creation, which strives not to cross the lines of the natural and possible and which allows things to develop logically, is, if considered from the standpoint of science, nothing more nor less than a simple experiment conducted in fantasy, the word 'experiment' being taken in its literal, scientific sense.

and since men are weak-- their lives being governed by instincts, heredity, and social milieu--characters in a work of a naturalist author do not evolve in the course of a play. Scenes from the life of human beings are shown not in tragic acts of a classical drama, but as being shapelessly fluid, as if cut off by the fall of the curtain (the slice of life technique).[16] Darwin's theory of evolution was not only widely known in the German speaking world, but it was further popularized by the teachings of Ernst Haeckel. Darwinism served as a proof that man's further evolution, like his past, was an unavoidable natural process. Naturalism, with its faith in science, recognized that everything—from man's actions to physical phenomena—is guided by natural law. The experimental novel, like the naturalist drama, substitutes the study of an abstract and metaphysical man by the study of a natural man.

There was yet another important influence, which came from biological sciences and proved crucial for the way naturalism depicted man. Claude Bernard's conception of a living organism, which was based on mechanistic physics, helped to shape Zola's concept of the experimental novel, which in turn affected German naturalism. Bernard was committed to the doctrine of causal determinism, and believed that experimental medicine and physiology should obey deterministic laws, akin to those of physics. The trouble with this view was, unfortunately, that it discounted the role of differences between various species, as well as between various stages of development of an individual organism. All species, according to Bernard, obey the same laws, and the differences between the species are quantitative, not qualitative. Quite different for Darwin, species--though they descended from a common ancestor--are qualitatively different because evolution is a branching process: from one common ancestor various

species and classes emerge in adaptation to local conditions. Naturalist writers considered that they continued the work of an experimental physiologist, like Bernard, analyzing living beings, as well as inanimate bodies and social phenomena, as if they obeyed the same deterministic laws of causality.

In addition to the influences described above, naturalism absorbed the Marxist doctrine that men were victims of their environment and that their situation was predetermined by their social standing, their access to wealth, as well as by their education. The history of society was understood as the history of the class struggle. Indeed, such understanding of man's situation allowed naturalists to include the working class (der vierte Stand) in their works, which until then had remained virtually unrepresented in literature. The concept of "the working class," to be sure, had not existed prior to Marxism. With the disappearance of a literary hero, whose actions were predetermined by his tragic fate and guilt, the new "heroes" of naturalist fiction were workers, prostitutes, and all those deprived of the privileges and conditions of a prosperous existence. Life was depicted unadorned, often in all its ugliness, poverty, and degradation.

In contrast to the Romantics who seemed convinced that art should become more like science, and science should become more like art, the Naturalists believed that literature must become most like science and abandon its quest to remain pure art altogether. Art, as defined by many previous generations of artists, contained too much indeterminacy for Naturalists. Imaginative works of literature ought better to be replaced by works of observation and experiment, based on causal deterministic laws.

The Generation of 1905

Ever since Galileo and Newton, the model for good science, with few exceptions, had been mechanistic physics.[17] Concepts of a clockwork universe and organism-as-machine allowed for discoveries of numerous natural laws in practically every branch of science: from astronomy and physics to medicine and biology. Certain scientific discoveries and theories however, which emerged in the late nineteenth and in the early twentieth centuries and which are mentioned in the beginning of this chapter, began to change this situation in science. These changes came from several different directions. Beginning with Darwin's discovery that species are qualitatively different from each other and have no analogues in the nonliving world of physics and chemistry, the model of mechanics began to be challenged as unsuitable for biology. Likewise, researches in the fields of psychology and neurology rebelled against the artificial machine-models of the brain as a purely mechanical apparatus functioning according to fixed laws of association and reflex. The emphasis has shifted to such previously neglected issues as motivation, the dynamics of emotion, instinctual life, and creativity; these developments were reflected in the emergence of psychoanalysis as a science (Harrington 235-53). Moreover, the physical science itself underwent radical changes. From the spontaneous and largely unanticipated disclosure of entirely new domains in physics at the end of the nineteenth and in the beginning of the twentieth centuries, it became evident that the picture of nature drawn by classical physics was not complete, or, at least, not suitable for the description of every physical process. For instance, Boltzmann offers his interpretation of entropy in 1877, X-rays were discovered in 1895, natural radioactivity in 1896, electron in 1897, and relativity in 1905. The problem was that these physical

discoveries did not quite fit into any of the known theoretical niches (such as mechanics, thermodynamics, and the electromagnetic theory). The classical model of nature in which observable objects moved about according to definite laws of force was challenged by the fact that almost none of the new discoveries had been foreseeable or predicted on the basis of the established theoretical principles. The emphasis in theoretical physics, as well as in other sciences, was shifted to the potentially positive incentives of imaginative, intuitive, and interrogative assumptions that might possibly generate experimentally feasible and theoretically fertile consequences in science (Hiebert 216-34). Practically all of the new theoretical and experimental findings contested, in one way or another, the positivist view of nature, scientific determinism, and the idea of progress understood as a steady movement toward a particular goal. In contrast to some positivist views, nature—physical, human, or biological—could no longer be analyzed without analyzing the means that we use to become aware of it, that is the type of experiment, the epistemological framework, the tools and equipment used in observations, the physiological limitations of the human vision, as well as the human mind itself. Description of nature became replaced by a view of a constant interaction between the observer and the observed, which was contested by some and accepted by others, creating a constant tension underlying modernism in science, as well as in literature.

As a consequence, the emergence of new ideas, methods, and disciplines, as well as of new artistic sensibilities in the late nineteenth and in the early twentieth centuries is frequently associated in criticism with the notion of modernism. However, “modernism” proves too broad a definition for the purposes of this dissertation since modernism implies a multidimensional and international phenomenon: it is usually regarded to

include social, political, and technological advances which are not the subject of this study. Along these lines, Everdell characterizes the historical era that encompasses modernism and notes that "there is a good reason to wonder if [generalized] 'modernity' means anything at all beyond a change in the pace of change" (9). Literary modernism is represented by a variety of movements not connected to each other. Therefore, instead of discussing German literary modernism, this study will focus more specifically on a group of writers who belonged to the "generation of 1905" (Luft 13-18). In fact, the year 1905 is marked by a number of significant events in political, cultural, and scientific spheres, which allows designating it as a starting point of a new era. It was in fact the year of the First Moroccan Crisis and the attempted Russian revolution. Einstein wrote his paper on special relativity where he explained the mass-energy equation making 1905 a decisive year for the development of modern physics. In California, Mount Wilson observatory with the world's biggest telescope was completed. It was also a year of several significant events in artistic and literary circles: W. Dilthey published his four essays Das Erlebnis und die Dichtung. A group of expressionist artists founded the community Die Brücke. H.G. Wells wrote A Modern Utopia offering an optimistic view of technology-dependent society. Rilke achieved fame with Das Stundenbuch. Richard Strauss' shocking opera Salome was presented.

All authors of fiction central to this dissertation—Kafka, Rilke, Musil, and Mann—were born between 1875 and 1883, which makes them between 22 and 30 by 1905. This means that their creative maturity began to emerge in the decade before the First World War, and that they shared a more or less common cultural climate and

historical experience. Describing the generation of 1905 as the one roughly falling between the impressionists and the expressionists, Luft observes:

> Setting out from the uncertainty of knowledge and the inadequacy of every form of dogmatism, the thinkers of this generation were conscious of fragility and brevity of human civilization. […] Confronted with decline of the old historical cosmologies of progress, they sought to reawaken the positive value of the unconscious, sexuality, and dream-life. (17)

Luft's description, or, better, his account of shared sympathies, is important here since it recognizes the difference between the experience of the generation of 1905 and the previous generation of intellectuals, shaped by a traditional liberal culture. For those born after 1870, there came about a new historical experience of living in a mass, industrial, urban, and more cosmopolitan society, one no longer united by religion and ethical values, but to a large extent shaped by modern science and technology. Another reason that the generation of 1905 deserves a special attention is that the new writers frequently carried their explorations beyond their fin-de-siècle sensibilities. "They sought to reawaken the positive value" not only of humanity's unconsciousness, sexuality, and dream-life but also of those scientific developments which fin-de-siècle authors often dismissed as threatening to culture and to the artistic enterprise itself. It is at this point that science and epistemology begin to be inscribed and reflected in literary texts.

On Science and Literature

Within the field of German literary criticism, one finds a great many studies that explore how certain authors treat scientific themes; among these authors are at least Goethe, Novalis, Brecht, Benn, Dürrenmatt, and Frisch.[18] This means that such explorations are for the most part limited to authors and texts dealing with science directly: the author has engaged in scientific activities himself; or a scientist figures as the protagonist of a literary work; or scientific terms and views are cited in the text (as is the case with Gottfried Benn). The authors central to this dissertation are, on the other hand, frequently left out of the discussion of literature and science, and the critical discussions tend to focus on the philosophical, allegorical, historical, or psychological aspects of Kafka, Rilke, Mann, and Musil.

It is no surprise because among philosophers and literary critics who discuss the relationship between science and literature, a view has often prevailed that the two have little in common and that their few genuine connections are either indirect and metaphorical, or unidirectional, with literature passively reflecting what science actively discovers. Addressing this problem of the "two cultures" in his book Technik und Wissenschaft als Ideologie (1968), Jürgen Habermas maintains that:

> Die Erkenntnisse der Atomphysik bleiben, für sich genommen, ohne Folgen für die Interpretation unserer Lebenswelt—insofern ist die Kluft zwischen jenen beiden Kulturen unvermeidlich. Erst wenn wir mit Hilfe der physikalischen Theorien Kernspaltungen durchführen, erst wenn die Informationen für die Entfaltung produktiver oder destruktiver Kräfte verwertet werden, können ihre umwälzenden *praktischen Folgen* in das

> literarische Bewußtsein der Lebenswelt eindringen—Gedichte entstehen im Anblick von Hiroschima und nicht durch die Verarbeitung von Hypothesen über die Umwandlung von Masse in Energie.[i]

In a subsequent yet similar critical vein (1997), Michael Titzmann writes about changing scientific views of the late nineteenth and the early twentieth centuries and asserts that they can have no common ground with artistic pursuits:

> Zwischen dieser neuen Naturwissenschaft, insbesondere der Physik seit ihrem Paradigmawechsel, und der Literatur (wie allen anderen Künsten) kann es keine objektadäquaten direkten Relationen mehr geben. [...] Die neue Physik konstruiert eine seltsame Welt, deren Größen nicht wahrnehmbar, nicht vorstellbar, nicht sprachlich artikulierbar sind: Jeder Versuch der Rede oder der Darstellung von Physik in Literatur wird somit entweder unverständlich, insofern er sich der theoretischen Terme dieses Diskurses (und im Ernstfalle der Mathematik) bedienen müßte, oder, soll er verstehbar sein, notwendig uneigentlich-metaphorisch (wobei inkompetente Bezugnahmen deshalb nicht weniger erforschengswert sind). [ii]

---

[i] The discoveries of nuclear physics remain, as such, without consequences for the interpretation of our everyday world: in that sense the gap between those two cultures is unavoidable. Only when the nuclear fission is conducted with the help of physical theories, only when the information for the development of productive or destructive forces is put to use, can their revolutionary practical consequences penetrate into the literary consciousness of everyday world. Poems are created in the wake of Hiroshima and not through reflection of the hypotheses about the transformation of mass into energy. (Jürgen Habermas, Technik und Wissenschaft als 'Ideologie,' Frankfurt am Main: Suhrkamp, 1968) 107.

[ii] There can be no more objective direct relationship between this new natural science--especially physics since the change of its paradigm—and literature (as well as other arts). […] The new physics pictures a strange world, the vastness of which is unperceivable, unimaginable, and not expressible by means of language. Each attempt to talk about or to depict physics in literature is either unintelligible because one must first grasp the terms of this discourse (at least of mathematics), or, in case it is intelligible, it actually ought to remain always metaphorical (in that case, the inadequate references do not lose any of their value

Both passages, divided by roughly thirty years, demonstrate that, with few exceptions, the persistent trend in German literary and cultural studies is to regard literature and science as having few points of contact. Indeed, such influence as may exist is described as unidirectional: it is science that influences literature, which is understood as passively assimilating its ideas. Only for the most part in the more recent scholarly books, dissertations and articles can one see a change in this trend, as well as in an emerging interest in literary periods and genres which either have not been traditionally included in scholarly research, or have not been associated with a scientific outlook. [19] Peter Smith, for instance, notes that the new goal of literary research is "to look for common ground between the discourses: to locate a discursive space in which literature and science can be considered equally without denying the unique contributions each has to make to human understanding."[20] He shows that

> …since the 1960s the study of the history and philosophy of science has undergone major changes. To write about literature and science today is to compare two interrelated and metaphorical discourses, each rooted in a shared culture. To privilege one is to credit it with access to some ultimate truth, a position which […] is philosophically questionable. (23)

Among the critics of English and American fiction, the origins of the modern debate about the relationship between science and literature can be traced to 1959 when C.P. Snow set the responsibility for the gulf between the sciences and literature squarely on the shoulders of humanists. Frank R. Leaves countered this accusation by saying that

---

for research). (Michael Titzmann, „Revolutionärer Wandel in Literatur und Wissenschaften," Die Literatur und die Wissenschaften, 1770-1930, eds. Karl Richter, Jörg Schönert, Michael Titzmann (Stuttgart: M&P, 1997) 303.

Snow had set out to compare methods essentially not comparable: that an ignorance of the Second Law of Thermodynamics is irrelevant to an ignorance of the works of Shakespeare, referring to Snow's notorious example of a question he posed to literary scholars at a Cambridge cocktail party.[21] An attempt similar to that of Leaves' to give legitimacy to both domains without bringing them into close contact was made by Aldous Huxley who insisted that science deals with the more public of human experiences, while literature deals with more private spheres. Science and literature, he asserted, have a common meeting place only insofar as science comes into contact with man and human society. A fundamental difference exists and there is no need to deny it or eliminate it: a scientist uses an unambiguous jargon from which all human emotion and subjectivity are removed; the artist, on the other hand, uses a subjective, emotional language as a tool to relate to his audience.[22] A great deal of criticism from the decades following the publication of Snow's book tends to argue the supremacy either of literature or of science, systematically outlining the reasons that one or the other should be considered more important, useful, meaningful, and primary. This line of criticism may now be exhausted and is giving way to a more balanced view of an interchange of ideas or simultaneity of complementary scientific discoveries and artistic visions. It is now more often questioned whether scientific writing, or science, does indeed occupy a niche exempt from language and cultural determinations. This view will be one of the lenses through which I will consider the authors included in this study, the role of technology remaining outside of its scope.

The critical works which have proven useful to this study are discussed below. My concerns about literature and science as being influenced by the same zeitgeist are in

part addressed in the two anthologies: Literature and Science: Theory and Practice and Beyond the Two Cultures: Essays on Science, Technology and Literature (1990). They are relevant to the questions to be explored because they map out methods pertinent to the study of connections of literature and science: close textual analyses of scientific and literary works, describing the social and historical context within which these texts were read, and analyzing the basic epistemological assumptions involved in the study of literature and the history of science. These are the methods on which this study relies.

Christine Ferguson's article "Decadence as Scientific Fulfillment" (2002) argues that modernist art should not be viewed as merely resisting scientific discussions of the time but rather as also attempting to embrace new ways of defining knowledge. Her thesis that art and science both represent the desire for freedom from usefulness, from utilitarian goals as defined by immediate practical needs of a given community, is directly applicable to a line of argument developed by Musil in many of his essays, and which will be taken up in the chapter devoted to Musil and Mach.

George Levine's Darwin and the Novelists: Patterns of Science in Victorian Fiction (1988) is pertinent to any discussion of a two-fold relationship between science and literature and helps to define the concept of observation. Levine writes that "how the culture tells its stories, that is imagines its life, subtly informs the way science asks questions, arrives at the theories that reshape the culture that forms them" (Levine 4). What the critic means by this statement is that the scientist's—he focuses on Darwin—background, his previous reading experiences, including the reading of fictional works, as well as the social and historical context of his writing, play a crucial role in formulating of his theories. One example of how dominant cultural views informed a scientific theory

is the idea, prevalent in the nineteenth century, of subtle, gradual transformations: evolution according to Darwin is a long process taking place gradually, through small, imperceptible changes, over vast stretches of time. The view that nature does not "like" leaps was replaced by a modern idea of abrupt changes, which was expounded in the sphere of evolutionary thought by Stephen Jay Gould, among others.[23] In addition to showing that the connection between science and art is by no means unidirectional, spreading from scientific texts into literary, Levine also analyzes how the position of a scientific observer may be comparable to that of a Victorian writer.

Along these lines, William Everdell's The First Moderns: Profiles in the Origins of Twentieth-Century Thought (1997) defines modernism in art and science as a major break from the nineteenth century outlooks that emphasized progress, continuity, wholeness, and comprehensibility of the world. This break with the past is explained by the emergence of Modernism's single most influential idea, that of "ontological discontinuity" (Everdell 347). This notion of discontinuity is modernism's trajectory, a vision of a world as consisting of irreducible, separable parts with nothing in between, as in Seurat's dots, Planck's quanta, or De Vries' genes.

Another area of criticism pertinent to the study to follow includes works discussing the social and cultural climate of the German-speaking countries at the end of the nineteenth and the beginning of the twentieth centuries. Le Rider's Modernity and the Crisis of Identity: Culture and Society in Fin-de-Siècle Vienna (1993), for example, views the experience of Viennese Modernity in terms of destabilized male subjectivity. Social and political changes—redistribution of male and female cultural roles, emancipation of women and the Jews—led to the crisis of the individual experienced as

isolation and instability of the self. The main argument, which Le Rider's study owes in part to psychoanalysis, is that creative writers reacted against this destabilizing experience by attempting to rebuild the identity through "radicalized individualism" of three types: utopian mysticism, genius and narcissism (Le Rider 1). In a similar vein, Carl Schorske's seminal Fin-de-Siécle Vienna: Politics and Culture (1981) interprets Austrian modernity at the end of the nineteenth century as a failed attempt of the middle-class intellectuals to achieve political power and gain more social status, eventually forcing them to retreat into the realm of the psyche and embark on a narcissistic search for a new self.

It is possible to argue however that preoccupation with psychology might not always signify a retreat from the political or social scene, or a compensation for the loss of a stable identity. The interest in psychology was characteristic for the period when the nineteenth century belief that the mind investigating nature is independent of that nature was beginning to be dismantled. Modernist was the very assumption that reality cannot be explored without analyzing the means we use to become aware of it, and this, among other things, motivated the interest in the human mind and the way it works.

Criticism dealing specifically with science in the works of Kafka, Rilke, Musil, and Mann is sparse and, with few exceptions, limited to chapters in anthologies or journal articles. In "Rage for Verification: Kafka and Einstein" (1976), Franz Kuna looks at examples of analogous thinking in Kafka and Einstein, which he sees in their definition of simultaneity. By contrast, Margot Norris's fuller work Beasts of Modern Imagination: Darwin, Nietzche, Kafka, Ernst, and Lawrence (1985), devoted to the critique of the anthropocentrism in modern thought and art, illuminates the ontological relationship of

the animal to culture—as a creature standing apart from what rationalism, idealism, and asceticism consider "purely" human. This study is useful in placing Kafka's work within the context of the critical tradition of Darwin, Nietzsche, and Freud--thinkers who devalue reason and emphasize historical and physiological necessity in development of civilization, rather than rationality. This view, which "devalues" reason, was first expressed in Darwin's ideas describing morality as a development of social instincts, reason itself as the refinement of instinct, and language as an improvement of animal communication systems. All these ideas indicated that what had previously been considered as the highest achievement of human reason—morality, religion, art, language—indeed belongs to the sphere of Nature. This cleared way for Freud's exploration of the modes of intelligence disengaged from reason—dreams, and to Nietzsche's pronouncement that evolution signifies not progress but decadence. These developments are relevant to Kafka's story because the ape-protagonist is ironically portrayed as having achieved the "summit" of evolutionary development.

Judith Ryan's Rilke, Modernism and Poetic Tradition (1999) identifies the numerous sources of The Notebooks of Malte Laurid's Brigge and asserts that the achievement of the novel lies in the relations it reveals between psychology, creativity, and literary and historical traditions. David Kleinbard's The Beginning of Terror: A Psychological Study of Rainer Maria Rilke's Life and Work (1993) focuses more narrowly on psychoanalytic themes in Rilke's works. As a psychological biography, it involves the interpretation and juxtaposition of parallel elements in Rilke's life and work. Andreas Huyssen, in "Paris/Childhood: The Fragmented Body in Rilke's Notebooks of Malte Laurids Brigge" (1989), establishes a connection between Freud's essay "The

Uncanny" and certain thematic features of Rilke's novel, such as his representing the otherworldly experiences as part of everyday life. Paul Oppenheimer's essay on "Rilke, Einstein, Freud and the Orpheus Mystery" (2000) examines the role of the self-conscious observer in Rilke's poem "Orpheus. Euridike. Hermes" and compares it with the participatory observer in science.

Anthony Heilbut's Thomas Mann: Eros and Literature (1996) mentions the writer's engagement with Einstein's theories as being evident not only in Mann's fiction but also in his journals and essays. Rudi Prusok's article "Science in Mann's Zauberberg: The Concept of Space" (1973) illustrates to what extent science invades the everyday reality of modern man to redefine the spacio-temporal limits between myth and reality, life and death, sickness and health, time and timelessness. Prusok draws a connection between certain aspects of the novel and concepts taking their points of origin in physics, medicine, biology, and psychoanalysis. Carsten Könneker's "Raum der Zeitlosigkeit: Thomas Manns Zauberberg und die Relativitätstheorie" ("The Space of Timelessness: Thomas Mann's Magic Mountain and the Relativity Theory") (2001) situates the novel in the context of scientific discussions and the popular fiction of the period.

David Luft's Robert Musil and the Crisis of European Culture: 1880-1942 (1980) looks at the culture-wide crisis following on his premise that Musil himself was this culture's representative man. Luft explores Musil's attempts to close the gap between art and modern science. Ulrich Karthaus' "Der Mann ohne Eigenschaften und Hans Castorp" ("The Man without Qualities and Hans Castorp") (2001) compares Mann's character Hans Castorp to Musil's Ulrich and asserts that the two protagonists share the

inquisitiveness characteristic of a scientist. He sees an earlier prototype of this intense desire to discover the true nature of reality in Goethe's Faust.

Thomas Sebastian's The Intersection of Science and Literature in Musil's *The Man Without Qualities* (2005) is a more recent, book-length study devoted to the exploration of scientific ideas in Musil's novel; it covers areas of Gestalt psychology, Mach's epistemology, and it relates the ideas underlying the novel to the "epistemic shifts" that occurred in science in the beginning of the twentieth century (7).

This scholarship had helped my attempts to discuss how the changed definition of observation was reflected in scientific and literary texts under investigation.

Chapter Two

Scientific Objectivity in Kafka's "A Report to an Academy" and in Darwin's Works

> I am only imparting knowledge, I am only making a report.
> *Report to an Academy*, Kafka [1]

> Many kinds of monkeys have a strong taste for tea, coffee and spiritual liquors: they will also, as I have myself seen, smoke tobacco with pleasure. *The Descent of Man*, Charles Darwin [2]

This chapter examines Kafka's short story "Ein Bericht für eine Akademie" [A Report to an Academy] (1919) in connection with the Darwinian treatment of the relationship between the scientist, or the observer and the specimen, or the object of observation. Kafka uses a literary form--the short story--to explore the principles of biological evolution, and in doing so raises commonsensical questions while inquiring into basic assumptions about the distinctions between human beings and animals. The present reading of Kafka's story tries to avoid various traditional allegorical or metaphorical interpretations popular in critical literature dedicated to Kafka's work, focusing instead on the scientific context within which his stories were written. All too often interpretations of Kafka's animal narratives seem reduced to reading them as a-historical, metaphorical depictions of mankind, as mirrors of the human condition, as autobiographical accounts of existential angst, or as representations of Jewish otherness.[3] The hermetic nature of Kafka's work, which frequently resists a reader's straightforward interpretation, possibly provokes this response. It may be all the more important, then, to address another dimension of Kafka's writings which emerges if one takes into consideration several manifestations of the evolutionary thought of the period, popular

scientific discussions of animal intelligence and animal psychology, and the contemporary fascination with exotic species, zoological gardens, and animals trained to perform in circuses and variety shows. In addition, analyzing Kafka's story from this angle may allow us to view, and set his writings within, the pertinent literary context of the late nineteenth and the early twentieth centuries, which must include Kipling's The Jungle Book (1894-95) and Selma Lagerlöf's Wunderbare Reise des kleinen Nils Holgersson mit den Wildgänsen [A Wonderful Journey of Nils Holgersson with the Wild Geese] (1906-07). The latter are examples of didactic animal stories as an interpretation of human character via implied comparisons. The present study may thus fit into a new body of criticism which analyzes literary texts against the backdrop of the historical period in which science was becoming an increasingly more important aspect of the *Weltanschauung*.

Observation has previously been defined as a purposeful looking with insight as its goal, a record of which is later made, a type of observation that plays an important role in Darwin's works, as well as in Kafka's short story "Ein Bericht für eine Akademie." In Descent of Man (1871) Darwin extends the authority of scientific observation from natural phenomena and the natural world to include the world of human beings, from minerals and rocks, to domestic animals and wild animals, to human society; man thus becomes the object of observation, swapping the role of observer for that of observed. It had been one thing to assert, as Darwin does in his first major theoretical work, that "probably all the organic beings which have ever lived on this earth have descended from some one primordial form, into which life was first breathed,"[4] but quite another to state even that "there is no fundamental difference between man and the higher animals in

their mental faculties."[5] Evolution is universal, or as it is implied by the first of these pronouncements from The Origin, while the second, from The Descent of Man, proposes that human beings are neither necessarily the culmination of evolution, nor even a "summit" on the ladder of living beings, but are instead not fundamentally different from other animals and must therefore be placed in a "proper position in the zoological series" (Descent 1238).[6] In his last work, The Expression of the Emotion in Man and Animals, the author stresses the necessity of observing human beings, alongside other animals, and chooses various qualities to be observed from people that are to serve as "representative" proving his point. He observes his own expressions in a mirror, for instance, as well as analyzing (or relying on the observations of others) the expressions of infants, the insane, the so-called "primitive" peoples, the various races of mankind, and works of art, in an attempt to provide a diverse foundation for establishing which expressions are common to all.

One finds a similar gesture in Kafka's story, in which the ape-protagonist observes human behavior and is able to survive among men solely by means of his powers of observation and imitation. Rotpeter observes his own transformation into a human-type being, as well as a wide range of human behavior, an account of which he includes in his report: he describes the sailors who have captured him, the acrobats in a variety show, a journalist, and his teachers who have helped to educate him. It is from his observations that Rotpeter is able to draw certain insights (such as behavioral standards of people he encounters), that help him to evolve: observation and insight become a key to his changes.

In her essay actually dedicated to Kafka, Judith Ryan underlines the apparent fact that multiple strands of personal and world history seem to have "broke[n] through" into Kafka's narratives (German Literature, 695). Analyzing "Das Urteil" [The Judgment], she emphasizes that the story should not be understood as being "about" certain events in Kafka's life, his feelings, or his understanding of the world's various political situations. All these elements contribute to the metaphorical structure of the short story, but Kafka's breakthrough lies precisely in bringing them into a coherent narrative. The story, in other words, does not make any specific references to the author's inner world, his political views, or events in his life; instead, these motifs are woven into the story through metaphors, images, and allusions. Similarly, one can state that "A Report" is not "about" evolution or Kafka's criticism of it. Neither is it about Kafka's feelings of otherness among his fellow-men. Instead it combines several creative strands and impulses to produce a metaphorical structure: Rotpeter's alienated position as an ape among humans, for instance, can be interpreted as an existential loneliness of any individual among his fellow-beings; or, alternatively, his transformation can be seen as a satire of Jewish assimilation. Many aspects of the culture thus make their way into the story though my focus here will be on Darwinian science and evolutionary thought specifically.

Along these lines, Margot Norris, maintains that the evolution of the ape in Kafka's short story emerges as a consequence of Darwinism, which itself aroused renewed European curiosity about exotic fauna, and particularly in those marginal and transitional species displayed in traveling circuses and menageries at the turn of the twentieth century. The critic thus traces the connection of Kafka's theme to the typical for his time interest in natural history. On the other hand, the connection between Darwin

and Kafka's short stories is by no means simple and direct; nor can Darwinism as a movement, even only sixty years after The Descent of Man, be reduced to the efforts of a single person: the popularization of Darwin's ideas was the work of many writers. Indeed, the sources of Darwin's metaphors and ideas, many of which he did not actually invent himself, are a popular subject of present-day research. As Jaques Barzun puts it, "What brought him rapid victory and prolonged sway over his age was … the ability of the age to recognize itself in it" (80). Thus, one of the sources for many of Darwin's works, including the Expression of the Emotions in Man and Animals and The Descent of Man, was the book by a German zoologist Alfred Brehm Illustriertes Tierleben [Illustrated Animal Life] (1863). Brehm's book, at the time a popular item in many ordinary European households, provided Darwin with first-hand accounts of expeditions, anecdotes about animal behavior, and observations of the everyday habits of various species, allowing Darwin to draw conclusions about animal intelligence and cognitive skills. It remains problematic which of these sources, Brehm's book or Darwin's works, both of which were widely discussed in newspapers and magazines accessible to Kafka, exercised greater influence on his own writing. It may, on the other hand, prove more useful to compare the treatment of animals in Kafka's stories with Darwin's writings in an attempt to deduce indirect influences, as long as one keeps in mind that evolutionary thinking cannot be considered as the result of the workings of a single mind. Still, it is important to note that Kafka's possible sources of Darwin's ideas were newspapers and magazines such as Die Neue Rundschau, Pan, Das Pfennig-Magazin, and Die Gartenlaube, in which authors such as Ernst Haeckel, Carl Vogt, Wilhelm Bölsche and

Alfred Brehm published articles on popular scientific topics. Kafka's horizon of popular scientific topics is discussed by Paul Heller who confirms that:

> Franz Kafka war intensiver Zeitungs- und Zeitschriftenleser, am kontinuierlichsten war er an der *Neuen Rundschau* interessiert, die sein Werk mehrfach beeinflußt hat. In der *Neuen Rundschau* waren die Bereiche Politik, Kunst und Literatur und Geistes- und Naturwissenschaften in zeitweise hervorragender Weise miteinander vereint. Als Leser dieser Zeitschrift war man sozusagen, auf der Höhe der Zeit.' (13-14)[i]

And further on:

> Populärste Vertreter, Verkünder und vor allem Interpreten der Lehren Darwins im deutschen Sprachraum waren Ernst Haeckel, Carl Vogt und Wilhelm Bölsche... Bölsche und Haeckel erreichten mit den Hunderttausenden ihrer Buchauflagen und mit ihrer Omnipräsenz in allen Zeitungen und Zeitschriften wahrscheinlich irgendwann einmal jeden Deutschen, der lesen konnte. (14)[ii]

While among the sources for Kafka's ideas were the above-mentioned books and periodicals, then prior German literary models for his story could easily have been E.T.A. Hoffmann's "Nachricht von einem gebildeten jungen Mann" [News about an Educated

[i] Franz Kafka was an avid reader of newspapers and magazines, his most continual interest being Der Neue Rundschau, which influenced his works in many ways. In Der Neue Rundschau the areas of politics, art and literature, as well as humanities and natural sciences were combined in a way which was, in a contemporary sense, outstanding. As a reader of this magazine, one was, so to speak, well informed of contemporary developments.

[ii] The most popular defenders, heralds, and before all interpreters of Darwin's ideas in the German-speaking world were Ernst Haeckel, Carl Vogt, and Wilhelm Bölsche… Bölsche and Haeckel, whose books came out in hundreds of thousands of copies and whose presence was ubiquitous in all newspapers, were evidently able to reach in one time or another every German who could read.

Young Man] (1814) and Wilhelm Hauff's "Der Affe als Mensch" [The Ape as Man] (1826). These works share a common theme of the possibility of teaching an ape the manners and habits of a contemporary educated European. Another possible source for Kafka's short story, just as for Darwin's works, is Alfred Brehm's reference book Tierleben (1860s), in which the author introduces real-life accounts of apes, who were capable of smoking and drinking wine. It is, in other words, important to be aware of the literary and historical tradition within which Kafka's short story falls because such knowledge allows one to read it as emerging from an historical and literary, as well as scientific context rather than as a merely personal account of Jewish assimilation, as some of the critics mentioned above attempted to show.[7]

Kafka's oeuvre also includes many short stories where animals become protagonists, and which are written from the perspective of animals. In this chapter my focus will be on the story, "A Report to an Academy." The animal point of view introduces an interesting aspect into the problem of observation in biological science: as a rule, animals in science are treated as objects of observation, and later the findings are reported by a scientist who seeks to claim objectivity. With the onset of popular research related to animal consciousness, intelligence, psychology, and language, in the late nineteenth and the early twentieth centuries, it became more commonplace for scientists to speculate on what animals themselves might say about their situation were they given the opportunity to express themselves. Darwin thus speculates in The Descent of Man how his dog might have defended its mental individuality (a quality that is akin to self-consciousness in people, according to Darwin): "This dog might have brought forward the argument lately advanced to crush all evolutionists, and said," I abide amid all mental

moods and all material changes…"[8] And in the following chapter he wonders what apes themselves might say about their own intelligence, thus turning them, if only in his imagination, into reliable observers and recorders of their own behavior: "An anthropomorphic ape, if he could take a dispassionate view of his own case, would admit that he could form an artful plan to plunder a garden—though he could use stones for fighting or for breaking open nuts, yet the thought of fashioning a stone into a tool was quite beyond his scope (Descent 837)." It is remarkable how close the first part of the above excerpt is to the situation depicted in Kafka's story, where the ape, who reached the developmental level of modern Europeans, takes an "impartial" view of his own case and presents it to the academy. Darwin's paragraph continues in the same vein, as if apes were presenting arguments for their own case: "as he would admit…," "some apes, however, would probably declare…," "they would admit…," they might insist…," "they would be forced to acknowledge…" (837). It is significant that a scientist like Darwin would resort to these technique—of imagining how animals themselves might describe their mental characteristics to people—in a serious scientific work, where he claims that his conclusions are based on the objective evidence. The reader, of course, realizes that no such thing is possible, because apes, however highly organized, cannot analyze and logically argue the level of their mental development. The paragraph, then, serves as an amusing digression, when apes with imaginary characteristics summarize the views of Darwin's two preceding chapters (chapters Two and Three of the Descent), in order to add more weight to the scientist's main argument that: "the difference in mind between man and the higher animals, great as it is, is certainly one of degree and not of kind" (837).

This conclusion easily lends itself to comparison with certain aspects of Kafka's story, and the argument that humans have a peculiar place in the history of living creatures as the summit of the organic scale, becomes doubtful if one reads into Darwin's works or Kafka's story. Herein lies an imaginative leap which was hardly thinkable before evolutionary theories were formulated, when the gap between man and animals was considered to be more or less unbridgeable and only man was considered to be high enough on the great ladder of being to be able to observe the behavior of other creatures in a scientific fashion. In his appeal to imagination, Darwin embraced the newer logic of discovery in which imaginative hypothesis played a major role. In allowing various animals to tell their own stories, Kafka does not simply turn a scientific point of view upside down but continues to explore certain trends of popular scientific discussions. His intention is not solely satirical but is part of the larger tendency in contemporary thought which was beginning to view animals as fellow-creatures capable of higher mental powers. Darwin himself considered that human beings indeed possessed certain qualities (such as self-consciousness and abstraction) which set them apart from animals, but these qualities were only the incidental results of human development, and not the inevitable characteristics with which humans alone were endowed (as argued by some theories of intelligent design).

One might argue as well that other literary genres, such as fairy tales and fables, make use of a similar strategy by allowing their animal-protagonists to make the case for their own situation—and that Kafka uses some of those literary genres as models for his short stories.[9] It is relevant to consider a few representative examples among them—Aesop's fables (fifth century B.C.), for instance, or Apuleius's novel The Golden Ass

(end second century A.D.), and the medieval epic Ysengrimus (about 1150)—in which the authors either allow animals to act as characters or ascribe human qualities to them, thus permitting an objectifying perspective on the human condition.

In Aesop's fables, which most people would certainly have known in Kafka's day, animals act and speak with motives and emotions appropriate to human beings. These parable-like stories, often told in a laconic style, teach lessons in morality: typically, they represent ideas of ordinary people about the wise conduct of life, the social virtues that they describe having little to do with the pursuit of the ethical clarity of the philosophers. They remain councils of worldly wisdom based on observations of childishly simplified behavior, and contain stated or implicit moral lessons. Animals in fables act "as if" they were people, and allow one to learn without feeling outraged about an imperfect human nature; animals, on the other hand, do not seem to learn ethics from their mistakes and so repeat their errors time and again: the fox, for instance, is always successful in deceiving other animals; the lion rules by brutal force; and the lamb's meekness gets him in trouble.

By contrast to this entire genre, which has a definite purpose (to convey oversimplified moral lessons) and may easily meet readers' expectations, the famous novel by the Roman author Apuleius The Golden Ass is not as unambiguous, particularly in the way it ends by leaving the reader with a sense of anticlimax. Its main character Lucius undergoes a metamorphosis when he is mistakenly changed into a donkey, and must survive his misadventure and regain his human shape in order to tell his story. It's a backward metamorphosis, when one compares it with Kafka's Rotpeter who reaches the level of a human, but like Kafka's ape, Lucius displays his capabilities when he performs

in public forced by his current owner. Unlike Rotpeter, who gradually learns human language, Lucius in the form of an ass becomes an inarticulate spectator of the world, which he formerly regarded from the point of view of a privileged individual and must now see from below. The society from the point of view of an animal is so appalling that Lucius turns to the protection of the savior goddess Isis, with whose help he is turned back into a human, is initiated into her cult, and, in turn, earns himself a respectable position in society. It remains highly debatable whether Lucius found a way to an actual spiritual existence, or whether he remained as much of an ass as ever due to his credulity and superstition. Much like Kafka's story, Apuleuis' brilliant novel resists simplification and lends itself to various interpretations.

Another well-known example of a work, where animals act as characters and which served as a model to numerous later fictional works, is the medieval epic poem Ysengrimus telling the story of the enmity of the Wolf Isengrim and Reynard the Fox and their relation with other animals. Isengrim is a greedy, dim-witted, and clumsy wolf, who suffers one misfortune after another at the hands of a cunning deceiver Reynard who has other animals do his dirty work. Animals are used to make a satire of human shortcomings in general, and the selfishness of contemporary monks in particular. In contrast to childishly simplified animal characters in fables, where they act as mere types, animals in the medieval epic are complex characters who act like human beings. If satire in Ysengrimus is precise and transparent in disclosing people's motives, then in contrast to that one almost always runs into difficulty trying to interpret Kafka's satirical intent in Ein Bericht. Did Kafka make satire of the human condition in general, of the theory of

evolution, of the precarious position of humans as the summit of the organic scale, of Jewish assimilation, or all of the above?

To summarize, there are several well-known literary works where animals are made characters, or where men turn into animals and vice versa. They serve as a satire of human weaknesses in a particular society or show the view of that society from below, as if seen through the eyes of an animal (this is the case with The Golden Ass). Attitudes and interactions portrayed in these works are, for the most part, credible, because animals live in a world recognizable to the reader, but, at the same time, they are far enough away so the reader does not feel outraged and is allowed to derive a moral lesson or is simply amused. Fictional works discussed above in connection with Kafka's animal narratives, all have an ending which allows the reader the feeling of a closure or a sense of a learned moral. Even the provocative and much-discussed ending of The Golden Ass, which can be interpreted in various ways, is an ending nonetheless: Lucius human shape is restored, he gains a notable position in the society although at the expense of his initiation in the cult of Isis. The majority of Kafka's stories do not have a traditional ending or a resolution of the situation, and no obvious moral lesson. Many of his stories, including the one discussed here, are left unreconciled: the ape-protagonist is neither complaining about his life among humans, nor is he satisfied with it; he has simply achieved what he had set out to achieve. In this sense, there is no affirmation or negation of any values as one expects from art in the Western tradition, because the position of the fictional, as well as of the real narrator, is not clear-cut.

In Kafka's short stories animals do not just symbolize or represent man but also observe and imitate him, and speak for themselves and about themselves, even if the

reader scarcely ever knows more than what the protagonist is willing to share. Judith Ryan calls this kind of narrative perspective "the limited third-person narration," which restricts itself to the perceptual field of the protagonist (German Literature, 696). The reader is allowed access to the character's experiences as if from within and, at the same time, gains some distance from the character to be able to criticize his understanding. This mode of narration, favored by Kafka, allows the author to touch upon such issues as animal intelligence and the relationship between the observer and the observed, as well as to reverse the relationship between man and animals.

"Ein Bericht für eine Akademie" was written in 1919 and tells the story of an ape named Rotpeter, who "reports" to the members of the academy the story of his capture and humanization. Rotpeter's evolution has occurred over the course of five years, and, interestingly, as a result of his own decision: he realizes that he must start acting more human to survive among people: "Aber Affen gehören bei Hagenbeck an die Kistenwand—nun, so hörte ich auf, Affe zu sein" ("Ein Bericht" 203).[iii] [10] Much like monkeys in the epigraph at the front of this chapter, from Darwin's The Descent of Man, Rotpeter smokes a pipe and drinks liquor imitating the behavior of sailors on board the ship that has captured him.

Kafka may indeed be nodding his acknowledgement to Darwin here, because in an attempt to show how easily monkeys can imitate certain types of human behavior--which proves the common origin of apes and man--the English scientist confesses to his readers: "Many kinds of monkeys have a strong taste for tea, coffee and spiritual liquors:

[iii] Yet as far as Hagenbeck was concerned, the placed for apes was in front of a locker—well then, I had to stop being an ape. Franz Kafka, The Complete Stories, "A Report to an Academy," (New York, Schocken, 1971), 253. Here and later the English translations of passages from Kafka's story will follow this edition; the story will be abbreviated as "A Report." The German quotations will follow Reclam edition.

they will also, as I have myself seen, smoke tobacco with pleasure." It is important for Darwin to add that he has seen that sort of thing himself: the fact that he observed certain behavior in apes at first-hand makes his conclusions the more valid scientifically. His reader is thus led to believe that observations, unspoiled by hypothesis, have come first, and that only after he had accumulated a number of those observations was the author "forced" to draw his conclusions, namely that man and apes have a common progenitor. One can speculate that Darwin's theory was the result of observation, on the one hand, and an imitation of previous theories, on the other. Similarly, Rotpeter's evolution into becoming human has come about as a result of his own observation of human behavior, and then its imitation.

Only after the ape from Kafka's story learns how to smoke, spit and drink, in imitation of the men around him, does he learn how to speak. Rotpeter mentions the cruel conditions of his capture: he has two gunshot wounds dating from the time when he was captured: on board the ship he is kept in a very tight cage, sailors spit at him, poke him with sticks, burn his fur with a pipe, and make him drink schnapps, which he finds at first revolting. The behavior of man, a "pinnacle" of creation, as he describes it, is not much better than that of the ape's: Rotpeter and the sailors spit in each other's faces, with the only difference that the ape licks his face clean while the sailors do not. Finally, Rotpeter finds a way out of his barbaric predicament: he will stop being an ape and become "human," and then his life in his terrible cage will come to an end. He often mentions that his goal is not freedom, but that he has simply been looking for a way out (der Ausweg): true freedom was only possible in his former life as an ape in the jungle; besides that, he knows some men who long for freedom in this broader sense. To find freedom would be

to escape from the cage and jump into the ocean, but he is not after that kind of freedom. Rotpeter's "way out" does not come as a result of calculated thinking or imagination, it is rather a result of careful observation and imitation of human behavior:

> Ich rechnete nicht, wohl aber beobachtete ich in aller Ruhe… Jedenfalls beobachtete ich schon lange vorher, ehe ich an solche Dinge dachte, ja die angehäuften Beobachtungen drängten mich erst in die bestimmte Richtung. Es war so leicht die Leute nachzuahmen" ("Ein Bericht" 206).[iv]

But if Rotpeter stopped being an ape, then what is he? He is, of course, still an ape, for in five short years of his transformation his physical appearance did not change to that of a human being. He became an ape among humans, an animal with a cultural level of a modern European.

As an ape in a human society, Rotpeter has two choices: to be locked up in a zoo or to join a variety show as a performer. He chooses to become a performer because life in a zoo would not be very much different from his life on board ship, with the only difference that his cage might be bigger. He hires teachers and becomes an artist and then a celebrity. On a typical day, he rests or receives visitors; he performs at night and, after the show, goes to various banquets or receptions at learned societies. We find out at the end of the story that he can neither complain about his present life, nor is he satisfied with it. Rotpeter has simply achieved his goal which was to find the way out of his cage.

As with many of Kafka's stories, various interpretations of this one are possible, and have been made. "Ein Bericht" both mocks education and the behavior of educated Europeans: it takes the ape a mere five years to reach a level of a "typical" educated

[iv] I did not think things out; but I observed everything quietly […] At any rate, I watched them for a long time before I even thought of such things, indeed, it was only the mass weight of my observations that impelled me in the right direction. It was so easy to imitate these people. ("A Report" 255).

person. What his education allows him to do is primarily lead an idle life: he sits around in a rocking chair looking out the window, with his hands stuck in his trouser pockets and a bottle of wine on the table. On the other hand, the story can be read as an allegory of artistic existence, which is out of synch with everyday life of ordinary people: Rotpeter is after all a variety show artiste. Another reading of the story might well focus on illuminating the cruel practices of capture and taming of the exotic animals. Some critics see "Ein Bericht" as satirizing Jewish adaptation through conversion, or assimilation into the dominant culture. Others view it as a reverse "Metamorphosis" in which a man, Gregor Samsa, turns into an insect-like creature. Norris sees the main goal of the story as devaluing human reason: the ape-protagonist achieves the "summit" of evolutionary development, and yet his achievement is portrayed in such a way that the reader doubts that this, indeed, is a higher level of development. Still another reading, however, and that which is of interest here, must naturally consider the interactions of certain subtexts of the story with the scientific thought of the day.

It must be noted that in fragments of early versions of the story, there is a narrative frame: a provincial admirer's interview of Rotpeter. (There are two fragments of the story that have survived.)[11] But in the complete, well-known version of the story the frame disappears, and the only narrative voice is that of Rotpeter. The interviewed ape, or the object of the journalist's interest, becomes the observing and writing subject of the final version of the story. Rotpeter, the author of his own report, identifies himself with the members of the academy by virtue of his powers of observation, reasoning, and objective reporting. In doing this, he stops being the animal "other," somebody, or something, written about, and gains the status similar to that of other academy members.

Whether or not such status is achievable for an ape, however advanced, is one of the issues that the story satirizes.

Similarly to his imitation of the sailors' behavior on board the ship, he imitates the attitude of a scientist. He finishes his report with the following dispassionate words which imply self-control on the part of Rotpeter, whose goal it is to remain an uninvolved observer of his own transformation: "Im übrigen will ich keines Menschen Urteil, ich will nur Kentnisse verbreiten, ich berichte nur, auch Ihnen hohe Herren von der Akademie, habe ich nur berichtet" ("Ein Bericht" 210).[v] His goal is an objective record of his own evolution; he emphasizes that judging, as well as being judged—that is expressing a subjective opinion about something—has no place in a piece of "scientific" writing.

It is not incidental, then, that the title of the story is "Ein Bericht für eine Akademie" ["A Report to an Academy"]. The fictional author, Rotpeter, might have called his piece an autobiography, or a story, or Kafka might have decided to frame his story as an interview with an ape, as he did in one of his drafts. "Ein Bericht," or a report, on the other hand, is a genre of scientific writing intended for members of a scientific community who entertain clear expectations: those of objectivity coupled with an absence of emotional language, and a deliberate posture of detached, distanced interest with respect to the subject of reporting. Detachment is achieved, of course, through depersonalization: the author abstains from value judgments and emotional expressions, and, most of all, from discussing himself.

The subject of Rotpeter's report, however, is his own transformation into a human being: he writes about his suffering on board the ship whose crew have captured him,

[v] In any case, I am not appealing for any man's verdict, I am only imparting knowledge, I am only making a report. To you also, honored Members of the Academy, I have only made a report. ("A Report," 259).

details his own observations of human behavior and his attempts to imitate it, discusses his learning process, and then describes his life as a variety show actor. While he struggles to maintain a detached, matter-of-fact tone, as he talks about when he was wounded or the cruelty of the sailors, there remains an emotional tension: he has made himself the subject of his narration and detachment is impossible.

Another example of this quasi-scientific style in a work of fiction, in which the author makes satirical use of contemporary scientific methods is Swift's Gulliver's Travels. As in Kafka's story, which abounds in realistic detail (such as the name of the company capturing Rotpeter, the details of his captivity and the academy's request for report), Swift's book is characterized by the seeming exactitude of the protagonist's account. On the one hand, details, such as descriptions of weather and wind, and nautical terms and compass directions, make mock of the genre of travel literature; on the other hand, Gulliver, whose habit is to measure everything and give us the most matter-of-fact account about the least probable events, stands apart from the world and sees it "objectively." For example, when describing the Lilliputians, Gulliver offers meticulous measurements of their world (the height of its inhabitants, the size of their dwellings and so on) so that Swift's fantasy world acquires realistic, "probable" details: the reader comes to believe that this is what the world would be like, if it were reduced to Lilliputian proportions. This blending of the fantastic and the natural in both Swift and Kafka creates the effect of probability: the reader begins to believe that Gulliver indeed observed the fantastic lands and their inhabitants, or that Rotpeter is really writing a report describing his transformation. The use of the quasi-scientific style of the travel genre allows Swift to make a connection, typical in Augustan travel writing, between

traveling and observing various cultures on the one hand, and educating of the reader, on the other. The assimilation of the techniques of scientific writing into literature amounts to creating an atmosphere of pseudo-objectivity, or having the impression that what the author is talking about has indeed taken place.

Rotpeter's report sounds official and at times hackneyed and self-important, because of his frequent use of introductory phrases, transitions, explanations, addresses, and repetitions; in the manner of a formal piece of writing, he provides an introduction and a conclusion. His introductory sentence proves his familiarity with the etiquette of academic circles, and he seems respectful of his audience's desire to receive a certain type of objective report: "Hohe Herren von der Akademie! Sie erweisen mir die Ehre, mich aufzufordern, der Akademie einen Bericht über mein äffisches Vorleben einzureichen! In diesem Sinne kann ich leider der Aufforderung nicht nachkommen" („Ein Bericht" 200).[vi] At the end of his second paragraph, the speaker deliberately introduces what might be perceived as a disturbing insight with his matter-of-fact "offen gesprochen," demonstrating his knowledge of his audience's own animal past: „Offen gesprochen, so gerne ich auch Bilder wähle für Diese Dinge, offen gesprochen: Ihr Affentum, meine Herren, soferne Sie etwas Derartiges hinter sich haben, kann Ihnen nicht ferner sein als mir das meine" („Ein Bericht" 200-201).[vii] Further on, Rotpeter defines the term „der Ausweg" as if anticipating the reader's questions: „Ich habe Angst, daß man nicht genau versteht, was ich unter Ausweg verstehe. Ich gebrauche das Wort in

[vi] Honored Members of the Academy! You have done me the honor of inviting me to give your Academy an account of the life I formerly led as an ape. I regret that I cannot comply with your request to the extent you desire. ("A Report" 250).

[vii] To put it plainly, much as I like expressing myself in images, to put it plainly: your life as apes, gentlemen, insofar as something of this kind lies behind you, cannot be farther removed from you than mine is from me. ("A Report 250).

seinem gewöhnlichsten und vollsten Sinne. Ich sage absichtlich nicht Freiheit“ (“Ein Bericht” 203-204).[viii] His need to explain things demonstrates that his attempt to shape the meaning of his words according to his intentions: „Ich sage absichtlich nicht Freiheit“ (I deliberately do not use the word “freedom.”) He even compliments himself on the clarity of his thinking: „Ein klarer, schöner Gedankengang...“ (A fine, clear train of thought) (“Ein Bericht” 203, “A Report” 253). And, as most scientific papers, the end of Rotpeter’s report contains a summary of the “work” that has been done: “Überblicke ich meine Entwicklung und ihr bisheriges Ziele, so klage ich weder, noch bin ich zufrieden […] Im Ganzen habe ich jedenfalls erreicht, was ich erreichen wollte ” („Ein Bericht“ 209-10).[ix]

This formal, pseudo-scientific style allows him to identify himself with the members of the academy: like his imitation of sailors on board the ship, he imitates the writing style of scientists. Instead of the victim, the animal among humans, he becomes their peer by addressing the members of the academy as if they were his colleagues. It is ironic that for Rotpeter to act human means that he needs to learn how to drink, spit, smoke, and shake hands; and that to write like a scholar means that he needs to adopt the formal features of the academic style, such as various introductory and modifying phrases, as well as the posture of an “objective” observer.

Rotpeter’s clever shift of perspective from observed to observer and his becoming the narrating subject of his own story becomes all the more fascinating if one takes into account the widespread interest in animal intelligence and animal psychology, as well as

[viii] I fear that perhaps you do not quite understand what I mean by “way out.” I use the expression it its fullest and most popular sense. I deliberately do not use the word “freedom.” (ibid. 253).
[ix] As I look back over my development and survey what I have achieved so far, I do not complain, but I am not complacent either. […] On the whole, at any rate, I have achieved what I set out to achieve. (ibid. 259).

in tame and trained animals performing in circuses, variety shows, and fairs, typical of the scientific community and the public in general around the turn of the nineteenth century and into the first decades of the twentieth century.[12] Such interest was inspired by Darwin's ideas, and their subsequent popular discussions, regarding the changing perception of animals in relation to human beings: some aspects of animal intelligence, behavior and emotional life were similar to those of men.

In Kafka's story, the question remains open whether it is Rotpeter who picks up only on the superficial characteristics of being human, or whether it is the writer who is mocking men for not truly being the higher, more developed of primate species. One finds several places in the story where human behavior--as observed by an ape--appears ape-like. There is, for instance, only an arbitrary distinction between sailors spitting and rubbing their bellies and the ape's scratching and flea hunting; or between apes jumping from tree to tree in the jungle and acrobats performing in the same variety show before Rotpeter: "Sie schwangen sich, sie sprangen, sie schwebten einander in die Arme, einer trug den anderen an den Haaren mit dem Gebiß […] Kein Bau würde standhalten vor dem Gelächter des Affentums bei diesem Anblick" („Ein Bericht" 204).[x]

[x] They swung themselves, they rocked to and fro, they sprang into the air, they floated into each other's arms, one hung by the hair from the teeth of the other. […] Were the apes to see such a spectacle, no theatre walls could stand the shock of their laughter. ("A Report" 253).

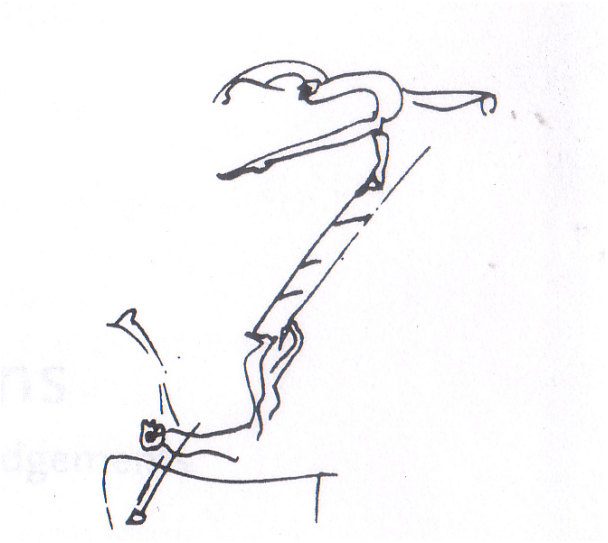

Fig. 1. A drawing by Kafka of the Japanese acrobats.
Dairies, November/December 1909.

An animalistic nature exists of course in both, men and apes, and it is only a matter of a degree, not of a kind, whether one will regard the performers as apes rather than humans. In this way Kafka's story cleverly touches upon another one of Darwin's ideas, namely that man and apes have a common progenitor, and that human beings are in fact close to apes. Rotpeter makes an observation of one of the sailors: "Wir [kämpften] auf der gleichen Seite gegen die Affennatur und ich [hatte] den schwereren Teil" („Ein Bericht" 208).[xi]

At the very beginning, Rotpeter cleverly changes the topic of his report as requested, from his life as an ape, to an account of his evolution into a human being. In this sense, his report is about trying to avoid being regarded as an ape: he changes the subject, complains about his bad memory and the impossibility of giving an account of his previous animal existence, confesses that human language is inadequate to express an

[xi] We were both fighting on the same side against the nature of apes and I had the more difficult task. ("A Report" 257).

ape's proper feelings, and attempts an objective academic style. Instead of being observed and described, Rotpeter turns the table and makes human behavior the specimen of his own observation and study.

Despite his efforts to avoid being regarded as an ape and his attempts to maintain an objective tone of narration, the ape still remains the subject of a report, even though he is himself the author of it. At the very end of his account, it becomes clear that it is impossible to be fully objective and emotionless while discussing oneself, and Rotpeter's feelings break through into his report:

> Komme ich spät nachts von Banketten, aus wissenschaftlichen Gesellschaften, aus gemütlichen Beisammensein nach Hause, erwartet mich eine kleine, halb-dressierte Schimpansin und ich lasse es mir nach Affenart bei ihr wohlgehen. Bei Tag will ich sie nicht sehen; sie hat nämlich den Irsinn des verwirrten dressierten Tieres im Blick; das erkenne nur ich und ich kann es nicht ertragen. („Ein Bericht" 210)[xii]

In this passage Rotpeter confesses that he allows himself to act like an ape (which is what he is, after all) at night, apparently, after no one can see him besides a half-trained little monkey. During the day however when Rotpeter is a focal point of human gatherings and must act like he trained himself, in other words, like a human, he cannot stand looking into her eyes because he sees an animal looking back at him. This is the animal that he once was and pretends not to be any more. In the beginning, Rotpeter asserts that human language is inadequate to describe the feelings of an ape, therefore his

[xii] When I come home late at night from banquets, from scientific receptions, from social gatherings, there sits waiting for me a half-trained little chimpanzee and I take comfort from her as apes do. By day I cannot bare to see her; for she has the insane look of the bewildered half-broken animal in her eye; no one else sees it, but I do, and I cannot bear it. ("A Report" 259).

animal past is not accessible to him any longer. At the end, he confesses that he finds the gaze of the other animal to be disturbing, but despite it he allows himself to act as an animal when he is not observed by human beings. Rotpeter does not need to pretend, it seems, when he is with another animal. This leads one to believe that his humanness is to some extent a posture, or another type of a variety show act, and so is his writing style, which is artificially objective on the one hand, but allows a glimpse into Rotpeter's real feelings, on the other.

Additionally, the irony of his situation is that despite his attempts in the report to make people the object of his observations, in real life, it is Rotpeter who remains the focal point of all gatherings: at the theater, at scientific lectures, gatherings, and banquets. It is remarkable that in one of the existing fragments of the story, Rotpeter's impresario makes a confession that he always secretly watches his protégé: "But I, who of course dare not let him out of my sight, always rent the apartment opposite his and watch him from behind curtains."[13] This fragment was not included into the final, well-known version of Kafka's story, but it is nonetheless indicative of the ape's situation: he is a constant spectacle, while always being watched, observed, looked at, secretly (as in the case with his impresario) or openly (during his performances). And, as shown below, this situation of being an observed animal matches up neatly with how Darwin treats his observed subjects in his "The Expression of Emotions in Man and Animals."

It is, however, not only through the formal features of his style that Rotpeter struggles to maintain the posture of the "observer" rather than "the observed": he also does so by avoiding expressions of his own emotions and narrating the story of his cruel treatment by the sailors as if it happened to someone else. In other words, he distances

himself from his feelings and pretends that he is an objective observer of his own pain, imitation and pretense is his usual behavior throughout the story. When describing how he was wounded at the time of his capture, for example, he avoids talking about physical pain altogether: "Man schoß; ich war der enzige, der getroffen wurde; ich bekam zwei Schüsse" ("Ein Bericht" 201).[xiii] This account is matter-of-fact, reminiscent of a scientific or journalistic style; it continues in the same vein:

> Einen [den Schuss] in die Wange; der war leicht; hinterließ aber eine große ausrasierte rote Narbe, die mir den widerlichen, ganz und gar unzutreffenden, förmlich von einem Affen erfundenen Namen Rotpeter eingetragen hat, so als unterschiede ich mich von dem unlängst krepierten, hie und da bekannten, dressierten Affentier Peter nur durch den roten Fleck auf der Wange. Dies nebenbei. ("Ein Bericht" 201)[xiv]

In this passage, Rotpeter tells his readers how the scar from the wound earned him his name; it is noteworthy that a bigger problem for him is his name's repulsiveness rather than his scar's disfigurement. The ape is thus trying to distance himself from his own pain and to present an impassionate report. Later, when describing how he was locked in a cage that was too low for him to stand up and too tight for him to sit down, with the metal cutting into his flesh, he rationalizes the cruelty of his experience without making reference to emotion: "Man halt eine solche Verwahrung wilder Tiere in der allerersten Zeit für vorteilhaft, und ich kann heute nach meiner Erfahrung nicht leugnen, daß dies im

[xiii] They shot at us; I was the only one that was hit; I was hit in two places. ("A Report" 251).
[xiv] Once in the cheek; a slight wound; but it left a large, naked red scar which earned me the name of Red Peter, a horrible name, utterly inappropriate, which only some ape could have thought of, as if the only difference between me and the performing ape Peter, who died not so long ago and had some small local reputation, were the red mark on my cheek. This by the way. ("A Report" 251).

menschlichen Sinn tatsächlich der Fall ist" ("Ein Bericht" 202).[xv] What can he mean by "im menschlichen Sinn" (from the human point of view)? And what is to be understood by such treatment that he describes from the point of view of the animal? The sentence is ambiguous: Rotpeter tells us that barbaric treatment of animals is beneficial, as his own experience shows, but only from a human point of view. He conceals his own point of view because, possibly, revealing it would let him appear to be a victim of circumstance—a role he wishes by all means to avoid. In a way, one can say that Rotpeter avoids talking about violence in terms that might make him appear a weak, emotional, and biased creature: he describes his painful experiences in purely mechanical terms without reference to emotion. He is only imparting knowledge and making a report, according to his own words at the end of the story; and within the framework of empiricism, which was the predominant scientific method until the end of the nineteenth century, there is a strict, albeit facile, division into impartial experimenter and observed phenomenon. Subjective opinions and emotional language, according to this view only contaminate an impartial outlook.

As indicated above, the fact that Kafka's story is framed as a report written by an ape—rather than as an interview with an ape, or a third person account of him—allows one to see it as quasi-scientific. As Kafka's story deals with evolution, a reader may easily wish to compare it with texts by Darwin. The only information we find out about Rotpeter's evolution is the one supplied by him, and there is neither third-person commentary, nor another opinion about the ape's development into human (if we remain

[xv] Such a method of confining wild beasts is supposed to have its advantages during the first days of captivity, and out of my own experiences I cannot deny that from the human point of view this is really the case. (ibid. 252).

within the fictional framework). This kind of account has no verifiability, nothing but the testimony of one narrator.

For Kafka, art is more about images than about ideas, and this is why his stories are so open to various interpretations. Thinking in images means a great focus on detail. For Kafka, close observation of detail also serves as a way to create distance between himself, the observer, and the described object, or the observed. His descriptions of everyday objects are powerful because of their simplicity and familiarity; but because the narrative perspective constantly shifts, the opposites blur, and the contrasting views come together, there emerges for the reader the feeling that there is nothing to hold onto in this world of familiar objects. For instance, Ein Bericht starts with a matter-of-fact tone: an ape is honored to be invited in order to present his report to the academy. The reader feels amused and anticipates what the ape has to say only to find out that this is exactly what the ape is unable to do because, as he explains, his transformation into a human would not be possible if he were holding on to his memories of his former life as an ape. The question immediately arises: if he cannot give a requested report of his life as an ape, what is his report about. And then the ape continues in an even more ambiguous manner:

> …Ihr Affentum, meine Herren, soferne Sie etwas Derartiges hinter sich haben, kann Ihnen nicht ferner sein als mir das meine. An der Ferse aber kitzelt es jeden, der hier auf Erden geht: den kleinen Schimpansen wie den großen Achilles. ("Ein Bericht" 200-201)[xvi]

One might interpret this as the ape's realization that his audience, the members of the academy, and he, the author of the report, have a common past—their origin from an

[xvi] …your life as apes, gentlemen, insofar as something of that kind lies behind you, cannot be farther removed from you than mine is from me. Yet everyone on earth feels a tickling at the heels; the small chimpanzee and the great Achilles alike. ("A Report" 250).

ape—and that this origin is their common vulnerable spot. In other words, both civilized man and a humanized ape still have traces of animal nature in them. Rotpeters' statement comes remarkably close to the famous last sentence of The Descent: "[…] Man still bears in his bodily frame the indelible stamp of his lowly origin" (1248).

And then Rotpeter continues his narration for his fictional audience by providing a great number of concrete details: the place of his origin, the name of the expedition that captured him, details of his wounds from gunshots, stages of his learning, and his reflections about his own transformation. One of Kafka's techniques is the literalization of metaphor: his fantastic world is depicted with such an abundance of realistic detail that it becomes believable. Along these lines, Seyppel notes: "Observation… for Kafka is more than just a value in itself: it is completed with fascination in the thing observed. His art is vision and observation."[14]

The popularity of Darwin's writings ensured that the worlds of man and animals no longer be regarded as two separate spheres and that the similarities between both be often discussed and argued. The field of psychology also influenced the direction of research on animals including even in biology and zoology. Questions about the intelligence of higher mammals--dogs, horses, and apes—were popular and investigated. Were they capable of learning human languages? Could they indeed be taught to count, read, and do other abstract operations? Could evolution be artificially arranged over the course of a few generations, in a manner similar to how breeders work to produce new characteristics within the same species? Scholars and non-scholars alike were interested in problems similar to those above and it seemed to many likely, in a gesture crudely Darwinian, that millions of years of gradual evolvement might be skipped and that

evolution might be given a hand by elevating animals to the cultural level of modern man. Several works by Kafka's contemporaries are worth mentioning along these lines: R. L. Garner's Die Sprache der Affen (1900), Wolfgan Köhler's Intelligenzprüfungen an Menschenaffen (1917), and Karl Krall's Denkende Tiere, Beitrage zur Tierseelenkunde auf Grund eigener Versuche (1912). It is to this popular movement, or to this type of quasi-scientific research, depending on the way one looks at it, that Kafka is satirically responding in his short story "A Report to the Academy."

Wolfgang Köhler, for instance, who was a professor of Philosophy in the University of Berlin, writes in his revised volume The Mentality of Apes (1925): "The chimpanzees manifest intelligent behavior of the general kind familiar in human beings."[15] He is writing against the school of psychologists who considered that animals were lacking in intelligence, and proves that chimpanzees "also show a type of behavior that counts as specifically human" (266). Köhler describes the problem of designing the right kind of experiments, and recognizes that: "every intelligence test is a test, not only of the creature examined, but also of the experimenter himself" (265). He thus acknowledges the difficulty of remaining an impartial observer when exploring the intelligence of a primate species so close to humans.

Another example of this contemporary to Kafka interest in animal psychology is the case of Clever Hans, the Horse of Mr. Von Osten, which aroused much controversy. It was first published in 1907 and describes the case of a horse, who was putatively taught by patient methods, similar to those used in primary schools, to comprehend the language, both spoken and written, and to perform some arithmetic calculations. The reports of his performances aroused much popular interest in Berlin and in other cities.

Karl Krall was so convinced that he decided to perform his own experiments on Hans, as well as on the other two horses whom he trained himself by improved methods, and presented his material in a book Denkende Tiere [Thinking Animals] (1912). It is notable that his book contains over 150 illustrations with the help of which Krall converts the reader almost into a spectator of what he describes. Although Krall conducted over 12,000 experiments with Hans and remained convinced of his abilities, his book ultimately failed to provide any specific explanation. Nonetheless, it remains a document of the contemporary interest—however bizarre--in educating higher animals to the level of humans.

It was no big leap from the assumption about animal intelligence to speculations on animals telling their own story, and as suggested earlier, Darwin was among those who imagined what animals might tell us about their own lives were they given an opportunity and were they capable of doing so. Kafka's Rotpeter is just such a narrator of his own history, that of his evolution into a man, which he experienced at will after he decides that he needs a way out of his predicament as an ape. The idea of a story told by an animal was neither new, nor subversive. True enough, animals were typically objects of observation and investigation, and not thinking subjects capable of telling their own story. It was Darwin's writings that have forever changed the concept of scientific objectivity, by placing animals on equal footing with man, by asserting their common descent, and by allowing animals to have the same emotions as man. In Descent of Man Darwin wrote that "the mental powers of the higher animals, which are the same in kind with those of mankind, though so different in degree, are capable of advancement" (From

So Simple a Beginning 1239). Not only animals, in his opinion, possess intelligence, but their intelligence can also evolve into more complex forms.

Throughout Kafka's story, Rotpeter is trying to remain unemotional and objective, an attitude characteristic for the nineteenth century empiricist, and also similar to Darwin's position in his famous last work The Expression of the Emotions in Man and Animals (1872). In it, Darwin wrote: "When we witness any deep emotion, our sympathy is so strongly excited, that close observation is forgotten or rendered almost impossible […]" (From So Simple a Beginning 1267). And a little further we read: "In observing animals, we are not so likely to be biased by our imagination; we feel safe that their expressions are not conventional" (1270). The emphasis here is on animals, as opposed to man, which means that in observing the species other than his own the scientist is able to achieve the level of detachment that allows him to conduct an objective study of emotions. In other words, even though animals are like us in some ways, they are not us. Being far below man on the evolutionary ladder to be observed in a distanced—objective-- manner, the text implies, the animals are at the same time close enough for the observer to draw conclusions about the human race. Among other sources of study, besides animals, who would allow him a similar level of detachment in observing emotions, Darwin chooses infants, the insane, representatives of all races of mankind, his own expressions, and works of great masters in painting and sculpture. Considering the sensitive subject of his work—the expression of the emotions—Darwin places great importance on remaining an impartial observer of various mental states because our sympathy is "easily aroused when we behold any strong emotion, and our attention thus distracted…" (1270). The ape from Kafka's story is also trying to remain impartial and

focused on his narration even when describing the most cruel episodes of his captivity, but his goal is different from Darwin's. He is writing about himself and would like to present as full an account as possible; his goal is, on the one hand, to be heard, and on the other, to weave into his story those embarrassing or cruel aspects of his life among people without appearing to be judgmental.

As we remember, in Kafka's story the sailors on board the ship stick cigarettes into Rotpeter's cage, force him to drink the repellent schnapps, and spit at him. They watch his reaction to their behavior and laugh. This kind of behavior is reminiscent of Darwin's manner of observation in The Expression of the Emotions. Among the emotions that interest the English scientist in monkeys are anger, rage, and fear, all of which he evokes by placing various objects into their cages at the Zoological Gardens: "I made my hands into a sort of cage, and placing some tempting fruit within, allowed both a young orang[utan] and a chimpanzee to try their utmost to get it out; but although they grew rather cross, they showed not a trace of a frown" (From So Simple a Beginning1341). He manipulates himself, or asks the keeper at the zoo, to provoke animal's emotions and then takes a careful record of the muscle movement involved in a particular expression: "The Anubis baboon […] was first insulted and put into a furious rage, as was easily done by his keeper, who then made friends with him and shook hands" (1337). While studying the expressions of painful emotions he teases a "pretty little monkey" until it cries out loudly, and observes that it weeps without tears. A little further, he describes his experiments with monkeys who are astonished or terrified, when he requests to place a fresh-water turtle into their cage. And then he confesses that "it was curious to observe how much less afraid they were of the turtle than of a living snake

which I had formerly placed in their compartment" (1342). This attitude of the scientist-observer towards animals is comparable to the sailors' behavior in Kafka's story: neither the scientist, nor the sailors, set out to hurt the animals for the sake of watching their pain. In Darwin's case, the goal of upsetting an animal is the resulting emotion, which can then be recorded and reported.

Fig. 2 "Chimpanzee disappointed and sulky. Drawn from life by Mr. Wood"
Fig. 18 from "The Expression of the Emotions,"
From So Simple A Beginning (New York, Norton, 2006) 1340.

For the sailors, the end result is perhaps to amuse themselves, as they watch Rotpeter's reaction when he is poked with sticks, burned, or spat at. In both cases, the purpose of man's harsh behavior is to evoke the animal's reaction, feeling, and emotional response, whether for the sake of science or to disperse boredom.

In fact, Darwin's actions were shaped by his views of the mental capabilities of animals, and these views were, in turn, influenced by his views of morality. In his earlier work, The Descent of Man, he writes that "any animal whatever, endowed with well-marked social instincts, would inevitably acquire a moral sense or conscience, as soon as its intellectual powers had become as well developed […] as in man" (From So Simple a

Beginning 818). As this statement boldly implies, man has developed a moral sense by chance, and it could have been instead another higher animal whose social development would reach a sufficiently high stage. Darwin even attempts to describe some examples of moral behavior in animals: "Besides love and sympathy, animals exhibit other qualities which in us would be called moral; […] dogs possess something very much like a conscience" (ibid. 821-22). His ideal of morality was not mankind which lives in fear of mortal sins ("the ennobling belief in God is not universal with man" ibid. 837), but the one that extends its compassion towards other species: "sympathy beyond the confines of man, that is humanity to the lower animals" (ibid. 834). And further on: "This virtue, one of the noblest with which man is endowed, seems to arise incidentally from our sympathies becoming more tender and more widely diffused, until they are extended to all sentient beings" (ibid. 834-35). This apparent contradiction between some of his actions described in The Expressions and his ideas outlined in The Descent, can be in part explained by the goal of his last work to show the universal nature of emotions, as well as their evolutionary nature: Darwin wanted to show that there are similarities of expressions across species lines, and therefore our sympathies should be extended to members of non-human species. His seemingly insensitive experiments and the recorded expressions amount to an acknowledgement that animals—dogs, cats, horses, elephants, apes—do express their feelings, that they indeed can feel pain and suffer, and that, like human beings, they can feel joyous, sad, or happy, depending on circumstances. For him, experiments on animals had to yield information of scientific value: harshness towards animals had to be offset by the benefits for humans, as well as by our deeper understanding of animals. Animal suffering for the sake of human knowledge of animals

was a problem for Darwin: the resulting knowledge of animals convinced him, through the development of the theory of evolution, that nonhuman animals, although different from man in some respects, were similar in others, especially emotionally and in terms of intelligence.

To explain animal behavior, Darwin relied on his own field observations and on the anecdotes of other field observers. His writing is characterized by anthropomorphic tendencies attributing human behavioral, emotional, and problem solving characteristics to nonhuman species. Dogs can feel shame or suffer from ennui, monkeys dislike being laughed at, and all higher animals possess some power of imagination (The Descent, in From So Simple A Beginning 802-804). Darwin observes that "the lower animals, like man, manifestly feel pleasure and pain, happiness and misery. Happiness is never better exhibited than by young animals, such as puppies, kittens, lambs, etc., when playing together, like our own children" (ibid. 800). Emotions are felt by human beings and animals alike and take on similar physiological expressions. Moreover, in Darwin's thought man stops being the mere observer of animal behavior: as in Rotpeter's story, man is the object of observation, alongside with animals. As mentioned before, in order to study the expressions of emotions, the scientist observes animals, infants, the insane, and representatives of various races of mankind, as well as actors, works of art, and accounts about native populations. Darwin's premise that evolution is universal forces him to look at the descent of man: "man must be included with other organic beings in any general conclusion respecting his manner of appearance on this earth" (The Descent in From So Simple A Beginning 777). To this end, he observes behavior, customs, habits,

appearance, and embryological development of human beings and compares them to parallel phenomena of the animal world.

Darwin's idea of evolution is, however, not one involving a steady march of progress to the attainment of preexisting biological completeness: there are no ultimate designs. Adaptations to local environments emerge as the result of what is essentially an unintentional, mindless process. As a paleontologist and evolutionary theorist Gould writes: "The basic theory of natural selection offers no statement about general progress, and supplies no mechanism whereby overall advance might be expected. […] None of Darwin's *outré* ideas could have been more unacceptable than this denial of progress as a predictable outcome of the mechanisms of evolutionary change."[16]

In Kafka's story, on the other hand, the ape evolves into a human not by chance but intentionally, as a result of his own decision. Rotpeter is making an evolutionary change forward, evolving into a "higher" biological form, while trying to recall the path of his development, and this recollection means a movement back in time, into the past. The problem is that successive stages are not necessarily superior to previous ones, and this type of argument seems to represent Kafka's attack on the progressive element among progressive evolutionists. The ape finds himself in an ambiguous situation of mimicking human beings: man fights against a regression, possibly, into "apedom," while the ape in Kafka's story struggles to achieve a human condition, in part by denying its "apeness."

As noted earlier, both Darwin and Kafka were acute observers of detail, and this peculiar importance of observation for both authors is mentioned in critical literature. Some critics even go as far as to suggest that observing and recording details may act as a

substitute for original thinking in Darwin's works. Barzun, for instance, irrationally concludes that Darwin was more an observer than original in his ideas, that his was a mind that acted as a meticulous narrator of detail while remaining only mildly speculative. He writes: "Whatever the fair share of invention came to—and it does not seem to have been his luckiest trait—Darwin was preeminently and observer and recorder of facts."[17] Barzun's comment about the lack of originality in Darwin's writings runs the risk of absurdity, however, the primary role of observation in the exploration of natural life is confirmed if one turns to Darwin's own writings. The scientist recognizes the importance of observing details before one turns to writing; in Life and Letters, one reads: "A naturalist's life would be a happy one if he had only to observe and never to write." (qtd. in Barzun 73). This statement is a reflection of his fascination with diverse and flexible natural forms rather than a confession of his inability to record his thoughts, for Darwin was an undeniably prolific writer. Observation, however, was not just a naturalist's passion for Darwin, but also a way to ensure that what he was writing about would be perceived as "objective": it was not only Darwin, the creative thinker, who spoke to the reader, but the very power of the observed fact that endowed his writing with so much authority. Anyone with enough attention to detail could observe the results of natural selection, but it was the scientist's duty to carefully record and systematize those observations. Observation for Darwin means not only accumulating a large number of details available to any observer, but also spotting the telling detail, as well as the ability to combine a number of such unusual details to draw a precise conclusion about all of them.

Darwin's style forces his reader to believe that he is simply surrendering himself to the observed facts, that it is the mass weight of accumulated evidence that calls for certain conclusions. Darwin leads us to believe that the facts were always already there, that his job as a scientist is not to interpret them and to invent theories, but to simply observe, register, and record the telling evidence. For instance in The Origin, the scientist presents his argument as a succession of ideas about pigeon fancying, cattle breeding, and other domestic varieties, and offers an exhaustive account of how breeding works. Only after learning countless details about seemingly unimportant—or the overlooked—phenomena, does the reader learn about Darwin's "view of life." For the scientist, such world view was a long-felt speculation, whereas his style and his language make it seem arrived at by means of careful observation; a lot of small points are used to make a sudden large one. Darwin does not present one speculation after another, an interpretation after interpretation, instead he describes a large number of observed facts—of something anyone else could have observed—and only then states his conclusion, which makes it seemed forced upon the author.

Both Darwin and Kafka, it seems, choose a position of a disinterested observer for their narrations, but whether or not so great a degree of detachment is possible remains doubtful. Darwin's observations are not in many cases as disinterested or detached as he wants his readers to believe: the theory of evolution by natural selection had been on his mind much earlier than he sat down to write The Origin of the Species, his hypothesis was pre-existing some of his observations. And Rotpeter from Kafka's story does not always manage to stick to the formal and unemotional style of a "report." He does not describe how he feels about the conditions of his captivity, for instance, but chooses to

include details such as his wounds, the narrowness of the cage where he was kept, the cruelty of the sailors, and the uneasiness that he feels at being around another animal. Rotpeter states the intention of his report: ”Im übrigen will ich keines Menschen Urteil, ich will nur Kenntnisse verbreiten, ich berichte nur, auch Ihnen, hohe Herren von der Akademie, habe ich nur berichtet” (210).[xvii] This type of objectivity comes astonishingly close to the last paragraph of Darwin's Descent, in which he writes: „But we are not here concerned with hopes or fears, only with the truth as far as our reason allows us to discover it. I have given the evidence to the best of my ability […]” (1248). Giving the evidence to the best of one's ability—or “revealing” the truth—is the articulated goal for both, Kafka's ape-protagonist and Darwin's narrating voice; they both at once demarcate the science's territory and point to what is “beyond” that type of unemotional, objective style. Feelings, emotions, and judgments make their way into “objective” scientific texts, or literary imitations of those texts, whether openly or overtly. For when Darwin writes at the very end of his monumental Descent, that “hopes and fears” were not his concern, he immediately shows an awareness of his readers' likely reaction to the work which places man within the same biological continuum as other animals, and denies the superior status to man's morality, intelligence, religion, and language itself. It is important nonetheless to keep in mind the difference between a scientist presenting his view of life for the public, and a fictional ape writing a report for his fictional audience. The difference is that between the observed real phenomena and the invented situation; or the scientific writing and the quasi-scientific style in a work of fiction.

[xvii] In any case, I am not appealing to any man's verdict, I am only imparting knowledge, I am only making a report. To you also, honored Members of the Academy, I have only made a report. (“A Report” 259).

Chapter Three
New Vision in Rilke's Die Aufzeichnungen des Malte Laurids Brigge and Freud's „Der Dichter und das Phantasieren"

> Ich habe ein Inneres, von dem ich nicht wußte. Alles geht jetzt dorthin. Ich weiß nicht, was dort geschieht.
> *Die Aufzeichnungen des Malte Laurids Brigge*, Rilke [i]

Following on after Darwin's challenge to man's special place as a creature of God, and human beings coming to be regarded as objects of scientific observation alongside animals, there still remained a consolation for the reluctant in the thought that the supposedly rational human mind, its intellectual powers, as well as its codes of morality, separated them from animals. After Freud's discovery of the unconscious, such certainty began to fade for many: the human mind itself seemed to be governed by a vast unobservable mental apparatus, inaccessible by ordinary conscious introspection. Neither, for such people, could man be seen as a lofty and special creature superior to other creatures, at least from those intrinsic points of view, nor was he even at home in his own mind, beset as it was by irreconcilable and unconscious demands.

Rilke's novel contains several themes, which one might call "Freudian": the idea of the unconscious as concealed from one's own memory; unconscious childhood fears; the unconscious attachment of a child to the parent of the opposite sex; the idea that the life of the ordinary mind exhibits open, revealing symptoms, such as insomnia, disorientation, along with latent content, or repressed childhood fears. Malte refers to das

[i] I have an interior that I never knew of. Everything passes into it now. I don't know what happens there. (Rilke, The Notebooks of Malte Laurids Brigge 5).
Here and throughout this chapter the English translations from the novel will follow The Notebooks of Malte Laurids Brigge, trans. Stephen Mitchell. New York: Vintage Books, 1985, and will be abbreviated as The Notebooks. If unspecified, the translation is mine.

Vergangene (the past), die Kindheit (childhood), and die Erinnerung (memory) to describe these types of conflicts throughout the novel:

> Leben, von denen man nie erfahren hätte, tauschen empor und mischen sich hunter das, was wirklich gewesen ist, und verdrängen Vergangenes, das man wirklich zu kennen glaubte: denn in dem, was aufsteigt, ist eine ausgeruhte, neue Kraft, das aber, was immer da war, ist müde von zu oftem Erinnern. (MLB 56-57).[ii]

If the general public's attitude toward Freud's theories has always remained controversial, the relationship between literature and psychoanalysis can also be characterized as ambiguous. Some writers, indeed, welcomed psychoanalytic theories as a revelation, whereas the others shunned away from it fearing that an objectifying scientific discourse on the secrets of the psyche would suffocate the poetic production.[1] Rilke's eventual rejection of psychoanalytic therapy as a way to cure his condition, on the one hand, and the self-analytical aspect of his writing on the other, make it a provocative topic for investigation.

„Es gibt kaum einen Autor der literatischen Moderne, zumal unter den bedeutenderen, der sich nicht mit der Psychoanalyse auseinandergesetzt hätte," asserts Thomas Anz, the author of „Psychoanalyse in der literatischen Moderne" [Psychoanalysis in Literary Modernity] (1997).[iii] Indeed, one comes across a significant number of critical works dedicated to the exploration of psychoanalytic trends in works of Schnitzler, Hofmannsthal, Thomas Mann, Kafka, and Musil. The poetry and prose of

---

[ii] Lives that you would never have known about bob to the surface and mingle with what really happened, and drive out a past that you thought you knew: for in what rises there is a new, rested strength, while what was always there is tired out from too much remembrance (The Notebooks 63).

[iii] There is hardly an author of literary modernity, particularly among the most important ones, who did not attempt to come to terms with psychoanalysis.

Rainer Maria Rilke is perhaps one exception within this body of criticism since critics for the most part keep psychoanalysis at bay in their readings of Rilke. Significantly, it is true that Rilke himself declined to be psychoanalyzed upon his intense epistolary consultations on the subject with Lou Andreas-Salome, his lover, and then a life-long friend and counselor, for the reasons discussed below. Nonetheless, the context of psychoanalyses has to be taken into account in the discussion of Rilke's texts because of the close thematic parallels, the prevailing cultural climate of the period, as well as some events in the poet's life.

This chapter will focus on the intersections of several Freudian concepts, among them self-observation, repression, and the unconscious as a source of creativity, alongside themes developed in Rilke's sole novel Die Aufzeichnungen des Malte Laurids Brigge [The Notebooks of Malte Laurids Brigge]. Although Freud's works, elaborating id-psychology and ego-psychology, became known to a wide public only after Rilke's novel was published, there being no cause and effect relation implied, the writer's interest in psychology, in problems of perception, and in pathology may be said to be typical of the period. Rilke became familiar with developments in psychoanalysis largely through Lou Andreas-Salomé, who studied Freud's works intensely and later in life became a therapist in her own right.[2] Another possible source of Freudian ideas for Rilke is the fact that he lived with Freud's publisher, Hugo Heller, in Vienna in 1907 (Ostmeier 249). In addition, Rilke discussed psychoanalytical issues with his wife's psychiatrist, Dr. von Gebsattel, and considered himself a possible candidate for psychoanalytic treatment with him (The Correspondence 184). In his letters, Rilke acknowledged that the idea of undergoing psychoanalysis to treat his disorienting condition occurred to him as a way out of his

personal and creative crisis, but he feared that it could undermine his creativity, or that with the exorcism of his devils, his angels too might leave[3]. His literary aspirations made a commitment to therapy impossible because of Rilke's fear that he would be unable to write, if his past and his innermost feelings were scrutinized: "Etwas wie eine desinfizierte Seele kommt dabei raus, ein Unding, eine Lebendiges, roth korrigiert, wie die Seite in einem Schulheft" (qtd. in Ostmeier 239).[iv] It was thus Rilke's own fear of an extended psychoanalysis, or "an excavation of the soul" as he called it (The Correspondence 184), that explained his refusal to engage in a psychoanalytical treatment.

Notably, Rilke started his novel in 1904 and did not finish it until 1910, a period spanning six years and characterized by intense work, research, interruptions, stagnation, and re-writings. In 1925 he noted in a letter to his Polish translator: "Im "Malte" kann nicht davon die Rede sein, die vielfältigen Evokationen zu präzisieren und zu verselbständigen. Der Leser kommuniziere nicht mit ihrer geschichtlichen oder imaginären Realität, sondern durch sie, mit Maltes Erlebnis […]" (Reclam kommentierte Ausgabe 297).[v] The various figures of Malte's Notebooks "sind keine historische Figuren oder Gestalten seiner eigenen Vergangenheit, sondern *Vokabeln seiner Not*" (298, emphasis is Rilke's).[vi] It is important to note that the final version of the novel is the one allowing the reader the most intense concentration on Malte's experiences; the narrative

[iv] Something like a disinfected soul appears from it, an absurdity, a life corrected by a red pen, like a page in a pupil's notebook.
[v] The issue in 'Malte' is not at all to render the multifaceted allusions more precise and independent. The reader communicates not with their historical or imagined reality, but through them with Malte's experience […].
[vi] are not historical figures or images of his own past, but a *vocabulary of his* [Malte's] *troubles.*

frame which the novel had in its earlier forms was eliminated, and so was the fact of Malte's death.

Malte describes his condition as die Krankheit (the illness) that has been underestimated and one can compare it to Freud's description of psychological afflictions that have manifest physical symptoms in the absence of any physical cause, such as a trauma or a disease. The reader learns from Malte's notes about his past memories, his childhood impressions, his confusion about his ancestors, as well as about his present disorientation in a big city, his feelings of alienation, his observations of Parisian "outcasts," and his descriptions of the symptoms of his illness. Die Aufzeichnungen is thus a novel of self-observation, which figures importantly among other themes and motives, and in this sense it can be read in conjunction with Freudian theory. Malte is learning to see his surroundings with a new level of precision, and his goal of learning to see anew stated in the opening passages of the novel leads him to constant introspection, self-observation, and remembering of his confused past. He speaks of the forgotten gestures and habits that can reappear as symptoms of suppressed memory: "Alle verlorene Ängste [aus der Kindheit] sind wieder da" (MLB 57), or so Malte admits on being unable to get up from bed throughout entire days.[vii] Like the Freudian concept of repressed material that seeks but cannot find expression within consciousness because of its socially unacceptable content, Malte fears expression of "das Große," "das Unsagbare" [the Big Thing, the Unutterable]. Not all his fears can be accounted for in words: he is constantly torn between being afraid to articulate them and his inability to put them into appropriate language. One should keep in mind, however, that Rilke did not

[vii] All the lost fears [out of my childhood] are here again (The Notebooks, 63).

intend to write a novel to fit a theory, but to articulate a vision, “das Sehenlernen,” expressible within prose rather than poetry.

As “Ein Bericht für eine Akademie” discussed in the second chapter, Rilke’s novel is a first person narration, which erases the distance between the objective outside world and the subjective inner world of the character. Die Aufzeichnungen des Male Laurids Brigge tells the story of a young Dane who, during his Paris stay, is trying to come to terms with his impressions of the big city, childhood memories, his attempts to write, and as well as his readings of the past authors. Malte’s writing attempts are connected to his project of learning how to see in a new way, das Sehenlernen. In the beginning, the childhood scenes appear to be the opposite of the Paris atmosphere. But the more the protagonist is trying to recall his past, the more it becomes clear how similar the world of his childhood is to his Paris experience.

Die Aufzeichnungen des Malte Laurids Brigge can be thought of as a novel where the aesthetic effect replaces the structure, what is more, the very notion of structure is not applicable to the novel, which has no definite beginning, progression of action, or ending. Likewise, there are no characters in the traditional sense; since this notion implies a close focus on the interaction of people with each other, their actions in relationship to one another, and their development or change in the course of narration, they have become an impossibility in the novel preoccupied with various levels of alienation in society and the psyche. The novel deals with a seemingly chaotic material without ordering it in a linear manner; the plot of the novel is redundant and consists of various stories. For the purposes of analysis the novel can be roughly divided into three parts: Malte’s experiences of Paris, his childhood memories, and the reminiscences and re-writings of

the books that he had read[4]. Undeniably, certain themes, motifs and preoccupations repeat themselves throughout the narration, yet without connecting them into a coherent structural wholeness, a novel in the realist or romantic sense of the word. One of such themes is fragmentation and the related estrangement, which occur on various perceptual levels. Calling this work a novel challenges the readers' genre expectations, as "the notebooks" imply a sketch, something unfinished, in progress, something which is yet to become a completed whole. I do not mean to suggest that Rilke's novel is a rough draft of a literary work, rather, it is the writer's intention to present his character's states of mind, recollections, and borderline experiences as they unfold. The achieved effect of the novel is not incidental but intentional.

In his discussion of the German title of the novel and its English translation, Huyssen calls "Die Aufzeichnungen" "disjointed jottings" and stresses that the English "Notebooks" is an imprecise rendering of the German title.[5] The German word *Zeichnung*, a drawing or a sketch, has a visual connotation, which the English "Notebooks" does not have. The German title, according to Huyssen, overcomes the usual separation of the visual from the written: "Dispersal and fragmentation of the text into seventy-one distinct sections of varying length and weight corresponds to this sense of *Aufzeichnungen* at the level of form, just as Malte's key project in Paris, learning how to see, confirms it in the register of subjective consciousness and sensuous perception" (668). It is this visual component, this peculiar type of observation, <u>das Sehenlernen</u>, as Malte calls it, which is so important in his coming to terms with his memories, his urban experiences, as well as with his attempts to become a writer.

Apart from Freud's influence upon Rilke—however indirect such influence might be--it is important to distinguish several other sources of inspiration for this experimental novel. In many scenes throughout the novel, Malte's visual experiments lead him to see beyond the ordinary, as for example when he "observes" the supernatural and the uncanny phenomena. This ability of the protagonist can be traced to Rilke's fascination with Norwegian mysticism, particularly with the works of Jens Peter Jacobsen, Herman Bang, Kierkegaard, and Swedenborg. In fact, around the turn of the century, Scandinavian literature was popular in Europe: the Nordic man was associated with a decadent type, "innen-orientierte Individualisten mit höchst verfeinerten Nerven und Neigung wie Begabung zu Spiritistischem und Übersinnlichem" (MLB, Reclam kommentierte Ausgabe, Manfred Engel 324).[viii] When placed into a proper context, it becomes clear why Rilke chooses a young Dane for the main character of his novel.

Another important source of ideas for the novel was Ellen Key, a Swedish author whom Rilke knew personally and with whom he exchanged a lively correspondence. In Ellen Key's works, such as for example Das Jarhundert des Kindes [The Century of the Child], 1909, a great importance is placed upon childhood as a unique and crucial stage in an individual's development. Hers was a novel perspective upon childhood, which influenced the intellectual discussions of the time: until then childhood either had been neglected, considered unimportant and transient as a phase of development, or children had been treated as miniature adults, with similar motivations and abilities to understand, however not completely developed individuals. With the emergence of ideas like those of Ellen Key's, infants and children began to be perceived as active, thinking individuals,

[viii] inwardly-orientated individualists with highly refined nerves and with an inclination like a gift for the mystical and extrasensory.

differing from adults and having their own rights. In this vein, Freud's ideas about childhood sexuality were not developed in a vacuum, but rather were a part of the emerging cultural interest of the time. In Rilke's novel, Malte's childhood recollections are as important as his present existence in Paris, and for this reason he invariably turns to his past while looking for connections in the externalities of objects and strangers around him in Paris: "Ich habe um meine Kindheit gebeten, und sie ist wiedergekommen, und ich fühle, daß sie immer noch so schwer ist wie damals und daß es nichts genützt hat, älter zu werden" (MLB 58).[ix] Malte's childhood recollections, fears, and attachments are bound with the way he relates to objects and people during his Paris stay; his visions of fragmented objects and bodies, discussed later in the chapter, can be traced back to his childhood experiences of fragmentation.

Yet another important dimension of the novel derives from Rilke's own writings—his letters and poems—which reveal similar interests and evoke parallel motives as the novel. His letters to Lou Andreas-Salomé discuss similar themes of isolation, of shocks from the urban experience of Rilke's Paris stay, his fears and anxieties. For instance, reading his letter dated August 18th 1903, in which Rilke compares his childhood insecurities and feelings of loneliness to his later Paris stay, one realizes how much Rilke's character draws upon the author's own life. Autobiographical and psychological roots of the novel are evident from the following passage of the letter, in which the writer talks about his adolescent experiences of the military school comparing them to similar experiences of his Paris stay:[6]

[ix] I prayed for my childhood to return, and it did, and I feel that it is as difficult as it was then and that it was no use getting older.

> Damals als ich Knabe unter Knaben war, war ich allein unter ihnen; und wie allein war ich jetzt unter diesen Menschen, wie fortwährend verleugnet von allem was mir begegnete; die Wagen fuhren durch mich durch, und die welche eilten, machten keinen Umweg um mich und rannten voll Verachtung über mich hin wie über eine schlechte Stelle in der altes Wasser sich gesammelt hat.[x]

Remarkably, at the very beginning of the novel (in its second fragment), Rilke's fictional character describes a similar experience of the bodily boundary dissolution: "Dass ich es nicht lassen kann, bei offenem Fenster zu schlafen. Elektrischen Bahnen rasen läutend durch meine Stube. Automobile gehen über mich hin. Eine Tür fällt zu" (MLB 7-8).[xi] Clearly, Rilke's character feels as unprotected, alienated, and vulnerable in a big city, with its crowds, its traffic, its noise, and its nervous rhythm, as Rilke did in the urban environment.

While reading Rilke's letters raises the autobiographical dimension of the novel, then his poems, especially those written prior to his work on Die Aufzeichnungen, illustrate to what extent the novel was a continuation of his poetic vision. Rilke's aesthetic was influenced by the works of the artists such as Rodin and Cézanne: indeed, Rilke the poet worked on his text as a painter or a sculptor does, that is from the exactly observed model which he has in front of his eyes. While trying to find in poetry an equivalent to plastic and visual arts, the poet had to learn how to see in a new way—a

[x] At that time when I was a boy among boys, I was alone among them; and how alone was I now among those people, how continually betrayed by everything I came across; cars drove through me, and those in a hurry did not bother driving around me but arrogantly ran me over me, as if running over a pothole full of stagnant water.

[xi] To think that I can't give up the habit of sleeping with the window open. Electric trolleys speed clattering through my room. Cars drive over me. A door slams (Rilke, The Notebooks, 4).

task of his earlier Neue Gedichte [New Poems], as well as his later novel. The new vision of the poet has a lot in common with impressionistic painting: poems relate momentary inner states corresponding to observed objects. On the other hand, Rilke's poetry drew its inspiration from the way a sculptor—and Rodin's art was one of the major inspirations for his poetry—crafts his artistic object. For Rodin, sculpture and art in general must produce an exact representation of the real form so that the object's innermost being can be brought to life. A poem for Rilke is a handiwork, a Kunstding [artwork] which, with the help of rhythm, syntax, and imagery, creates an exact emotional rendition of the real-world object.[7] The ability to see in a new way has little to do with a pure imitation of nature or objects from the real world; rather it erases the boundaries between the inner state of the observer and the existence of the outside object. A natural or a crafted thing as preserved in poetry reveals to the poet-observer its own inner core while at the same time revealing the truth about the observer. Moreover, it is observation which is not guided by the will of the artist, but is, on the contrary, breaking the subject's will and uplifting the observer's identity: the poet allows his emotions to be guided freely by what he sees, rather than directing his own feelings. In the process of this observation, the poet makes no separation between the beautiful and the ugly, all aspects of reality having equal value as they are transformed into an object of art. This aspect of Rilke's art was continued in the novel, as it focuses on the "ugly" dimension of the city life and portrays the sick, the dying, and the outcasts.

The novel has thus many dimensions and multiple sources of inspiration for its themes, among them: Scandinavian literature with its interest in the supernatural, the contemporary interest in childhood as a phase of individual's development, and the

writer's personal and artistic anxieties and aspirations. All these various influences are as important as Freud's ideas, and allow one to understand better out of what cultural climate both Freud's theories and Rilke's novel emerged. Of course, Freud lived and worked in Vienna and Rilke was born in Prague and moved a great deal among various locations in Europe (it is interesting that no Austrian or German city figures in Die Aufzeichnungen); but both thinkers were embedded in a culture in which prevailing ideas travel among disciplines and fields: where the rapid growth of urban centers promoted the rate with which ideas crossed national and disciplinary boundaries. And among the leading ideas of that culture, relevant to this discussion, were mechanistic explanations of living matter, evolutionary thought, and the emerging view that reality might include more than what is perceived through the human sensory apparatus. But before this are discussed, it is necessary to situate Rilke's novel in more detail.

Die Aufzeichnungen can neither be called a modern Bildungsroman, nor a Künstlerroman, but rather a symbolic novel of psychological states: it does not trace character development of a central figure or follow successive stages in his life. Malte begins one of his sketches by saying that "Es ist nichts geschehen" (40), (Nothing has happened) and one senses in his confession a crisis not only of perception, but also of narration; it is the end of the realistic novel of the eighteenth and the nineteenth centuries. Malte's sketches are a montage-novel relegating a causal, chronological narrative to the past: "Dass man erzählte, wirklich erzählte, das muß vor meiner Zeit gewesen sein. Ich habe nie jemanden erzählen hören" (MLB 124).[xii] How can one narrate inner states when

[xii] The days when people knew, really knew, how to tell stories must have been before my time. I never heard one (The Notebooks, 146).

there are no outside equivalents for them? And why had it been possible before to create a coherent narrative flowing out of unfragmented subjectivity?

Indeed, changes in society which was becoming increasingly industrialized and commercialized, with more and more population concentrated in large urban centers--where the individual often felt alienated in the crowd of strangers--as well as new developments in psychology, history, biology, physics, and mathematics, called for rethinking of old assumptions and "learning to see" anew. The concept of the unconscious controlling the psyche, the relativity theory, statistical mechanics, evolutionary biology and historical science rendering mankind as an insignificant event compared to the immensity of geological and cosmological time, all challenged the notions of stable, controllable, man-centered, and predictable world. The object of research in science was no longer nature in itself—that is attempts to discover nature "as she is"-- but nature exposed to man's questioning: natural phenomena were to be observed through perfected equipment, a chosen theoretical stance, as well as through human perceptual apparatus. On the other hand, technological innovations, such photography, new methods of printing, the telephone and phonograph, seemed to some extent to displace older, personal forms of creativity and cultural expression.[8] But while society and sciences were in those senses moving "forward," many artists felt that the new methods and insights were destabilizing their world and putting art itself, which was stuck with the Romantic paradigm, in definite ways out of synch with society. Romanticism, as the cult of the individual, defined the artist as a prophet and a moral leader, whereas the transformed society and the developing theories of individuality made such a definition irrelevant. The transition from the rural agrarian to urban industrial

society affected not only the activities, modes of perception, and the pace of life for many individuals, but also the way literary works were consumed and received: the audience itself was becoming an anonymous collective rather than the privileged few, in other words, art gradually stopped being an elite enterprise. On the other hand, the way individuality was conceived was transformed as well: Freud's idea of the unconscious controlling individual's actions, Mach's formulation of the ego as a mere construct--both of these ideas denying the nineteenth century's premise of human nature based on the intrinsic essence—made the Romantic literary paradigm outdated. It is not known whether Rilke knew the precise nature of scientific developments but there is no denying an awareness of the incoherence of life among many artists.

Among other things, the late nineteenth century was marked by considerable progress in describing physiological bases for various perceptual phenomena. Psychology as a discipline had a status quite different from the way we conceive of it today: it was not a medical but an academic subject at the time taught in departments of philosophy and experimental psychology. Neurology, on the other hand, reduced the work of the mind to electrical currents and to physico-chemical processes. Under this view, certain phenomena of mental life, such as dreams, fantasies, and inner motivations, were considered unimportant because there were no means to measure them, nor was there any modern scientific theoretical framework, through which one might be able to describe them. And what could not be measured--feelings and emotions including--was considered non-existing for science. Freud's work was part of the movement to include emotions, ideas, drives, dreams, and imagination, within the boundaries of science, to develop methods to study them, and to uncover concrete psychical mechanisms common to all of

mankind; hence he presents his breakthrough work Die Traumdeutung (1900) [The Interpretation of Dreams] as a "scientific" treatise and states in the beginning that the author is a not a poet but a natural scientist ("Nicht Poet sondern Naturforscher").[9] All conscious acts, this text implies, have unconscious motives; dreams act as wish fulfillments and in many ways resemble hysterical symptoms; and both, dreams and hysterical symptoms, are symbolic representations of ideas perceived as too dangerous to be accepted into consciousness. No past was ever closed for an individual, according to Freud's theory, and it dictated the hidden motives for people's actions. Importantly, Freud also noticed that the therapist's attempts to get at certain recollections are frequently met with resistance, and that a patient experiences repression, which keeps material from entering consciousness. Repression was one of the greatest of Freud's discoveries, as well as one of the crucial dimensions of Malte's inner life in the novel.

As outlined above, there were several actual sources of Freudian ideas for Rilke, however analyzing their direct influence on his work is perhaps less important than trying to understand an atmosphere out of which such diverse thinkers as Freud and Rilke drew an inspiration for their similar ideas. Models of thought cut across disciplines and fields, affecting that which is seen, as well as that which is overlooked. This chapter thus investigates how Rilke and Freud changed the previously existing ways of observing reality, including observation of inner life, or self-observation, and it focuses on those aspects of their respective visions, which were common to both. These new aspects of observation are relevant to the general argument of this dissertation that observation, as a method of comprehending and interpreting reality, was beginning to be re-conceptualized to include a self-aware observer: in other words, the strict division, as implied by the

empirical tradition, between the observing self and the observed object was beginning to fade, and so was the belief itself that nature can ever be accessible "as she is," apart from the human perceptual apparatus and a theoretical framework.

In developing his theory, Freud departed from the traditional academic setting of a psychological laboratory and began to study mental disorders by clinical observation. Important to mention in this regard is the concept of experience, or die Erfahrung, which both Rilke and Freud made a point to include in their ways of seeing. This chapter attempts to answer the question why observation based on experience was an innovative concept in psychology and literature, and what similarities the visions of the two thinkers had. Notably, Rilke's novel includes, among other themes, learning how to see in a new way, or Sehenlernen; similarly, it was Freud's life-long endeavor to learn how to look beyond the observable physical malfunctions and into the complexities of mental life.[10] The inclusion of die Erfahrung, as opposed to a controlled laboratory setting typical for the academic psychology of the day, meant active observation that demanded a self-conscious participation of the observing person in the act of observation, a process which was radically different from detached observation and comparison implied by empiricism. The success of a psychoanalytic treatment depended as much on the patient's willingness to develop an understanding of his or her problems and on the insights that a patient had, as on the therapist's interpretation. Psychoanalysis is a dialogue—although, it may be argued, an unequal one—of a patient and the analyst, and the patient's experience (his or her feelings, dreams, the unconscious roots of various actions, memories) becomes part of a story created by both. Its storytelling capacity is part of the appeal that psychoanalysis holds for literary authors.

The openness of the novel combined with its lack of thematic cohesion and progressive development of action can be related to the peculiarities of Malte's project of learning to see (Sehenlernen). Peculiar to Malte's vision is his incapacity to see things in their wholeness--instead, he sees body parts, singularities, broken pieces, and fragments without being able to put them together into a unity. Malte's remark, which he makes after his father's death, can be said to characterize his mental state throughout the novel: "Erst muß alles geordnet sein, wiederholte ich mir. *Was* geordnet sein wollte war mir nicht klar" (MLB 134, emphasis is Rilke's).[xiii] Priscilla Shaw makes an interesting point connecting Rilke's range of perception, radically different from that of ordinary individuals, to Malte's experiences in the novel. She observes that for Rilke unity and physical boundedness of objects and the human body could not be automatically taken for granted. Important for Rilke was the ability of art to re-fuse, enclose, and unify fragmentary material into new wholes, which frequently went against the grain of conventional wisdom. [11] This was one of the lessons which Rilke learned from Rodin's sculpture: the unity of the body is not always coincident with the unity of the sculpture as an artistic whole, and similar to that, the aesthetic unity of the novel can be achieved by means other than external structural coherence. Along these lines, it is important to remember that while Rilke is able to unite diverse fragments into an artistic whole of his innovative novel, Malte's endeavor preserves its original features of disconnectedness and estrangement, and after vacillating between various points in time and space, fantasy and reality, the novel concludes with the words "noch nicht" (not yet).

[xiii] First everything had to be put in order, I repeated to myself. What needed to be put in order wasn't clear to me. (The Notebooks, 159).

There have been several attempts in criticism to define distinct patterns of development and structure in the novel. It seems that sometimes such treatments impose deliberately causal relations on the novel marked by fragmentation and indeterminacy. One of such interpretations is offered by Theodore Ziolkowski, who describes the general direction of the novel as a movement from temporality to timelessness, referring to the trajectory of Malte's thought from childhood reminiscences and Paris experiences to his later attempts to find the new ground for his writing in the "cosmic dimension" of his being. Ziolkowski's analysis views the novel as Malte's gradual "progression" towards poetic transcendence without considering the influences of the external reality, or the fact that no such progression is evident from the text of the novel itself.

Yet another critic, Dieter Saalmann, chooses French symbolist poetry as a paradigm for his interpretation, suggesting a form of a symbolist poem as a criterion for the analysis of the novel. Rilke's achievement, according to Saalmann, lies in the creation of a prose work that incorporates the ideas of French Symbolism. The critic's insights are valuable because they stress the importance of fantasy and imagination in the novel, characteristics cherished by Symbolists for their ability to produce analogues between the inner and the outer world. Saalmann treats different objects in the novel as symbols: for instance, a mirror stands for Malte's narcissistic involvement with his inner world; pregnant women, who simultaneously carry a fetus and death in them, stand for artistic productivity, which draws its strength from all aspects of existence; a pencil is a symbol of the artist's symbolic universe, and so on. It is suggested that the solution of Malte's creative crisis might be in striving for the Absolute and in transcending the boundaries of

material world: “Die Entmaterialisierung der Erscheinung verhilft dem Bewußtsein zur freimachenden Transzendenz” (Saalmann 53).[xiv]

It appears that both Ziolkowski’s and Saalmann’s interpretations concentrate on the neo-Romantic features of contemporary art, with its privileging of inner life, individualism, and the idea of poetic transcendence. They fail to take into account, however, the fact that individualism of Rilke’s time was quite different from the traditional Romantic concept of artistic subjectivity as a center for creativity, and was “devoid of all pretense to individuality,” as Jacque Le Rider puts it (48). Mach’s idea of the unrettbares Ich (the unsalvageable I), as articulated by Hermann Bahr, which influenced the artistic community, made the very goal of achieving poetic transcendence or timelessness an impossibility.[12]

There have been several attempts to read Die Aufzeichnungen as a modernist Künstlerroman, a story of a young writer who learns how to overcome the estrangement and moves from purely subjective to objective mode in his writings. Walter Sokel, for instance, sees the novel as governed by “the law of complementariness” (172). Duality that runs through the whole book is most apparent in the contrast between the two families, whose union produced Malte – the paternal Brigges and the maternal Brahes. The individuality and authenticity of existence characteristic of the Brigges contrasts the Brahes’ idealization of the concept of time; the opposition between the two sides of Malte’s lineage corresponds to the opposition of linear time to the simultaneity of all being. In the course of the novel, Sokel states, Malte renounces his false bourgeois pretenses and learns how to treat the “devolution of the self” as a positive experience of self-expansion into the world, while the loss of self-control becomes a liberation.

[xiv] The dematerialization of the phenomenon brings consciousness to transcendence.

This chapter approaches Malte's predicament from a different angle from those critical readings described above. His tendency to view himself as an estranged and lonely individual does not recede towards the end of the novel: this self-view is in a constant tension with his own recognition of fragility and incomprehensibility of his subjectivity. The very concept of the individual identity becomes problematic when one tries to apply it to Malte's character: he thinks of his own self as composed of various elements, some of which are inaccessible to him and not controllable. A closer look at different scenes of fragmentation, in which the novel abounds, will be helpful in understanding Malte's irrecoverable loss of the stable "I." But before I turn to the close-reading of these scenes, it appears useful to trace a similar concept in Freud's works.

The conception of the self as a divided entity, split up against itself, with some parts not immediately accessible to consciousness, is an idea that one also finds in many of Freud's works. The German theorist's concept of creativity as a correction of unsatisfying reality, or wish-fulfillment, is outlined in his essay "Der Dichter und das Phantasieren" ["Creative Writers and Daydreaming"] (1908), where the idea of the fragmented "I" is discussed in relation to creativity. This essay is equally important because in it Freud elaborates his views of the psychological novel, and some of his ideas may appear in a different light when applied to Rilke's novel. In the beginning of his essay, Freud posits two problems which he attempts to throw some light at: the first one being the sources for inspiration of the creative writer, and the second one being why literary works make such a lasting impression upon the reader. Freud searches for an activity that occupies all human beings and that would be analogous to the imaginative work of a creative writer, and, as to be expected, finds it in childhood--to be more

specific, in child's play. In play, a child creates a world of his or her own akin to a creative writer. The elements of the real world, in play or in fiction, are re-arranged in a new, more satisfying way. Freud goes on to state—arguably inaccurately--that "the opposite of play is not what is serious but what is real." [13] Creative writing is akin to play precisely because, like play, it is taken seriously by the writer and the reader alike, and although both activities according to Freud lack reality, they are both invested with emotion allowing excitements and pleasures, which in the real world would be perceived as distressing or impermissible. As a growing individual begins to make concessions to the reality principle, the line between childhood and adulthood is sharply drawn; from this point on, imagination has a limited number of ways to express itself.[14] One of these ways is artistic creation, the others being fantasy, dreams, daydreams, neurotic symptoms, and humor. Imagination is governed by the pleasure principle according to Freud, as people in general in his theory are pleasure-driven creatures (although beyond that there is also a death-drive), the idea influenced by contemporary hedonistic orientation.

How does a child's play turn to an adult's fantasy, one might ask? Freud provides a very specific answer: "Actually, we can never give anything up; we only exchange one thing for another. What appears to be a renunciation is really a formation of substitute or surrogate… The growing child, when he stops playing, gives nothing up but the link with real objects; instead of *playing*, he now *fantasizes*" (Freud 145). The principle of energy conservation is crucial for Freud, being one of the corner-stone ideas which he used to explain all man's actions.[15] His explanation of human behavior was essentially mechanistic: all actions require energy because they are some form of work; human

psychic energy, he believed, would follow the same principles as physical energy. It sought release through work and could not be destroyed, but merely converted. All types of mental activity follow known rules—the rules of energy conservation—and fantasies, play, neurotic symptoms, daydreams, dreams, or creative activity can therefore be studied in a scientific manner. Knowledge of these rules allows Freud, and those theorists who followed his lead, to turn to observation of those sides of mental life which are normally hidden from the therapist. Freud does acknowledge that fantasies, unlike children's play, are difficult to observe: it is because adults normally try to hide them due to their socially impermissible nature. Nonetheless it is possible to trace people's fantasies, for instance through accounts of neurotic patients. Everyone, according to Freud, has concealed wishes that seek release through fantasy. Fantasy, similar to dreams, daydreams, and creative writing, acts as wish fulfillment; if fantasies become over-powerful they may lead to neurosis. Freud thus connects fantasizing with pathology: in his opinion--which on this point appears to be dogmatic--"a happy person never fantasizes, only an unsatisfied one. The motive forces of fantasies are unsatisfied wishes, and every single fantasy is the fulfillment of a wish, a correction of unsatisfying reality" (146). With a characteristic gender bias, Freud distinguishes between two main types of unacceptable wishes: the erotic ones, predominating in young women, and the ambitious ones, typical for men, and similar repressed wishes are equally important in neurosis and in writing.[16]

The following section of Freud's essay has direct parallels with Rilke's novel, evoking its subject matter as well as its genesis. In it, Freud explains that the relation of fantasy to time is of extreme importance, as it "hovers" between three times: an occasion in the present--some current impression--provokes a wish; an earlier experience, when

this wish was fulfilled, is recalled; and then the fantasy is directed to a future situation, in which this wish can be fulfilled once again. It is characteristic that everything in Freud "carries about it traces of its origin" (147-48), no past is ever closed, no future is free of our past. "Thus past, present and future are strung together, as it were, on the thread of a wish that runs through them." This description summarizes Malte's predicament, for his childhood memories and his Paris present are strung together through common themes of fragmentary vision, uncanny experiences, fantasies of bodily boundary dissolution, and the ego loss. Malte's attempts to break into the future are futile, his wishes are only granted in fantasy:

> Aber es wird ein Tag kommen, da meine Hand weit von mir sein wird, und wenn ich sie schreiben heißen werde, wird sie Worte schreiben, die ich nicht meine. Die Zeit der anderen Auslegung wird anbrechen, und es wird kein Wort auf dem anderen bleiben, und jeder Sinn wird die Wolken sich auflösen und wie Wasser niedergehen. Bei aller Furcht bin ich schließlich doch wie einer, der vor etwas Großem steht, und ich erinnere mich, daß es früher oft ähnlich in mir war, eh ich zu schreiben begann. Aber diesmal werde ich geschrieben werden. (47-48)[xv]

Malte fantasizes that his suffering is brought to an end by a moment of transcendence into the type of writing that would achieve the ultimate truth. He hopes for a new language but is unable to make the last step necessary to attain it:

[xv] But the day will come when my hand will be distant, and if I tell it to write, it will write words that are not mine. The time of that other interpretation will dawn, when there shall not be left one word upon another, and every meaning will dissolve like a cloud and fall down like rain. In spite of my fear, I am still like someone standing in the presence of something great, and I remember that I often used to feel this happening inside me when I was about to write. But this time I will be written (Rilke, The Notebooks, 52-53).

> Ich bin ein Eindruck, der sich verwandeln wird [...] Nur ein Schritt, und mein tiefes Elend würde Seligkeit sein. Aber ich kann diesen Schritt nicht tun, ich bin gefallen und kann mich nicht mehr aufheben, weil ich zerbrochen bin. (48)[xvi]

Malte's wish remains merely a fantasy: he is shattered to pieces, like so many objects around him--things that he remembers from his childhood, from his grandfather's house, as well as from the present stay in Paris. He suffers from ego fragmentation, a selfhood without a solid, coherent foundation upon which his writing can be built. As the form of a personal journal might suggest, the distance between the narrating "I" and the narrated "I" would be reduced to a minimum, but the effect of Malte's sketches is the opposite: he observes himself as if he were someone else. He constantly fails to coincide with himself, to emerge as a unified, coherent personality: there is Malte the struggling writer; Malte the reader; Malte trapped in his childhood fears; Malte unable to distinguish what belongs to him and what belongs to the costume he tries on; and Malte in the end as the prodigal son. All these fragments of his personality, as well as the episodes of his life, do not seem to relate to a core, a center, out of which a new type of writing would develop; they are like pieces of a mosaic that do not add up to a total picture.

In "Creative Writers and Daydreaming," Freud refers specifically to contemporary genre of a psychological novel, in which the "hero" is described as if from within:

> The author sits inside his [the hero's] mind, as it were, and looks at the other characters from the outside. The psychological novel in general

[xvi] I am the impression that will transform itself […]. Just one step, and my misery would turn into bliss. But I can't take that step; I have fallen and I can't pick myself up, [because I am shattered] (Rilke, The Notebooks, 53).

> owes its special nature to the inclination of the modern writer to split up his ego, by self-observation, into many part-egos, and, in consequence, to personify the conflicting currents of his own mental life in several heroes. (150)

In Rilke's case, this is true in the sense that the novel's themes are based on the facts of his personal life as well as on the introspection, or self-observation, as Freud calls it. There is only one true character in the novel, Malte, but Freud's argument about the split-up ego may still be applied because his character's self is also fragmented. The "conflicting currents" of Rilke's life are all personified in Malte, and it is well-known that Rilke's identification with his character's struggles was so great that he underwent an acute crisis after the completion of his novel. In his letter to Andreas-Salomé dated December 28, 1911, the poet writes:

> Whether he [Malte], who doubtless *is* in part created from my perils, is destroyed by them, in order to save me, as it were, from destruction, or whether with these journals I have finally gone all the way out into the current that will sweep me away and plunge me over the edge.[…] As if it were only that: but the other one, the one who was destroyed, he somehow used me up, funded the immense expenditure of his destruction with the strengths and materials of my life, there was nothing that was not in his hands, in his heart, he appropriated everything with the intensity of his despair. (The Correspondence 176)

The "conflicting currents" of Rilke's own life thus inspired many themes in the novel: alienation and loneliness, the inability to find a meaningful (in the sense of

practically oriented) place in society, attempts to come to terms with the past, the love to his mother mixed with the fear of abandonment, and, finally, struggles with creativity and writing. Periods of productive work in Rilke's life were frequently followed by stagnation, self-doubt, and disorientation; he never truly felt comfortable being a professional poet, and explored, if only in his letters, a possibility of an "ordinary" bourgeois life with some steadily-paid position. Rilke expresses his desire for a different occupation which would bring him a sense of assurance and security, and this thought runs through his letters written immediately after the completion of Die Aufzeichnungen. But his hopes for a "normal" happiness were just as easily abandoned, for he chose to follow his "angels" and to embark on an uneasy search for adequate aesthetic means for a new modernist vision.

Malte's life is indeed not Rilke's—Malte is a mere persona, a protagonist of the novel--but there are undeniable parallels and similarities between the two paths, such as their search for a new vision, "das Sehenlernen," their suffering from the inability to capture that vision in writing, their feelings of emptiness, their shock from the big city experience, and certain aspects of their childhoods, such as identification with the mother, and the memory of the mother's manipulative play with the gender identity. By creating a character so close to his own experiences, Rilke was perhaps trying to rid himself of his destructive memories, to observe himself in his character, and through him to achieve a therapeutic effect. The result of a finished novel was exactly the opposite, as the passage from Rilke's letter quoted above confirms.

Throughout his life, Rilke's insecurities threatened his creativity; nonetheless, he was able to accomplish a breakthrough into a new type of aesthetic, as for instance in his

invented form of a Dinggedicht, a short poem relating the inner states of a poet in connection with the observed object. Despite the impression, which some of Rilke's letters create, that the poet was only able to work when he felt a wave of inspiration, he continued to work not only quite hard but also at a relatively steady pace, and specifically at being a modernist poet. One of his ideal art-figures was Rodin, and recognizing the parallels between the art of words and the plastic arts, Rilke viewed the poet's work as similar to the sculptor's: visual reality would be rendered into a poetic or, in case of his novel, a prose form. The inventive use of words, or the use of familiar words in a fresh context, and the unusual imagery are used to "sculpt" the writer's vision. For example, the last stanza of "Blaue Hortensie," (1907) reads: "Doch plötzlich scheint das Blau sich zu verneuen/ in einer von den Dolden, und man sieht/ ein rührend Blaues sich vor Grünem freuen." The touching blue and its rejoicing can be understood as an insight into the emotional life of a flower, which is clearly beyond the power of human observation. The last line could then be understood as a voice of the flower itself, which is revealing itself to us, and the goal of the Dinggedicht is realized. The thing suddenly opens its essence to the observer, once we reach beyond our expectations of it. The possibilities of this new vision, which Rilke started exploring in his poetry, were further touched upon in his novel: the writer was interested in new ways of rendering visual reality.

Rilke's self-discipline and devotion to his calling, coupled with his anxieties and moments of self-doubt, produced at times an impression that the center of his personality was split, in fact along the lines that Freud describes in his essay "Der Dichter und das Phantasieren." Andreas-Salomé mentions this type of ego-split in her Freud journal of 1913, and talks about it as if the poet's condition were changed: "The very fact that he no

longer comes apart into two beings, too alien from each other to suffer from each other, is enough to make him suffer from everything that is still not quite organized and realized in himself and yet is part of him and no longer a split-off personality" (The Freud Journal 154). By the time Andreas-Salomé wrote those lines, she was a devoted disciple of Freud's, as well as his good friend, and she tended to look at her relationship with Rilke through the lens of psychoanalysis. Her journal allows a significant insight into the depths of Rilke's personality, and the poet himself accepted her insights into his creative process with gratitude and sensitivity.[17]

Further in the essay, Freud's argument about fantasy connecting the past, the present, and the future, by means of the wish that runs through all three temporalities, is applied further in his essay to a creative process itself:

> A strong experience in the present awakens in the creative writer a memory of an earlier experience (usually belonging to his childhood) from which there now proceeds a wish which finds its fulfillment in the creative work. The work itself exhibits elements of the recent provoking occasion, as well as of the old memory. (151).

The writing of Malte Laurids Brigge's life, so deeply connected with Rilke's own perils, evoked many memories in the poet and left him feeling empty: it is as if the character's destiny connected the writer's past and his present, leaving however only hints of a future fulfillment. In the novel, the burden of Malte's past memories is not lightened at the end, the therapeutic effect of writing and reading is implied but never shown. Rilke confessed in 1911: "It has been my ambition to invest my entire capital in a lost cause; but then again the true values of the investment could only become visible in

the loss; thus for the longest time, I remember, Malte Laurids Brigge seemed to me not so much a downfall as a strange dark ascent into a remote and neglected part of heaven" (The Correspondence 176). A work of art, including the novel under analysis, cannot be reduced to a mere projection of the artist's state of mind. Works of art are not necessarily, or not always, outcomes of a conflict. One should bear in mind the reader's (and the critic's) own emotional response, which might interfere with a detached critical glance. Despite the strong attachment to his character and the crisis that followed the completion of the novel, one should avoid complete identification of Malte and his creator. This is especially true if one takes into consideration the fact that many of Malte's childhood memories are not based on Rilke's life, but are borrowed from Scandinavian novels popular at the time by Jens Peter Jacobsen, Herman Bang, Kierkegaard, and Swedenborg, as mentioned earlier.

In a similar vein, Malte's recollections of his childhood should not be read simply as a contrast to his present condition, the temporal distance between the narrated material and the time of narration is constantly being effaced. Malte is writing his Notebooks in the present—at the time of narration, and each described episode from Malte's past, or his regression into fantasy, is preceded by the present moment, for example: "Ich glaube, ich müßte anfangen, etwas zu arbeiten, jetzt, da ich sehen lerne […]" (19);[xvii] "Ich sitze und lese einen Dichter […]" (35);[xviii] "Wenn ich das jetzt überdenke, kann ich mich wundern, daß ich aus der Welt dieser Fieber doch immer wieder ganz zurückkam […]" (86);[xix] "Ich begreife übrigens jetzt gut, daß man ganz innen in der Brieftasche die

[xvii] I think I should begin go do some work, now that I am learning to see (Rilke, The Notebooks, 19)
[xviii] I am sitting here reading a poet (ibid. 38).
[xix] When I think about it now, I can't help being astonished that I always managed to completely return from the world of these fevers… (ibid. 100).

Beschreibung einer Sterbestunde bei sich trägt durch alle die Jahre […]" (140).[xx] Thinking about the past retrospectively, Malte makes it at the same time a constant part of his present. Thus, the chronological linear temporality is fragmented and then reconstructed in such as way that the traditional distinctions between the past, the present, and the future do not apply, but are, on the other hand, connected in the sense pointed out by Freud.

A similar loss of ordinary temporal categories is a characteristic of Malte's maternal grandfather Count Brahe who does not accept the division of time into the past, present, and future. He can talk about long-deceased people as if they were still present at the dinner table, and he treats the future with the same lack of "respect":

> Die Zeitfolgen spielten durchaus keine Rolle für ihn, der Tod war ein kleiner Zwischenfall, den er vollkommen ignorierte, Personen, die er einmal in seine Erinnerung aufgenommen hatte, existierten, und daran konnte ihr Absterben nicht das geringste ändern. Mehrere Jahre später, nach dem Tode des alten Herrn, erzählte man sich, wie er auch das Zukünftige mit demselben Eigensinn als gegenwärtig empfand. (29-30)[xxi]

This description has affinities with Ernst Mach's idea that time is only a matter of individual perception and does not have the absolute significance outside of it, which will be discussed in Chapter 5. In other words, the questioning of the notion of linear time by science finds a reflection in Rilke's novel where instead of fixed categories one finds a

[xx] Besides, I now understand quite well how someone could carry, all those years, deep inside his wallet, the description of a death hour (ibid. 167).

[xxi] The passing of time had absolutely no meaning for him; death was a minor incident which he completely ignored; people whom he had once installed in his memory continued to exist, and the fact that they had died did not alter this in the least. Several years later, after the old gentleman's death, I heard stories about how, with the same obstinacy, he experienced future events as present (ibid. 31).

more fluid concept of time. The past in the novel refuses to be treated as completed, and this is why the Brahes' house is always haunted. The ghosts also suggest the idea that there is a part of natural reality inaccessible to the living, which includes more than the world of perception.

This concept--that part of the world is beyond people's grasp and control--is similarly evident from the nature of Malte's vision and perception. Malte's perceptions are characterized by two seemingly contradictory qualities: the utmost precision, on the one hand, and his incapacity to see things in their wholeness and integrity, on the other. "Er war ein Dichter und haßte das Ungefähre…" (141), remarks Malte about a French poet and this insight can be applied to Rilke's own artistic aspirations, too.[xxii] This is a novel aspect, which Rilke introduces to the concept of observation in art. The first characteristic of Malte's perception, the precision of his visual experiences, is evident from the passages describing the woman with the lost face:

> Aber die Frau, die Frau: sie war ganz in sich hineingefallen, vornüber in ihre Hände. […] Die Frau erschrak und hob sich aus sich ab, zu schnell, zu heftig, so daß Gesicht in den zwei Händen blieb. […] Mir graute, ein Gesicht von innen zu sehen, aber ich fürchtete mich doch noch viel mehr vor dem bloßem wunden Kopf ohne Gesicht. (9-10)[xxiii]

This scene describes an image of a horrifying exposure of the self that loses its external appearance and autonomy and turns into an unrecognizable void. This "hatred for the

[xxii] He was a poet and hated the approximate… (ibid. 167).
[xxiii] But the woman, the woman: she had completely fallen into herself, forward into her hands. […] The woman sat up, frightened, she pulled out of herself, too quickly, too violently, so that her face was left in her two hands. […] I shuddered to see a face from the inside, but I was much more afraid of that bare flayed head waiting there, faceless (ibid. 7).

approximate" forces Rilke's character to describe a typical gesture from an unusual angle.

Similarly, hands can come alive and act independent of the body as in the episode from Malte's childhood when he drops a crayon under the table. From sitting for a long time on an uncomfortable chair Malte's legs fall asleep and he is unable to distinguish what belongs to the chair and what to himself ("ich wußte nicht, was zu mir und was zum Sessel gehörte" 80).[xxiv] As he is groping under the table he sees his own hand as a separate creature ("wie ein Wassertier" 81), with a will and a mind of its own.[xxv] Suddenly he sees another hand come out of the wall, and in the moment of shock and confusion Malte realizes that one of the two hands must belong to him and is about to enter something horrifying. This scene can be viewed as the breakdown of boundaries between the body and the world of objects, leaving neither of the two previously separate entities integral.

It is interesting to analyze the above scene, describing the autonomy, the independent existence of hands, in light of Rilke's fascination with Rodin's art. The hands sculpted by Rodin can express emotions and personality types.

[xxiv] I didn't know what belonged to me and what was the chair's (ibid. 93).
[xxv] like some strange crab (ibid. 94).

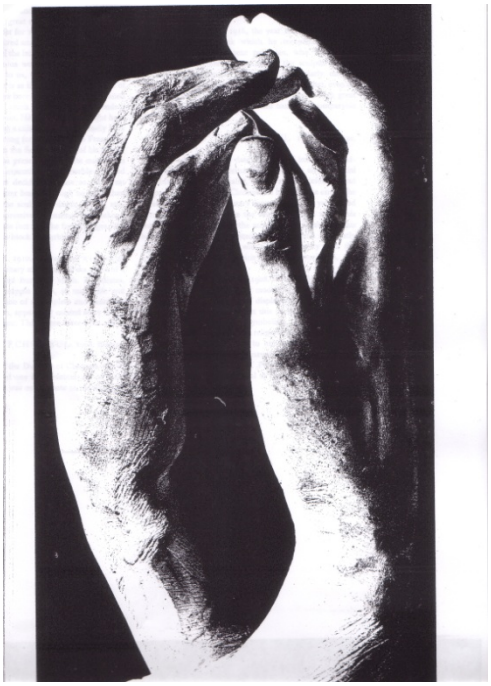

Fig. 3. Rodin. “The Cathedral,” 1908.

They are in fact so eloquent and beautiful that the viewer feels no inclination to imagine the rest. Like Rilke’s famous poem “Torso Apollos,” Rodin’s hands are partial figures that are the carriers of beauty and meaning. In the episode from Malte’s childhood described above one senses a tribute Rilke pays to Rodin’s sculptures of hands, of which he modeled hundreds: Rilke, in fact, spent some time in Rodin’s workshop while writing a monograph on the sculptor and observed him at work, while also becoming familiar with his artistic philosophy. Fascinated by the possibility of discovering new “worlds” in separate things, Rilke incorporates the idea of disintegration and re-integration of the body into his novel (Kleinbard 35). The scenes described above are not just hallucinations of a troubled mind but can be treated as accurate, precise descriptions but with a slightly different focus, angle, or range of vision.

The second characteristic of Malte's vision-- his inability to see objects and people in their unity--can be observed in the following scene in the hospital:

> Und viele Verbände gab es. Verbände, die den ganzen Kopf Schichte um Schichte umgezogen, bis nur noch ein einziges Auge da war, das niemandem mehr gehörte. […] Verbände, die man geöffnet hatte und in denen nun, wie in einem schmutzigen Bett, eine Hand lag, die keine mehr war; und ein eingebundenes Bein, das aus der Reihe herausstand, groß wie ein ganzer Mensch. (51)[xxvi]

Malte sees limbs, eyes, and mouths, instead of whole people, and earlier in the novel when he describes Brahe's house, he never sees the whole room, its corners and ceilings are always concealed by the darkness. These experiences are a source of a tremendous anxiety for the character, and similar visions of fragmentation occur in his childhood as well as during his stay in Paris.

Learning to see anew for Malte, and for Rilke, is a way to free oneself of conventional aesthetics by accepting the fact that ugliness is as much part of our world as beauty. All aspects of reality are equally important, the casual and the extraordinary, the everyday and the supernatural, the ugly and the beautiful. This novel role of observation can be compared to the role Freud ascribed to observation in his theories of psychoanalysis, as well as to the psychoanalyst's formulation that the difference between neurosis and health is not a hard-and-fast one, as revealed, for instance, by the dreams: for the dreams of the neurotics are remarkably similar to the dreams of healthy

[xxvi] And there were many bandages. Bandages wrapped around a whole head, layer by layer, until just a single eye remained that no longer belonged to anyone. […] Bandages that had been opened and in which, as if in a filthy bed, a hand lay now, that was no longer a hand; and a bandaged leg that stuck out of the line on the bench, as large as a whole man. (ibid. 56-57).

individuals. During his wanderings about Paris, the protagonist of Rilke's novel encounters various people, whom he calls the outcasts (or die Fortgeworfenen): they are the homeless, the crippled man, the older woman, the dying in the hospitals, the patients waiting for the electroshock therapy, the girls who left their parents' homes searching for a better life in the big city, in other words all those uprooted and alienated individuals whose ties with the past and with the former stable social order are broken. Malte's sense of identification with the outcasts is so great that at times it is as if all physical and psychological boundaries between him and those other ones, were dissolved, leaving him with no steady sense of who he is: he is constantly torn between emphasizing that he comes from a stable, aristocratic past, on the one hand, and his inability to separate himself from "the outcasts"; thus the boundaries between sickness and health, the beautiful and the repulsive, are not steady and clear-cut, either in Rilke's novel or in Freud's writings.

One can speculate that Freud's theories were given impetus by the fact that he looked beyond the observable physical symptoms.[18] In his practice, he came into contact with two groups of patients: individuals who suffered damage of a nervous system as a result of a trauma or disease, and "neurotics" who displayed similar symptoms but without any visible or known cause. The prevailing model of Freud's time was rooted in the belief that physical symptoms had to have a known or knowable cause, and those patients who had a "real" foundation for their symptoms were given preferential treatment. In contrast to most practitioners, Freud sought not to dismiss the other group of patients—those with no apparent physical course of their suffering--as unworthy of interest, but to explain their behavior. This was a novel role Freud ascribed to

observation: he looked beyond the observable physical malfunctions trying to find methods of treatment for such patients. Moreover, the patient and the therapist were to engage in the treatment together--to cooperate in creating the patient's life-history, although not on equal terms: the patient, assuming a restful position on a couch, was instructed to "observe" his or her psychological states and to communicate whatever passes through is or her mind impartially, no matter how undesirable the thought may appear to the patient. Typical treatment for hysterics at the time, besides hypnosis, was considered to be electrotherapy, also mentioned in Die Aufzeichnungen: "Der Arzt hat mich nicht verstanden. Nichts. Es war ja auch schwer zu erzählen. Man wollte einen Versuch machen mit dem Elektrisieren. Gut. Ich bekam einen Zettel: ich sollte um ein Uhr in der Salpêtrière sein" (Rilke 49).[xxvii] Malte in the novel suffers various physical symptoms—fever, fatigue, insomnia, delusions of fragmentation and dissolution of bodily boundaries—without any apparent nerve damage, similar to Freud's patients.

Freud, through his studies of hypnosis, arrived at the conclusion that hysterical symptoms could be caused by unpleasant forgotten events, usually originating in one's childhood.[19] He invented a new method of free association, freier Einfall (as opposed to hypnosis) in order to uncover his patients' repressed memories and wishes, and he regarded his method as a form of observation, which is evident from the following advice he gives to other practitioners: "Act as though for instance, you were a traveler sitting next to the window of a railway carriage and describing to someone inside the carriage the changing views that you see outside."[20] The spectacle of a world from a window of a railroad car is an important idea, perhaps even an archetypical image, for Modernity.[21]

[xxvii] The doctor didn't understand me. At all. And certainly my case was difficult to describe. They wanted to try electrotherapy. Good. I was given a slip of paper: at one o'clock I was supposed to be at Salpêtrière (ibid. 54).

Addressing a similar idea of a constantly changeable reality, Rilke's character confesses in one of his fragments that "Ich bin immer unterwegs gewesen. Weiß der Himmel in wie vielen Städten, Stadteilen, Friedhofen, Brücken und Durchgängen" (41).[xxviii] Malte's confession implies constant movement, lack of stability, and observation of the ever changing scenery. The idea that what one sees depends on where one is, or on the position of the observer and his or her awareness of the act of observation, meant a step beyond positivism in science, and a shift toward multiple perspectives and reflexivity in literature. Noting and recording an event, be it external, psychological or even imaginary, is a method of both science and literature. Setting out to conquer "the infernal regions" of the unconscious, Freud discovered a vast unobservable part within the human mind: dreams have their manifest and latent content (which can be scientifically interpreted), observable symptoms hide the repressed past, and neurosis conceals the path of the earlier stages of humanity.[22] Reality, as depicted by the psychoanalytic science, was no longer limited to what man could perceive through his senses alone.

Hysterical symptoms, such as Malte's, might be caused by unpleasant forgotten events or repressed wishes. And indeed, while waiting for his electrotherapy treatment at the hospital, and observing the disturbing sight of other patients, most of whom Malte characterizes as "die Fortgeworfenen" (the outcasts) he feels that his deepest, long-forgotten childhood fears are coming back. [23] As he hears the screams of a terrified child in the clinic, he thinks of the moments of terror from his own childhood "Das, was mir das erste, tiefe Entsetzen eingejagt hatte, wenn ich als Kind im Fiber lag: das Große"

[xxviii] I have been walking and walking. Heaven knows how many towns, districts, cemeteries, bridges, and entryways I passed (ibid. 44-45).

(55).[xxix] This fear, as many of Malte's anxieties, has no name (in a different fragment Malte calls it "Das Unsagbare"), similar to Freudian concept of the repressed material that is seeking but cannot find expression within consciousness.

There is a passage in the second version of the novel's opening, which Rilke chose not to include in the final draft, that contains a similar idea about childhood and the way it is connected with the rest of Malte's life. Malte narrates some scenes from his childhood to a Parisian acquaintance: "…es war mir, als wäre in ihr [in einer Begebenheit meiner Kindheit] der Schlüssel gewesen für alle ferneren Türe meines Lebens, das Zauberwort für meine verschlossenen Berge, das goldene Horn, auf dessen Ruf hin immer Hülfe kommt" (MLB 219).[xxx] In this passage, a seemingly unimportant childhood event is described as a key to Malte's life, according to his own confession, as a magic word, and as a golden horn; the reader finds here a combination of Romantic symbolism and ideas about individual's childhood discussed by his contemporaries.[24] Childhood as the key, the answer—or at least one of them--to adult struggles is a theme common for Freud's theory and Rilke's novel.

Despite many similarities between Freudian concepts and various motifs in the novel, one should not fully identify Malte's symptoms with hysterics of the Freudian age: Malte's is not simply a crisis of nerves but, more broadly, a crisis of perception. In the novel, one observes fragmentation of objects, buildings, and bodily boundaries, as well as dissolution of former societal units and systems of belief. Malte is a character unattached to anything or anyone, he is without a family and friends, without a home or possessions.

[xxix] What has filled me with my first, deep horror, when I was a child and lay in bed with a fever: the Big Thing (ibid. 61).

[xxx] It seemed to me that in it [in a childhood incident] would be found the key for all the remote doors of my life, the magic spell to lay open my sealed-off mountains, a golden horn at whose peal help always comes.

His Parisian experiences are disorienting because he is in a strange place, and in addition to that he observes that all social classes are mixed up in a big city. Malte's childhood, as well as his current sensibility, are essentially un-urban, which is evident from the pages of his notebooks. He is neither a man-of-society, nor a *flâneur*, but an individual who is alone by choice, who is afraid to be attached and loved. Malte's aristocratic origin is important to him and remains one of his few defenses against the anonymous crowd and the outcasts: "Obwohl ich arm bin. Obwohl mein Anzug, den ich täglich trage, anfängt, gewisse Stellen zu bekommen, obwohl gegen meine Schuhe sich das und jenes einwenden ließe. Zwar mein Kragen ist rein, meine Wäsche auch..." (MLB 35)[xxxi] Malte's hand, we find out, is „aus den guten Kreisen, eine Hand, die vier- bis fünfmal täglich gewaschen wird.. Ja, es ist nichts hinter den Nägeln, der Schreibfinger ist ohne Tinte, und besonders die Gelenke sind tadellos" (MLB 36).[xxxii] Malte clings desperately to the external signs of his once secure past trying to uncover the continuity with his present-day condition; he is, however, unable to find connections in his present fragmentary perceptions and therefore cannot integrate them into a wholeness of experience.

In Paris Malte is constantly bothered by the gazes of the outcasts: "Die sehen mich an and wissen es. Die wissen, daß ich eigentlich zu ihnen gehöre, daß ich nur ein bißchen eine Komödie spiele" (36).[xxxiii] As Andreas Huyssen remarks in his essay, Malte's learning how to see in a new way is constantly spoiled by the fact that he is being

[xxxi] Even though I am poor. Even though the jacket I wear every day has begun to get threadbare in certain spots, even though my shoes are not entirely beyond criticism. True, my collar is clean, my underwear too… (The Notebooks, 38).
[xxxii] … a genteel hand, a hand that is washed four to five times a day. There is no dirt under the nails, the index finger isn't ink-stained, and the wrists especially are irreproachable (ibid. 39).
[xxxiii] They look at me and know. They know that in reality I am one of them, that I'm only acting (ibid. 39).

seeing by the strangers, „an object of the gaze rather than the privileged subject“ (Huyssen 130). Rilke's modernist novel is a testament to the modern subject's uneasiness at the realization that there is no purity of vision, as was once considered possible by empiricists, and that the subject-object dichotomy is ultimately unbalanced.

The protagonist's life crisis is about learning to see anew, this endeavor being intimately connected with his attempts at writing. Malte aspires to be a poet; however, in order to be a good poet, he realizes, one needs to see the world, to accumulate enough experiences, to forget them, to re-discover them anew, and then turn memories of them into his inner universe where they become an inseparable part of his self. In one of the key passages of the novel, Malte states: "Denn Verse sind nicht, wie die Leute meinen Gefühle (die hat man früh genug),--es sind Erfahrungen“ (MLB 20).[xxxiv] This mistrust of the emotional universe, which was previously a paradigm for Romantic poetry, is to be replaced by the re-worked impressions of the external world itself. And when perceptions are fused anew by a poetic inspiration, only then they become a new unity in poetry. This project of re-grounding poetry is Malte's challenge, as well as Rilke's, and runs through his whole art. Rilke's artistic quest was to achieve what he called Weltinnenraum, an experience of identity of inner and outer worlds.

While Rilke's novel was influenced by the contemporary intellectual atmosphere with its leading ideas about the unconscious, about the importance of past memories, and the role of childhood in person's life, Freud's theories, in turn, were strongly influenced by fictional literature. One can talk in this context about the crosscurrents of ideas, for ideas and their metaphorical expressions travel freely from one domain into another, to be

[xxxiv] For poems are not, as people think, simply emotions (one has emotions early enough)—they are experiences (The Notebooks 19).

absorbed by scientists and non-scientists alike, and to be discussed in literary works. It is important to stress that with the rise and expansion of large urban centers, with their cafes, conferences, exhibitions, periodicals, and public lectures, the rate with which ideas were exchanged—geographically, or between various areas of inquiry—greatly increased. Freud's famous confession was that the poets and philosophers had discovered the unconscious before him, and he only invented the scientific methods to study it. In his opinion, poets and scientists can come to similar ideas from different directions, in other words, literature and psychoanalysis draw from a similar source. But while the analyst focuses consciously on the laws of the psyche, the poet allows the free reign of his or her own unconscious flow of thoughts, and both rely heavily on free association. Freud's major writings and many of his case studies approach fictional narratives, and at the end of his career in 1930 the scientist received the prestigious Frankfurt Goethe-prize, which is usually given for high literary achievements. He was never awarded the Nobel Prize for his scientific contributions, although several attempts at nomination were made.

In order to characterize Freud's attitude towards writers and poets, one probably has to resort to the word "ambivalent": admiring them on the one hand for their insights (the detailed description of mental process one finds in imaginative works is most similar to psychoanalysis, according to Freud), and calling them childish day-dreamers and akin to neurotics, on the other hand (as he does in "Creative Writers and Daydreaming" discussed above). In any case, the problem of creativity, its source and its peculiar power on people's minds, interested Freud throughout his career. He has not developed a complete theory of creativity, but made references to artistic achievements in many of his works. In his 1910 essay on Leonardo da Vinci, his approach centers in the experience of

the individual artist, discovering possible, repressions, complexes, and other influences of artist's life on his work. It is assumed in Freud's writings that works of art are outcomes of a conflict and that artwork sheds light on the artist's own hidden anxieties and conflicts. In "Creative Writers and Daydreaming" discussed above, Freud states that "His Majesty Ego" is the true hero of any daydream and any story alike, meaning that the writer's unfulfilled wishes are realized in his character and that the writer's anxieties find their expression in the character's. A piece of creative writing becomes a substitute of what once was the play of childhood—a correction of unsatisfying reality. Writers, the essay implies, occupy a place half-way between neurotics, who feel compelled to reveal their fantasies, and normal adults, who hide them. As for the second problem that Freud posits in the beginning of his essay--the reasons for the effect of literature on the reader—they lie in the fact that the writer offers us a great aesthetic pleasure, and through experiencing our innermost fantasies (without shame because they are not "ours" but the character's) we achieve liberation of tensions in our minds.

Both Freud's essay and Rilke's novel deal with the problems of reading, writing, and the recovery of the individual's past. Even though his character Malte does not manage to find a new vision and to become the kind of writer he aspires to be, at least within the pages of the novel, Rilke's vision of a new prose style adds up, on the other hand, to a coherent aesthetic whole, which, among other things, allows the contemporary reader to experience a heightened aesthetic pleasure. There is real enjoyment to be found in reading the following lines, whether or not they contain a concealed wish: "Ach, wie gut ist es doch, unter lesenden Menschen zu sein. Warum sind sie nicht immer so?"

(35).[xxxv] One may speculate that it was Rilke's feeling of guilt through being unable to find any other occupation in life in accord with his parents' plans for him, that speaks here, and that Rilke, through Malte, finally feels at home among people who read. The difference is that Malte's attempts to become a writer fail, even though his reading experiences as described in the novel are rich and diverse, while Rilke, despite his insecurities and ailments, manages to develop the successful career of a poet and a writer, one that reverberates with the present. As indicated earlier in this chapter, Malte remains a character, an imagined persona, and not the real one, however similar his anxieties are to Rilke's.

Rilke's novel contains features of a "case study"--a genre emerging in psychology with Freud's famous case studies--allowing the analysis of an individual's specific problems in the current context of his or her life, usually over a relatively short period of time. In this respect, it is important to keep in mind that the final version of the novel is that which allows the reader the most intense focus on Malte's experience. Previous drafts had maintained a narrative frame, in which Malte tells his story to an acquaintance. After the elimination of the framing passages, the novel turns into a window on Malte's life in Paris without any predictable outcome indicating his future destiny, and no outside commentary on his present life. Similar to a case-study in psychoanalysis or in personality psychology, the novel now becomes a study of an individual in a complex situation, over a relatively short period of time, if one specifically takes into account Malte's actual time in Paris. The ultimate subject matter of both, the case study and the novel, is human beings, and the value of both is that they deal with an individual case in its actual context. Due to the arbitrariness of boundaries (what factors from person's life

[xxxv] Ah, how pleasant it is to be among people who are reading. Why aren't they always like this? (ibid. 38).

should be taken into account, and how long should a person be observed) and the lack of general agreement over content or procedure (whose account of individual's difficulties is most reliable and what specific methodology should be used to analyze it), the case-study method is not as popular in this age of quantitative methods as it was in Freud's day.

Malte's "case," like Freud's famous cases, deals with a short, self-contained segment of a person's life. This is often a critical or formative time, and in Malte's notes the crisis is announced at the start: "Ich lerne sehen." Unlike the novel, actual case-studies in psychology must be studied retrospectively, and with a view to providing some commentary about the causes of their problems, so as to indicate lines of recovery. Case studies frequently read like stories, and the question arises how does one form of storytelling differ from the other? Moreover, case history is not just a description of the patient's illness but also a story of a therapeutic encounter, which is a story as much about a therapist as about a patient.[25] Such understanding of a case study is parallel to the reading of Rilke's novel offered in this chapter: it is as much about Malte's crisis as about Rilke's own fears, although full identification of the writer with his character is neither useful, nor possible.

In many cases, narrative accounts provided in case studies can reveal an awareness of their problematic nature: Freud, for instance, is clear about distinguishing his own narratives in his case histories from the fiction of novelists. As is suggested by his treatment of writers as childish, neurotic, and refusing to live in the "real" world in his essay "The Creative Writers and Daydreaming," a competent psychoanalytic account ought to offer, a scientific interpretation of the patient's struggles. When creating a

coherent story, writers resort to simplification and abstraction, techniques considered by Freud unacceptable in a scientist's analytical model of the psyche. At the same time, imaginative literature is admittedly of significance to Freud: he borrows his key-terms from it, takes it as a model of his detailed description of mental processes, and dedicates some of his writings to its perpetuation. The scientist, in providing his case histories, is expected to remain an objective, analytical, and therefore a superior, writer, whereas the storyteller, or imaginative writer, may freely employ language so concrete and personal that it rejects any distance at all between certain characters and their writer-creators. In addressing the popularity of the genre of case history in the period under discussion, Micale writes that therapists produced what may be called a "psychiatric Bildungsroman," or a story of an ever-changing personality over time (6). [26] He goes on to assert that "during the late nineteenth and early twentieth centuries Western psychiatry's subject of study, method of inquiry, and case-historical style became much more "literary" and narrative" (6-7). This new psychological genre provides new ways of reading a literary text, which is what this chapter attempted to do.

At the end of Rilke's novel, Malte remains alienated and lonely by choice and, at the same time, troubled by his own estrangement, as evident from Rilke's re-workings of the Biblical parable of the prodigal son, described as someone who feared to be loved and who struggled to preserve his fragile selfhood by remaining lonely. Likewise, the image of the troubadours who are afraid to be heard, which appears in the final paragraph, might be taken to stand for the self-perceived role of a poet in the modern world. The sense of futility this image evokes is Kafkaesque, and it is suggestive of the contemporary to Rilke's situation: a struggling writer, such as Malte, is depicted as a person who is unable

to write, who is unsure how to become a great poet, and who perceives himself as not mature, integrated, fitting in, and experienced enough to begin to write, partly because the problems described in the novel are political and social, rather than personal, and partly because of the artist's narcissistic preoccupation with his own inner world. The novel's achievement remains in its ability to depict with a great level of precision Malte's mental processes, as well as in its articulation of Malte's crisis--also a typical situation for many contemporary thinkers--as lying beyond the individual's capacity of settlement.

Nonetheless, the task that Malte sets out to achieve in the beginning of his notebooks, "Ich lerne sehen" [I am learning to see], allows him and the readers, a number of important insights. For one, learning to observe his own self, the character discovers a vast, unknown part where his fears, memories, and affections reign and control his life. This idea, as the chapter attempted to show, has undeniable parallels with Freud's theories of the unconscious mechanisms controlling many aspects of our conscious lives. Another insight of Rilke's character, is that observing others does not occur in isolation, as Malte frequently, and to his own discomfort, finds himself watched by others. And, finally, there is a novel and interesting connection that the novel raises between observing others, observing oneself, and storytelling, on the one hand, and ideas familiar to us from psychoanalysis—the unconscious, repression, and case study method—on the other.

Chapter Four

The Concept of Space-time as Dependent on the Observer in Thomas Mann's Der Zauberberg and in Einstein's Theory of Relativity

> Der Raum … bewährt die Kräfte, die man gewöhnlich der Zeit vorbehalten glaubt.
> *The Magic Mountain*, Thomas Mann[i]

> A certain type of superior person is fond of asserting that 'everything is relative.' This is, of course, nonsense, because, if *everything* were relative, there would be nothing for it to be relative to. However, without falling into metaphysical absurdities it is possible to maintain that everything in the physical world is relative to an observer.
> *The ABC of Relativity*, Bertrand Russell [1]

In his Princeton speech in 1939, Thomas Mann called Der Zauberberg [The Magic Mountain], the novel preoccupied with time:

> der Zeitroman im doppelten Sinn: einmal historisch, in dem er das innere Bild einer Epoche, der europäischen Vorkriegszeit, zu entwerfen versucht, dann aber, weil die reine Zeit selbst sein Gegenstand ist, den er nicht nur als die Erfahrung seines Heldes, sondern auch in durch sich selbst behandelt. [ii]

This concept of „pure time" is generally interpreted in the relevant criticism as within the framework of the philosophical tradition, with which Mann was well familiar in the works of Nietzsche, Kant, and Schoppenhauer. Despite the fact that Mann's own work unmistakably evokes certain aspects of Einstein's special relativity theory, the connection between the novel's ideas and the actual physical discoveries of his time remains a less

---

[i] Space […] proves to have powers normally ascribed to time alone. (TMM 4).

[ii] A novel about time in a double sense: first of all, historically, because it attempts to sketch a picture of an epoch in Europe—the pre-war period; and second of all, because its subject matter is pure time, which the novel treats not only through its hero's experience, but also through its formal aspects. (Thomas Mann, "Einführung in den 'Zauberberg': Für Studenten der Universität Princeton," Gesammelte Werke in Dreizehn Bänden. V. XI, Reden und Aufsätze, [Frankfurt: Fischer, 1974], 611-12.)

explored area in the critical literature. In fact, however, Mann's novel integrates Einstein's ideas in several different ways, thematically, as well as in terms of its structure: "Das Buch ist selbst das, wovon es erzählt" (Mann, "Einführung," 612).[iii]

Along these new lines, this chapter will take up the discussion of the problem of observation already begun in previous chapters: the insight that observation of an external reality was not possible without including the self-aware observer was simultaneously spreading through several domains of thought and changing the physical picture of the world. Einstein's insight that space-time was dependent on the position and movement of the observer is reflected in some of the features of Mann's novel Der Zauberberg; in what follows I wish to discuss how this idea affected themes, leitmotifs, and the structure of his novel without trying to reduce its literary aspects to these influences alone. The novel evokes certain correspondences between its protagonist's perceptions and reflections and what an imaginary observer might see traveling at various relative speeds. In other words, Einstein's famous Gedankenexperimente (thought experiments), which were crucial to the formulation of his theories and which he also used to make his concepts accessible to the general public, resonate in Mann's novel and must be further explored. For much like Einstein's well-known thought experiments with two trains traveling at different speeds or another one, in which the first observer is placed inside a moving train and the second observer is outside on a platform, Mann's novel opens with the main character on board a train and with the narrator's reflections about the nature of space and time.[2]

The scientific backdrop as well as the background of Der Zauberberg, along with its obsession with the theme of time, has long been noted in criticism. On the other hand, most such readings omit references to what physical science has to say about the concept

[iii] The book itself is that which it describes.

of time. Critical readings that investigate the connection between the findings of physics and the issues raised in the novel also seem to do so without specific reference to Einstein's theory of relativity.

An exception is Rudi Prusok's 1973 essay "Science in Mann's Zauberberg: The Concept of Space," in which the author focuses mostly on the question of Einsteinian space, as its title suggests. The underlying assumption of the essay--that Mann uses scientific terms to make old concepts more meaningful--is flawed, because the "old concepts" themselves were gradually changing with each new discovery about the nature of the universe and of man. In fact, the opposite was true: that myth and symbol are treated in Mann's novel with satire and humor, which strips them of their former significance and makes their newly ascribed meaning less solemn.[3] In addition, Prusok suggests that the new ideas introduced by science are typically reflected in the arts--an idea which excludes any crosscurrents between the two domains (of science and literature) and any possibility of simultaneous rise of the new concepts. While the critic makes a well-developed and useful connection between Einstein's concept of space-time and a corresponding concept in Mann's novel, on the other hand he asserts inaccurately that man himself is governed by the same laws as all other matter in the framework of the scientific concept of space-time (54). It is important to note that man is not governed by the same laws as physical objects in Einstein's theory because man, in ordinary life at least, is not moving at relativistic speeds, nor do the same forces affect him as are found in the world of subatomic particles. Prusok proceeds by focusing on the concept of space, rather than time, and explores it in relation to technological novelties described in the novel, Dr. Behren's portrait of Clawdia Chauchat, and Castorp's research. The value of

Prusok's article and its relevance to the broad theme of this study is in the way he interprets Mann's novel as standing in the way of the recently (recent to the time of Prusok's article) published gap between the sciences and the humanities.

The more recent Carsten Könneker's "Raum der Zeitlosigkeit: Thomas Mann's Zauberberg und die Relativitätstheorie" (The Space of Timelessness: Thomas Mann's Magic Mountain and the Theory of Relativity) (2001) reads Mann's novel in terms of the famous thought experiment with the twins—or the twins paradox—and compares various time measurements as observed in different reference frames in the novel. In a manner perhaps too literal, the author considers Joachim's frame of reference in the beginning of the novel to be at rest, and that of Castorp's moving, and then proceeds by comparing the results with the thought experiments made possible within the framework of relativity. Besides exploring this parallel concept of time dilation in the novel and in Einstein's theory of time, this article helps to recognize the extent to which Mann's work was a product of contemporary discussions about the nature of time and space, as reflected in newspapers and magazines of that period. It specifically mentions Die Süddeutsche Zeitung and Der Neue Wienere Tagblatt, as examples of publications that printed articles discussing Einstein's ideas and their consequences for our understanding of time and space. Concerns of this study—the concept of space-time as dependent of the observer--are thus in part addressed by studies like Prusok's and Könneker's.

Sara Danius' treatment of technology in Mann's novel, on the other hand, focuses on another dimension of his work also relevant to the problem of observation. In her "Novel Visions and the Crisis of Culture: Visual Technology, Modernism, and Death in The Magic Mountain" (2000), Danius explores the connection between optics, new

technology, and esthetics, on the one hand, and the resulting new definition of the observer, on the other: “The modernist period signifies the reinvention of the observer, now empirical, embodied, and particular, which helps explain why vision loses its legitimacy as a philosophical metaphor and epistemological category” (187). As a result of studying empirically the laws of physiological vision in the nineteenth century, seeing was no longer necessarily associated with knowing, because the human eye came to be perceived as embedded in the physical and anatomical functioning of the empirical body. In other words, vision stops being regarded as a means of objective knowledge and becomes itself an object of knowledge in optics. Experiments in peripheral vision, binocular seeing, retinal afterimages not only helped to explore physiology of vision but also contributed to development of technological gadgets which became part of the popular culture. The main protagonist of the novel, Hans Castorp, is shown to inhabit an uncomfortable space between the subject observing his surroundings and the observed object of the medical, scrutinizing gaze of the X-ray machine, as well as an object of idle observations of other patients in the sanatorium. Although the main focus of this chapter is the connection between Mann’s novel and Einstein’s ideas of space-time, Danius’s article is relevant because it addresses the changed status of the “objective” observer as result of contemporary technological inventions.

Another essay “Literature and the Discourse of Science: The Paradigm of Thomas Mann’s The Magic Mountain” (1985) by Valerie Greenberg explores common features of literature and science and reads Mann’s novel as paradigmatic for the ways a work of art can integrate the allegedly alien discourse of science. This study is useful in adopting the underlying notion that it is not necessary to prove the direct connection between scientific

concepts and Mann's novel, because ideas, which are in the air, exert their influence without being consciously adopted. Art and modern science connect at the point of the unanswered, or unanswerable, questions, the fundamental mysteries of the universe and of life. Such approach is essential as it helps to gain a fuller understanding of fictional themes in Mann's novel.

Specifically, the concept of time is explored in Richard Theiberger's Der Begriff der Zeit bei Thomas Mann (The Concept of Time in Mann's Works) (1952), where the author analyses Der Zauberberg and the Joseph saga, and links the two works to Bergsons' philosophy of time. The double nature of time is emphasized by both thinkers: its surface aspect, and its inner character, which is not measured by the clock but can be reached by intuition (as noted above, such understanding of time is also found in Proust). Regrettably, there are no specific references in the book to Einstein's theories of space-time.

Among the dozens of critical essays and books written on Mann's work, these studies are apparently the only ones dealing directly with its relation to science, technology, and the problem of time. My own reading of the parallels between Mann's novel and concepts derived from Einstein's theory focuses on the concept of space-time as it relates to observation and adds the aspect of the novel's structure, as well as the relevance of technological inventions, to the problem of time.

In the beginning of the novel Hans Castorp is struck by the unusual landscape he sees on his journey into the mountains, which separates him from his everyday world by several days, and it is not only time, but also space which gives birth to a feeling of "weightlessness"—or of being separated from everything familiar. Dark tunnels, narrow

passes, deep ravines, vast chasms, curves, phantasmagoric Alpine peaks, the thin mountain air—all of which the hero observes and experiences from the window of a moving train, bewilder not only his sense of direction—at times his ascent sounds more like a descent into dark regions--but also confuse his visual perspective, until he is unsure how long he has been traveling and in what direction. Remarkably, while looking out the window of a train car Castorp imagines that if he were up at his high-mountain destination already (that is if his journey were at its end) he would not know how peculiar and unusual the surrounding conditions were. Or, put differently, once the observer is no longer moving, but stationary, he cannot tell the difference between his familiar, every-day environment and the new, changed conditions, the idea that is parallel to Einstein's statement about the equally valid status of all systems of reference.

In the Foreword to the novel, the self-conscience narrator announces that while the story we are about to hear is old, it does not owe its pastness (Vergangensein) solely to time. It is old in relation to a specific event in history, which itself was a turning point and a rift: the story is old because its events take place before the First World War. Furthermore, it is old because, again according to the narrator, it resembles a fairy tale, that cannot be dated and that therefore has about it an air of timelessness. The novel's opening chapter thus picks up on a leitmotif of time, connects it with space in a passage that echoes Einstein's own formulations and suspends the reader's expected relations of time and space:

> Der Raum, der sich drehend und fliehend zwischen ihn und seine Pflanzstätte wälzt, bewährt die Kräfte, die man gewöhnlich der Zeit vorbehalten glaubt. Von Stunde zu Stunde stellt er innere Veränderungen

her, die den von ihr bewirkten sehr ähnlich sind, aber sie in gewisser Weise übertreffen. Gleich ihr erzeugt er Vergessen; er tut es aber, indem er die Person des Menschen aus ihren Beziehungen löst und ihn in einen freien und ursprünglichen Zustand versetzt,--ja, selbst aus dem Pedanten und Pfahlbürger macht er im Handumdrehen etwas wie einen Vagabunden. (dZB V. I, 4)[iv]

The continuity of Hans Castorp's life was disrupted by the space described here—by the unusually sparse and disorienting landscape, as well as by the elevation from the sea level-- that he puts between himself and his "duties, interests, worries, and prospects" (TMM 4). It is thus hinted in the very beginning of the novel that the protagonist will be unable to take up his life at the point where he has had to lay it down; even the book he has taken along on his "brief" journey and which reminds him of his proposed career, The Ocean Steamships, now lies near by him and is neglected, dirtied, in fact, by soot from the locomotive.

On March 3, 1920, Mann wrote: "I anticipated [the problem of time] in my conception of the Magic Mountain just as I had anticipated the political antithesis leading up to the war" (qtd in Heilbut, 331). In fact, the more accurate assertion would have been that Mann had not "anticipated" the problem of time, but that his novel reflected the thinking of the historical period, as time was the problem frequently discussed during the

[iv] Space, as it rolls and tumbles away between him and his native soil, proves to have powers normally ascribed only to time; from hour to hour, space brings about changes very like those time produces, yet surpassing them in certain ways. Space, like time, gives birth to forgetfulness, but does so by removing and individual from all relationships and placing him in a free and pristine state—indeed, in but a moment it can turn a pedant and philistine into something like a vagabond (TMM 4).
All German quotations will follow the two-volume edition of Mann's Der Zauberberg (Stockholm: Fischer, 1939). All subsequent English quotations will follow the more recent John E. Woods translation of The Magic Mountain (New York: Vintage Books, 1996).

years when the novel was being written. As Thiher convincingly shows in his study, integrating temporality into knowledge was fundamental to the founding of sciences such as geology and biology, as well as to new theories in physics. Prior to that moment, in Newton's theory time was not an issue because forces, such as gravitational attraction, work instantly, and Newton's rational mechanics was, in fact, considered a model for all knowledge, from astronomy to medicine (Thiher 34). At the end of the nineteenth and at the beginning of the twentieth century—the period crucial for the formulation of scientific ideas and attitudes that are reflected in Mann's novel—temporality became an intrinsic part of what is known: the developing evolutionary science, archeology and geology, historiography, the notion of entropy in thermodynamics, all contributed not only to development of historical thinking, but also made temporality a crucial notion with which both science and literature (which began treating events as historical probabilities) now had to deal. Der Zauberberg, as a novel preoccupied with the notion of time, both thematically and in its structure, was written in this intellectual atmosphere when classical ideas about the "absolute" nature of time and space were challenged from many directions. Besides the contemporary scientific climate, the novel also explores the moral and personal implications of a loss of a sense of time.

Mann's work here is impressive because it resulted in a novel of ideas concerned with issues such as time and space, health and disease, life and death, matter and nothingness. The novel is marvelously written—composed, like a musical symphony where ideas play a role similar to musical themes—and it has fascinating characters whom the reader might possibly remember as real people in his or her life.[4] As Mann himself indicated, his work was originally planned as "ein humoristisches Gegenstück

zum 'Tod in Venedig'," as a short, simple, and amusing story based on the author's autobiographical experiences—the three weeks he spend in the Davos sanatorium visiting his sick wife in 1912 (Mann, "Einführung," 606).[v] A central role allotted to science distinguishes the novel as it touches upon biology, medicine, physiology, and physics.

It also seems possible to assert that Mann did not have a precise, technical understanding of Einstein's theories, as confirmed by his statement that relativity means that the borderline between mathematical physics and metaphysics has become fluid (qtd in Prusok 53). Nor was such an understanding a necessary pre-requisite for writing a novel whose main preoccupation, indeed, whose structural principle, was an idea of relative time. Mann was Einstein's contemporary, and it must be noted, so it may not be coincidental, that both thinkers were preoccupied with the concept of time, as were many others of their contemporaries, such as Ernst Mach and Henri Poincare, within the scientific community, Marcel Proust, H. G Wells, and Faulkner within literary circles, as well as Freud, Henri Bergson, Oswald Spengler, Martin Heidegger, and William James in related scientific and philosophical areas. Time was crucial, too, in the theory of evolution, as well as in such parallel disciplines as history, geology, and archeology, all flourishing then; and particularly in psychoanalysis with its focus on the past. Yet, perhaps equally significant for Einstein's as well as for Mann's thinking were developments in communication, transportation, and commerce, which all required a standardized way to measure time, whose improvements influenced the direction of scientific outlooks.

Clock synchronization was in the air, for example: the standard railroad times were imposed in the 1880s to end confusions caused by each community's use of its own

[v] as an amusing counter to "Death in Venice."

solar time. Standards became increasingly necessary with the rapid development of railway systems and the consequent confusion of schedules using scores of different local times. When Einstein got his first job, as a patent clerk Class 3 of the Federal Office for Intellectual Property, his office was located—not irrelevantly to this discussion or his own interests--near the famous Bern clock-tower. The clock was the official timekeeper for the nearby train station, and other clocks on the platform were synchronized with it. When trains arrived from different cities, where local times were not always standardized, they reset their clocks by referring to the Bern clock. Considering the fact that in his famous paper "On the Electrodynamics of Moving Bodies" (1905), subsequently known as the Special Relativity Paper, Einstein uses a vivid thought experiment involving moving trains, one can imagine that he was assisted in visualizing and articulating his ideas by the trains moving past Bern's clock tower and the rows of synchronized clocks on the station platform.[5] His years of study and thought, as well as his knowledge of his family's business dealing with electricity (coils and magnets, as cited in the opening paragraph of his paper), as well as reading numerous patent applications mentioning ways to synchronize clocks by using electric signals, contributed to and, it may be said, directly influenced his Special Relativity Theory, which postulated that the concept of absolute time was meaningless.

By expanding on the relativity principle, known since the times of Galileo, and applying it to light, Einstein also realized that all motion is relative: it is purely a matter of practical convenience, though this issue seems decisive for most people, that we consider a train to be moving and a train station to be at rest, since all motion is relative to an observer. Any physical body can be conceivably chosen as a standard body of

reference, and all other motions estimated with reference to it; it is impossible to say which means of estimating motion is more correct because all of them are correct as soon as one adopts a particular body to be used as a reference point. Moreover, every reference body or coordinate system has its own particular time, and it is impossible to state the time of an event independent of the state of motion of the body of reference: time is not absolute. All inertial reference systems, as the principle of relativity states, are equal: the physical laws are the same, or invariant, in all reference systems—the fact that prompted Einstein originally to call his theory "invariance theory." In other words, physical laws produce identical effects, whether they are described as they appear to one observer or to another: the velocity of light in a vacuum has proved itself a constant in nature through many experiments.

By proving that the velocity of light did not change whether the observer was moving towards or away from the source of light, allowed Einstein to postulate the concept of ether—the substance whose existence could not be proved through any experiment but which was nonetheless thought necessary to introduce into physics in order to explain electromagnetic fields—as superfluous. At the same time, for the laws of physics to be invariant in all systems of reference, the notion of absolute time and absolute space in Newtonian sense had to be given up, which caused a blow to commonsensical assumptions (Western sense).

Einstein's daily exposure to the issues of synchronizing clocks using light signals, as well as his thorough knowledge of Maxwell's and Lorentz's electrodynamics, led him to question the concept of simultaneity itself: to arrive at the notion that there was no certain way to say that two events were simultaneous because a light signal itself takes

some time to travel from one place to the other. Therefore no one can state with certainty that two clocks in distant locations show the exact same time: in order to do so, one must communicate this information, however no information can travel faster than the speed of light. While in Newton's theory forces are postulated to act directly and instantaneously, then Maxwell's theory of electricity questioned that assumption: it became clear that electric and magnetic forces are propagated through space at a finite speed (in other words, they do not act at a distance). Two distant events may appear to be simultaneous to one observer while a different, moving observer may conclude that the second event preceded the first. The sequence of events thus in part depends on the observer, a fact that does not usually apply to observers on earth moving at ordinary speeds. Since true simultaneity does not exist, no universal or absolute time exists either, or a temporal method that might be taken for granted as "correct" for all the events happening in the universe.

The concept of absolute time as something that exists in "reality" and continues to tick-tock independent of any observation of it or any movement, had been taken for granted since Newton's Principia (1687). In "Scholium" Newton gave definitions of time and space:

> I. Absolute, true, and mathematical time, of itself, and from its own nature, flows equably without relation to anything external, and by another name is called duration […]
>
> II. Absolute space, in its own nature, without relation to anything external, remains always similar and immovable.

Newton thus had taught us that time is simply there and cannot be affected by anything. His great achievement at the time was in the fact that time started to play a crucial role in physical laws, Newton's concept of time was essentially mathematical.[6] According to this classical view, which has proved remarkably powerful in physics for two centuries and forms the basis of our present-day commonsensical assumptions about time and space ("commonsense" Western style), all things are "inserted" into time and into space which remain immutable. Time was considered an absolute background for motion. Einstein however found that motion distorts the flow of time and the geometry of space; gravity is not just a force in his general theory but also a curvature of space-time itself. The psychological effect of abolishing universal time was dramatic—it was a spectacular blow to the foundational assumptions of Western thought which at times yield a false impression that relativity implies a total re-thinking of the concepts of space and time. In reality, however, Einstein's theory applies to situations that rarely occur in our daily lives. The fact that Mann elaborates the theme of a flexible time dependent on the frame of reference underscores how much his novel is a product of that historical moment.

Philosophers such as Hume, Mach, and Poincare, all of whom questioned the notion of absolute time, provided a foundation for Einstein's thinking. Similarly, distances in space, like durations in time, are not general and universal facts, but depend on an observer. In post-Einstein physics, therefore, one can speak only about the distance between two bodies at a given time; the only type of physical fact that the Special Theory of Relativity allows is inferred from distance in time together with distance in space, a relation which is called the "interval" in space-time. It is important to stress, however, that Einstein was looking for certainties in nature--for laws and phenomena that do not

change depending on an observer and that he found such a constant in the speed of light, which he declared the ultimate speed in nature and the same for all observers, whether they are moving away or towards a source of light at any speed. It also became important for Einstein to emphasize that his theory of relativity did not imply that all physical phenomena should be regarded as arbitrary. He considered the opposite to be true, and regarded physical reality, independent of our perception of it, as the basis of his theory: "Turning to the theory of relativity itself, I am anxious to draw attention to the fact that this theory is not speculative in origin; it owes its invention entirely to the desire to make physical theory fit observed fact as much as possible" (Einstein, Ideas and Opinions, 246). His special relativity was built on entirely observational foundations: no one ever observed ether, and so it became a superfluous concept; experiments proved that the speed of light remains constant regardless of the motion of its source, and so it was postulated to be nature's constant, the ultimate speed not to be achieved by any object of mass.

As is everywhere known, Einstein's Special Theory of Relativity has altered our view of the fundamental structure of the world and, although it runs counter to everyday experience and common sense, is a problem that is the source of its attractiveness to the general public and numerous confusions about it.[7] In popular imagination, relativity has often acquired a mysterious air as it seems to cast doubt on people's intuitive assumptions about a world in which much could be predicted, determined and explained--in other words, on the world of Newtonian physics as governed by the rules of cause and effect, gravity, mass, and motion. As Bertrand Russell points out: "There is no saying that one observer is right and another is wrong. In such matters what is seen does not belong

solely to the physical process observed, but also to the standpoint of the observer" (75). What is important here, however, and to any discussion of the "physics" of Mann's novel, is that Einstein's theory makes room in it for the spectator's point of view: it must be included because if everything in the novel is relative it must be relative to an observer. Simultaneity, duration of time, distance in space, as well as the shape, size, mass, and the color of an object have definite meanings in Einstein's theory only in relation to definite observers. Observers in different states of motion might measure things differently, and it would thus be not useful to ask whether it is time that actually slows down, or measuring rods that shrink, because it is in fact the interpretation of time and space as a result of those measurements that breaks down.

Of equal importance to understanding the relations between Mann's novel and Einstein's ideas, which deal with observation and those aspects of it that project beyond experience and experiment, is the way Einstein developed his theories. A visual understanding of concepts was a significant part of Einstein's thinking—his famous Gedankenexperimente—and the fact that his grasp of the physical world was based on a deductive approach. He began, in other words, with grand postulates that he intuitively felt were true: he "felt" that certain things must be true because of his intuitions about the physical world. These general principles had to be "worn out of nature by perceiving in comprehensive complexes of empirical facts certain general features which permit of precise formulation" (Ideas and Opinions 221). "A new idea," he wrote, "comes suddenly and in a rather intuitive way. But intuition is nothing but the outcome of earlier intellectual experience" (qtd in Isaacson 113). He then deduces physical laws and mathematical formulas, together with devised experiments, to confirm his great

principles. In other words, Einstein's thought process was for the most part deductive, and he did not start with experimental data that needed explanation but with imaginative leaps that helped him to discern patterns as well as irregularities in already affirmed theories and laws. These imaginative leaps are similar to the way a creative writer of fiction approaches his or her work: thinking in images becomes an important principal guiding one's work. To the end of his life, Einstein was guided by his belief in the harmony and simplicity of nature—even though he could not possibly offer any proofs of either—and that this beauty and simplicity should be reflected in physical theories and mathematical formulas. He sought to unify all known forces and particles under the same set of laws—a unified theory of everything—a solution that seemed to him not only possible but also beautiful, symmetrical, and harmonious, like nature itself. Life, however, is not that simple, and there may be more than one way to unify things that we know, as for instance the current proliferation of string theories shows. [8] Over the years, many of Einstein's visualized thought experiments contributed to the wide popularity and a better grasp of his theories by the public. To such an extent is this true that it may now be impossible to think about Einstein's theories without immediately picturing moving trains and lightning strikes, clocks that speed up or slow down, measuring rods that shrink or expand, accelerated elevators, two-dimensional beetles crawling on curved tree branches, the twin paradox (when one twin sets out on a space journey at the speed of light and the other stays on earth, and upon the return of the traveling twin it is discovered that they have aged differently), and other images that help make his counterintuitive concepts more clear and accessible. Those vivid images and intuitive leaps originated in addition to his attempt to explain something that was had actually

observed, they asserted some principles that he was able to visualize only in thought experiment. As a result, it may be said that despite his early assertions that he was a positivist, Einstein's insights pointed to a manner of thinking that truly went "beyond observation."[9]

For scientists and the public alike, Einstein's theories meant that the science of physics provided much less information about the world than had been previously expected, or at least it seemed that way.[10] One of his conclusions was that all moving reference frames have their own relative time. The collapse of a notion of universal time, according to which all events in the universe could be dated, affected everyone's views of causality, progress, and with that the certainty of classical physics, which promised that all events could be predicted and calculated, became a thing of the past. Almost ten years after the Special Theory of Relativity was published, in fact, Einstein was able to come up with mathematical equations confirming the heuristic assumptions of his General Theory of Relativity. Eager to generalize his conclusions and always looking for unifying principles, he first stated the equivalence between the effects of gravity and acceleration. One of his more curious conclusions, confirmed by experiments, to come out of his general theory, was the gravitational bending of light by an object of high mass (the sun): the very fabric of space-time undergoes a change near objects of high mass. Another baffling conclusion, also confirmed experimentally, was the dilation of time in the vicinity of mass, as confirmed by taking atomic clocks on an airplane: when it lands, its clock will be seen to be running ahead of a synchronized clock that had stayed behind on earth.

All of these exciting and startling conclusions, many of which were misinterpreted and exaggerated by the public imagination, changed the way people think about reality.[11] Attesting to the widespread acceptance of Einstein's theories and to the fact of his eagerness to contribute to the popularization of his ideas, Issacson notes that more than six hundred books and articles on relativity were published in the first six years after the eclipse of the sun by Mercury confirmed Einstein's predictions about the bending of light in 1919. Lecture halls were packed with people eager to understand the theory, and Einstein himself, in his Relativity: The Special and General Theory (1916), sought to illustrate his science with many thought-experiments accessible to a non-specialist.[12]

Remarkably, years before Einstein published his theory of the four-dimensional continuum of space-time, a novelist H.G. Wells had written his famous The Time Machine (1895), which became the writer's first widely popular novel. In it, he describes the unnamed protagonist's travels into the future with the help of a machine, which is able to treat time as a fourth dimension (in addition to the three dimensions of Euclidean space). Since in Wells' novel time is a dimension akin to space, traveling through it is possible. Journeying into the distant future, the traveler describes the evolution of his surroundings, and the question of progress in general, as well as the specific progress of the human race, is taken up. If anything, this progress can be described as a descent into bestiality, the eventual end of the human race, and later the ultimate death of the planet as it ceases to rotate around its red giant of a sun. It is curious that it was first in literature, and not in science, that the intriguing notion of time as the fourth dimension is discussed, while the idea of progress, understood as an advancement to a higher, more developed

state, is brought into disrepute. Wells' science fiction, in fact, differs also from the earlier works of Jules Verne, who makes no new assertions about time.

If H.G. Well's novel focuses on the future, then Proust's The Remembrance of Things Past (1913-27) deals with the past in a way that challenges the constraints of linear time. Proust's novel is a testament to the author's obsession with Time, which is also treated as a separate dimension, although in a way quite different from the science-fictional approach of Well's. Proust, who considered himself a spectator of life, seems to have believed that the quality of authentic experience always eludes us unless it is captured in an intellectualized form through recollection. Time in the novel is thus constantly folded back upon itself and the novel ends exactly where it started: the narrator is ready to begin the writing of his book. Thus, in the last paragraph of his novel he writes:

> If, at least, there were granted me time enough to complete my work, I would not fail to stamp it with the seal of that Time the understanding of which was this day so forcibly impressing itself upon me, I would therein describe men—even should that give them the semblance of monstrous creatures—as occupying in Time a place far more considerable than the so restricted one allotted them in space, a place, on the contrary, extending boundlessly since, giant-like, reaching far back into the years, they touch simultaneously epochs of their lives—with countless intervening days between—so widely separated from one another in Time. (1123-24)

This passage evokes the idea of space and time as inseparable. Moreover, the true nature of the spatial aspect of time, according to Proust, is distorted by our senses, but the past,

which is always held within us, can be re-worked and re-arranged, at least by an artist's fantasy. Man occupies space not with his body but with his years, Proust states at the end of his work; the past is a burden unless it is re-worked by the artist's vision, which selectively remembers, or selectively forgets, certain elements from its experiences of past, present, and future, fostering links between logically unrelated elements, and disregarding causal and chronological arrangements. Rather like the realm of dreams in Freudian theory, a fictional form violates time-orderings by retrieving past events seemingly at random. Proust's novel alludes to the metaphors from the realm of physics, although the writer himself famously noted that he understood nothing of it. The narrator Marcel is disoriented, and freed from gravity, he sails through space, and sees the stars. In 1921 Proust wrote to a friend: "How I would love to speak to you about Einstein. I do not understand a single word of his theories, not knowing algebra. [Nevertheless] it seems we have analogous ways of deforming Time" (qtd in Isaacson 280).

Like Mann's Der Zauberberg, Proust's novel describes the effects of optical toys, such as the kaleidoscope, the kinetoscope, and a magic lantern, which suggest alternative worlds of visual effects. Proust's novel also offers another interesting and a more direct parallel with Mann's novel. Both Proust's narrator and Mann's protagonist are in a sense excused from "real life," the former by virtue of broken ties with the external world, and the latter because of his decision to stay on in a sanatorium beyond the planned length of his visit. Both Marcel and Hans Castorp, are on "vacation" from time, absent from the present and its requirements, such as profession, family, and social life. Externally, this state of things corresponds to the dissolution of former societal bonds and certainties.

Philosopher Henri Bergson (who married Proust's cousin) was likewise interested in problems of time as it related to memory, intuition, and creativity. Bergson's philosophy touches upon certain aspects of relativity theory (space and time), as well as scientific theories of the mind. His thinking influenced Proust: he made a distinction, which became important for Proust, between the concept and the experience of time. Initially opposing Einstein's theory, Bergson also introduced the concept of non-linear time. His reflections on time, in his Duration and Simultaneity, deal among other problems with the idea of multiplicity. His idea that time is perceived by the mind not as a succession of conscious states but as a continuous flow, influenced William James, often claimed as the inventor of the term "stream of consciousness."

Thomas Mann was thus not the only thinker preoccupied with various aspects of time; placing his novel into a contemporary context of the developing ideas about time allows to trace important connections and influences, and also to explore those aspects which are unique to the novel. Der Zauberberg opens with the arrival of Hans Castorp to the sanatorium in Davos in order to visit his ailing cousin Joachim Ziemsen. The length of his planned visit is only three weeks, but, as hinted in the "Foreword" to the novel, the protagonist ends up staying for seven years, following his diagnosis of a lung condition (a moist spot), which might, in part at least, be psychosomatic. At Davos, he becomes familiar with the baffling local definition of time, heavily dependent as it is on various repetitions, gets acclimated and used to the routine of the confined world of a sanatorium, makes new acquaintances, and falls in love. Freed of the ties of ordinary life, of his previous prospects of becoming a naval engineer, of financial constraints, indeed, of time itself, securely wrapped up in a fur sack on his balcony during the "rest cure," Castorp

embarks on a self-imposed program of scientific reading in anatomy, biology, embryology, and astronomy. He entertains himself with the technologically advanced toys available to the patients, witnesses many heated arguments between a humanist (a self-pronounced *homo humanus*) and a proponent of progress Settembrini and a Jesuit communist Naphta, and even participates in a séance following Joachim's death. As if woken up from his seven-year stay by a bolt of thunder, he finds out about the war that has broken out below in the flatlands, and flees from the mountain sanatorium to become a volunteer soldier. In the final scene, reminiscent of a cinematic ending (as if the author needs to finish a novel and "gets rid" of his character by making a "cut"), Castorp disappears from our sight amidst smoke, flames, and explosions. The narrator announces that his prospects are poor.

In exploring the possible relations between this frightening tale and Einstein's scientific work, it is important to remember that Einstein's special theory of relativity was formulated in 1905 and had become widely-known well before Thomas Mann started work on his novel in 1912. On the other hand, Einstein's world-wide fame developed only after the confirmation of his general theory of relativity, following the solar eclipse of 1919, or well after several chapters of Mann's novel had already been completed. Mann's writing of the novel--unlike Einstein's prior theoretical pursuits--was interrupted by the First World War, as well as his other writing projects. Mann finished writing the novel in 1924; altogether it took him twelve years to complete although he did not work on it continuously.[13]

Given the extreme popularity of Einstein's theories and the way it was reflected in the press, Mann undoubtedly had a certain general idea about what was going on in the

realm of physics at the time. In his 1923 essay devoted, out of all things, to "Okkulte Erlebnisse," he writes:

> Die Tatsache, daß ich von der Lehre des berühmten Herrn Einstein sehr wenig weiß und versteh (außer daß dennoch die Dinge eine "vierte Dimension" besitzen, nämlich die der Zeit), hindert mich so wenig wie jeden andren intelligenten Laien zu bemerken, daß in dieser Lehre die Grenze zwischen matematischer Physik und Metaphysik fließend geworden ist. Es ist noch „Physik" oder was ist es eigentlich, wenn man sagt (und man sagt heute so), die Materie sei zuletzt und zuinnerst nicht materiell, sie sei nur eine Erscheinungsform der Energie und ihre „kleinsten" Teile, die aber bereits weder klein noch groß sind, seien zwar von zeiträumlichen Kraftfeldern umgeben, aber sie selbst sind zeit- und raumlos?[vi]

Despite the confusion over various concepts taken from several of Einstein's papers, Mann here demonstrates an awareness of the implications that the theory had for our understanding of the world. He then uses this awareness to his own ends to connect it with the experience of the séance that he once actually attended; and although this particular connection remains highly questionable, what remains important is Mann's knowledge of the state of modern science during that period. The reason that the

[vi] The fact that I know and understand the work of Mr. Einstein very little (besides the fact that things have a "fourth dimension," namely that of time), does not stop me—as other intelligent laymen--from noticing that the border between mathematical physics and metaphysics has become fluid. Is it still "physics" or what is it exactly, when one says (as one does these days) that matter is in the end and in its essence immaterial, that it is only a form of energy and that its "smallest" parts, which however are neither large nor small, are surrounded by spacio-temporal fields, but in themselves these parts possess neither time, nor space. Thomas Mann, "Okkulte Erlebnisse" in Gesammelte Werke, V. X, (Frankfurt am Main: Fischer, 1974) 139.

demarcation line between physics and metaphysics is beginning to fade for Mann, is that matter itself had been proven by Einstein to be non-continuous, and to be made up of separable, distinguishable parts—molecules and atoms—which somehow added to a general, although erroneous, perception that even mater itself became less "solid," or "nicht materiell" (immaterial).[14] In addition, Einstein's famous equation, $E=mc^2$, had established a connection between mass and energy, describing them as different manifestations of the same thing. For a layman, it was confusing to consider the mass of a physical body to be a measure of its energy, although Einstein's formulas proved this to be the case with beauty and simplicity and his proposed experiments later confirmed it practically. Thus, the quoted passage, on the one hand, proves Mann's awareness of the state of physical science, and, on the other hand, illustrates how this awareness might be interpreted in the layman's mind.

Focusing the theme of time, the novel seems to pose a question: What is really measured by a clock? More important, what significance does time possess in any human life? The novel's first paragraph establishes the interchangeability of space and time and their effect upon human consciousness: on the one hand, they engender forgetfulness, and on the other, they bring back to us our "unattached" state, setting us free from familiar bonds. Right from the beginning, therefore, the novel evokes the unsettling, disorienting, and bewildering effect that the change of location--or a system of reference, as a scientist might call it--has on the protagonist. Immediately on his arrival, the rarified atmosphere of the high-mountain air works changes in Hans Castorp, who, otherwise not inclined to theoretical interests, now begins to philosophize. First, his train trip leaves him utterly disoriented in space, and then he finds himself equally confused about the notion of time

by his cousin's Joachim remarks on the bizarre nature of time in the mountain sanatorium: it is quite different from the way people are accustomed to think about time "down below": "Ja, Zeit […] Die springen hier um mit der menschlicher Zeit, das glaubst du gar nicht. Drei Wochen sind wie ein Tag vor ihnen. Du wirst schon sehen. [...] Man ändert hier seine Begriffe" (dZB v. I, 9).[vii] To Hans Castorp, who is only a guest in the Berghof sanatorium, time begins to lose its absolute, universal significance; the real meaning of this change, however, will become clear to him only after he undergoes a transition from guest to full patient.

The Magic Mountain itself is established as a separate, secluded world, functioning according to its own rules, its own rhythm, and its own ways of measuring time: there is a sharply drawn line between "up here" and "down below," or the world of the sanatorium and the world of practical affairs, the flatlands; between "all of us up here" ("wir alle hier oben" V. I,12), as Joachim calls the patients, and those down below. These two spheres are so different from one another that they truly evoke Einstein's separate frames of reference, each one being not better and not worse than the other one, but equally valid; an observer belonging to each reference frame would experience time, as well as other physical qualities (usually taken for granted and considered to be inherent in an object itself) differently. The relativity of each spectator's point of view is introduced early in the novel, and is developed throughout its content, sometimes in the dialogue between its characters, sometimes in the essayistic digressions which occur frequently and serve as a way for the author to situate the novel in the modern scientific discourse.

[vii] Oh, time! …They make pretty free with a human being's idea of time, up here. You wouldn't believe it. Three weeks are just like a day to them. You'll learn all about it… One's ideas get changed." (TMM 7)

The reader, likewise, finds out from Joachim's initial remarks that he is displeased with his situation and welcomes his cousin's visit as "eine Abwechslung […], eine Gliederung in dem ewigen, grenzenlosen Einerlei…" (dZB v. I, 19).[viii] Time for Joachim passes fast and slow at the same time, for he longs to go back into the "flatlands" and to join his regimen; he finally concludes that it doesn't pass at all: "Sie [die Zeit] vergeht überhaupt nicht, will ich dir sagen, es ist gar keine Zeit, und es ist auch kein Leben" (dZB v. I, 19).[ix]

This concept of monotony, of time going fast and slow, and eventually losing its meaning altogether will be picked up further in the novel, once Hans Castorp gets acclimatized to his new environment. At the very beginning, Mann establishes two important leitmotivs of his novel—the timelessness of the "magic" Berghof world, and the relative meaning of time for different people. Time doesn't seem to pass in the sanatorium precisely because of the monotony of local existence, there is no reference point, no change against which time can be measured; and therefore it loses all of its meaning. It no longer matters whether it passes or not, for observers on top of the Magic Mountain live in the everlasting "now" because they lost their connection with the world down below, in which historical events and changes do actually happen, they live, in other words, without the awareness that other frames of reference exist (with the exception of Settembrini).

While the characters in the novel frequently refer to their Berghof existence as monotonous and boring, the reader is fascinated by the amount of detail put into each description of the meal, the daily schedule, the rules of the rest cure, the landscape, and

[viii] an interruption, a break in the everlasting, endless monotony" (TMM 14).
[ix] it doesn't really pass at all, there is no time as such, and this is no life (TMM 14).

each character portrayal (complete with peculiarities of gesture, accent, dress, temperament, complexion, and language register): the notion of monotony, time expansion, and boredom is a theme of the novel rather than its feature, for even the modern reader finds himself or herself absorbed by Mann's storytelling techniques.

Significantly, Hans Castorp is introduced as an "ordinary" young man ("ein einfacher junger Mensch" dZB v. I, 3) he is undistinguished in his ambitions or desires, unmarked by any particular trait of character—with the exception of, perhaps, his curiosity--and unexceptional in his abilities. He is, in other words, quite mediocre ("mittelmäßig"), which is not to say he is portrayed by the narrator without sympathy. On the contrary, the fact that there is nothing special about him is treated as a result of his environment rather than his inherent lack of predisposition; the age itself is hopeless, viewless and helpless ("hoffnungslos, ausichtslos und ratlos" dZB v. I, 46), the life of the epoch did not seem outwardly stimulating, and Hans Castorp, possessing neither single-mindedness nor exceptional vitality, was not able to realize his full potential. However, for the purpose of this study, his ordinariness and mediocrity have another important implication: it is established that his point of view is as good as anyone else's, he is just as valid an observer, as anyone can be; and additionally, it implies that all points of view might be equally valid.

While Chapter I introduces the protagonist as an ordinary young man, Chapter II describes his parental home and his ancestors as the world, which is long gone, and the one which had functioned according to quite different rules. If on the Magic Mountain, one feels unattached, as if suspended in space and time in the perpetual "now," then down in the flatland--and particularly if one were to look at the name plate of Castorp's

mansion--one would have felt an immediate connection between the past, the present, and the future, as in the ancestral lineage and in property passed from one generation to the next. It is also because this world is beginning to disappear for socio-economic reasons and because the old social ties are dissolving, that Castorp feels unattached or "free." We learn about the importance of the Christening Basin which signifies change for Castorp (because it has been used to baptize so many different members of his family) in the midst of duration (because it is a family relic carefully preserved and passed on). Time, as reflected by this symbol of the Castorp family, is both a flowing and a persisting recurrence. Such perception of time is reminiscent of Newtonian absolute definition, it is time existing apart from those perceiving it, and it is linked in the novel with the world of the past, the ancestors, the paternal home, the world of the no-longer-living. In contrast to the ordinary man Castorp, his grandfather, Hans Lorenz Castorp, had been "die eigentlich Charakterfigur, die malerische Persöhnlichkeit in der Familie" (dZB v. I , 32-33); the lingering aura of his presence is associated with the absolute time perception.[x]

The old order associated with the world of Castorp's ancestors has disappeared; in fact, it had become obsolete long before his grandfather's passing, but Hans Castorp's world, too, is about to be swept away. It is only under certain historical and economic conditions, which have long since disappeared, that it has been possible for Hans Castorp and those like him to squander away years of their life in temperature taking and flirting, as Mann himself ironically indicates in his address to Princeton students. In this speech, Mann describes Castorp's time as that of a pre-war era of intact capitalistic economy, which made it possible for the patients of tuberculosis-sanatoria to rely on their family's sustenance for many years or, even worse, "ad infinitum." As Mann puts it, "Der

[x] the central figure in the family, its picturesque personality (TMM 22).

'Zauberberg' ist zum Schwanengesang dieser Existenzform geworden, und vielleicht ist es etwas wie ein Gesetz, daß epische Schilderungen eine Lebensform abschließen und daß sie nach ihnen verschwindet."[xi] It is thus not only Castorp's grandparents' and parents' epoch that had vanished, but Castorp's own world, too, the pre-war way of life with its functioning capitalistic system, is long gone, drowned by the fires of the First World War and by the subsequent financial crises. One conclusion that clearly emerges from situating the novel's protagonist as part of the historical period that had come to an abrupt end—even as the novel was still a work in progress—is that the author truly explores every aspect of time in his novel, the historical, the mythological, the scientific, and the moral dimensions of it. While capturing the zeitgeist, the novel at the same time investigates the implications of the ideas, advanced in the theory of relativity.

So how does the "ordinary" young man as Hans Castorp begin to preoccupy himself with such abstract problems as time? Castorp, the reader finds out at the beginning of the novel, is on his way to taking up important positions in life: he is about to become an apprentice in a firm before entering on the career of a naval engineer; and it is not a mere accident that he chooses a practical field for his future. His talent for water-color paintings of ships far exceeds his abilities in technical sketching, but he does not seriously consider himself for "Überspanntheiten und Hungerleiderideen" (dZB 47).[xii] Unlike many others of Mann's characters, Hans Castorp is not an artist: he is an engineer by training, who takes a long "leave of absence" from his practical calling and learns

[xi] The Magic Mountain has become a swan-song of this way of existence, and perhaps this is something like a law, that epical depictions bring a form of life to a close, and that it disappears after them. (Thomas Mann, "Einführung in den 'Zauberberg': Für Studenten der Universität Princeton," Gesammelte Werke in Dreizehn Bänden. V. XI, Reden und Aufsätze, [Frankfurt: Fischer, 1974] 606).

[xii] a life of eccentricity and starving for art (MM 32).

from textbooks of biology, botany, anatomy, astronomy, physics, and other sciences, without turning any of his theoretical pursuits into a vocation. Castorp respects work, one might say out of respect for his heritage, but he does not like it when work stands in the way of his unclouded enjoyment if his favorite cigar. He prefers his time free, lying spacious before him; and thus the routine of the sanatorium, where he arrives merely as a guest, resonates favorably with his predispositions. Being an observer of life, free from obligations and practical efforts, is a comfortable position for Castorp; it is not by mere accident that he is described observing the landscape outside from a window of a moving train in the beginning of the novel. Moreover, even the sight of death evokes detached alertness of observation in Castorp who loses both his parents at a young age.

The bizarre, counterintuitive way to measure time, which Castorp's cousin mentions upon his guest's arrival, is further confirmed by another Berghof patient Ludovico Settembrini, who says that "Wir kennen das Wochenmaß nicht […] Unsere kleinste Zeiteinheit ist der Monat." (dZB 84).[xiii] And although one realizes an ironic undertone of these remarks, Castorp takes them, at least to some extent, in earnest, which prompts his own reflections on the nature of time.

In the "Gedankenschärfe" (Clarity of Mind) section of the third chapter, Castorp's cousin Joachim remarks that time for him is marked by temperature taking--four times daily--for then he knows what seven minutes (the interval it takes him to measure his temperature) actually means. For Joachim it is terrifying to think that seven weeks can fly by just as fast as seven minutes but without any notice. This leads to Castorp's bizarre

[xiii] We do not know the week as a unit of measurement […] Our smallest unit of time is the month. (TMM 56).

conclusion that "Die Zeit ist doch überhaupt nicht 'eigentlich'" (dZB, v. I, 95).[xiv] It may seem long or short, he reasons, but apart from individual perception no one actually knows how long or short it is. A practically-minded Joachim disagrees saying that watches and calendars exist to measure time the same way for everyone, and "wenn ein Monat um ist, dann ist er für dich und mich und uns alle um" (dZB, v. I, 95-96).[xv] Hans Castorp insists however on the relative nature of time and space: to him the minute is as long as it takes the second hand of his watch to complete a circuit, but to our senses, he says, it takes a varied length of time. From looking at the hands of his watch marking the passage of time, he concludes that time is measured by motion:

> Wir messen also die Zeit mit dem Raume. Aber das ist doch ebenso, als wollten wir den Raum an der Zeit messen,--als doch nur ganz unwissenschaftliche Leute tun. Von Hamburg nach Davos sind zwanzig Stunden,--ja, mit der Eisenbahn. Aber zu Fuß, wie lange ist es da? Und in Gedanken? Keine Sekunde. (dZB, v. I, 96)[xvi]

Such reflections of Mann's protagonist are reminiscent of Einstein's remark that "there is no audible tick-tock everywhere in the world that can be considered as time," meaning that there is no absolute way to measure time for all events in the universe without taking into account the frame of reference and the relative motion of an observer (qtd in Isaacson 128). At the beginning of his stay in Davos, Hans Castorp comes to a conclusion unlikely for a man of his practical orientation, that "unsere Maße sind doch

[xiv] there is nothing actual about time (MM 63)
[xv] when a month has passed, then it's passed--for you and me and everyone (TMM 64).
[xvi] And so we measure time with space. But that is the same thing as trying to measure space with time—the way uneducated people do. It's twenty hours from Hamburg to Davos—true, by train. But on foot, how far is it then? And in our minds—not even a second! (TMM 64).

bloß Konventionen"(dZB, v.I, 97).[xvii] Ideas such as these are to be picked up again in numerous later sections of the novel making reflections about the nature of time a persistent leitmotif connecting various divergent aspects and themes of the novel. There is a realistic time dimension in the novel, punctuated by flirtations of patients, gossip, meals, walks, and temperature-taking; there is also an enchanted time, as indicated by images drawn from Greek mythology and German Märchen (fairy tale). In his "Foreword" to the novel, Mann indicates that his story has a lot in common with fairy tales, and, indeed, it is sufficient to recall the number-symbolic evoked throughout the novel: Hans Castorp initially arrives to stay at Berghof for three weeks, which turn into seven months and then into seven years, there are seven tables in the dining room (and Castorp sits at each one of them for approximately a year), he stays in room 34, and the novel itself consists of seven chapters. As many fairy tales, the novel has its magic number—seven, and Hans Castorp's withdrawal from life in the "flatlands" is described as a seven-year sleep on the Magic Mountain. Furthermore, the humanist Settembrini makes comparison's between the sanatorium and the realm of shades, into which Hans Castorp-the "Odysseus" has descended; the doctor and his assistant are ironically called the judges of the dead—Minos and Rhadamanthus—evoking the similarities between the timeless world of myth and the isolated from history world of Berghof sanatorium.

Time in the novel is indeed depicted as closely connected with space, geography, and climate. There are two main reference systems—one is that of the Magic Mountain, and the other down below in the flatlands—and perception of time depends on one's location. The reader finds out that regular time relations do not hold true on the Magic Mountain, not only as perceived privately by patients but also because the seasons are not

[xvii] all our measurements [of time] are merely conventions (TMM 64).

distinct from each other and do not keep to the calendar—a snowstorm is possible in summer, and one can have a perfectly warm summer day in the middle of winter. As Joachim puts it, there are winter days and summer days, but they are all mixed in. Nothing—including time—is measurable and describable as a thing in itself, but only in relation to a particular location and to a particular observer. This state of things is also summarized in Russell's The ABC of Relativity (1958), a book that explains in a lucid, persuasive form the implications of Einstein's theory for the layman's "commonsensical" assumptions about the nature of time and space: "Measurements of distances and times do not directly reveal properties of the things measured, but relations of the things to the measurer. What observation can tell us about the physical world is therefore more abstract than we hitherto believed" (The ABC 75). Similarly, after Hans Castorp spends a few days in the sanatorium, he realizes that time is a far more abstract notion than people commonly think, and that it can only be measured in relation to a particular person who experiences its duration.

In one of the novel's philosophical digressions, "Excursus on the Sense of Time" [Exkurs über den Zeitsinn], Chapter 4, human perception of time is brought into contact with the theory of relativity, through the notion of experience: the perception of time is bound up with consciousness of life. The narrator argues that commonsensical perception of time is not always true: despite the fact that tedium and monotony are usually connected with the slow passage of time (and interesting and novel activity makes time go by faster) it is not quite so. According to the narrator, and as illustrated by the structure of the novel, monotony contracts and dissipates large units of time, reducing them to nothing. On the other hand, a full, interesting content of life gives the general

passage of time weightiness and solidity, making it go by slower: eventful years flow more slowly than poor, bare, empty ones. In a certain sense, this counterintuitive description of the passage of time is also relevant to Einstein's theory of relativity according to which time slows down (or dilates) for a very fast moving object and speeds up (or contracts) for a slow moving object. Similar to a fast-moving object, life that is full of activity and events appears longer because it is filled with meaning, but life which can be compared to a slow-moving object, in the sense that it is monotonous, boring, and uniform, appears as very short: "…wenn ein Tage wie alle ist, so sind sie alle wie einer; und bei vollkommener Einförmigkeit würde das längste Leben als ganz kurz erlebt warden und unversehens verflogen ist (dZB, v. I, 153).[xviii]

Before Castorp becomes a full-time patient in a sanatorium, he does not associate himself with these bizarre notions of time, which run against the grain of his common sense. Dr. Behrens calls him "ein unbeteiligter Zuschauer" (dZB, v.I, 156).[xix] Yet he gradually begins to consider life down in the flatlands from the point of view of "those up here," and this former way of life now seems to him queer and unnatural; the point of view, it is emphasized, literally depends on the position of the observer. In the novel, the time loses its absolute quality, dilates and contracts, not because the observer is moving at relativistic speeds, but because he is moved from one reference system to the other, and because instead of work, change, and activity, his new life at Berghof is marked by utter monotony and uniformity.

From a disinterested spectator, or someone with a novel but detached outlook on sanatorium life, Hans Castorp gradually turns into an object of observation himself,

[xviii] When one day is like every other, then all days are like one, and perfect homogeneity would make the longest life seem very short, as if it had flown by in a twinkling (TMM 102).
[xix] an innocent bystander (TMM 104).

through a transition marked initially by an exchange between him and Dr. Krokowski in the beginning of the novel. The doctor calls him "eine höchst studierenswerte Erscheinung"[xx] and inquires after his field of occupation, to which Castorp replies: "Ich bin Ingenieur, Herr Doktor" (dZB, v. I, 23).[xxi] Hans Castorp does not perceive himself yet as an object of medical study, this self-perception would culminate later in the scene of his encounter with an X-ray machine. Yet even before that encounter, Castorp is exposed to a constant scrutiny of other patients and is subjected to Dr. Behrens' evaluation with the help of a stethoscope.

The X-ray examination amounts to exposing one's inner self to a "medical gaze," not even a human eye, but a gaze of a recently invented machine: "Das Objektiv hatte in sein Inneres geblickt" (dZB 326).[xxii] In the X-ray room, he is no longer an engineer, but a body to be studied empirically and clinically. The X-ray apparatus itself is described as an object of fearful powers ("fürchterliche Kräfte" dZB 325), a technological and scientific triumph of the age. While being X-rayed Castorp sees explosions, sparks, a red light, like a threatening eye; it is not just an extension of the human eye, but a device endowed with its own mysterious agency: "Irgendwo blickte ein rotes Licht, einem Auge gleich, still und drohend in den Raum…" (dZB 325).[xxiii] Due to the novelty of the X-ray technology, the lab is perceived by the protagonist as a something mysterious and "spooky" (spukhaft): "…man wußte nicht, war man in dem Atelier eines Photographen,

[xx] a phenomenon of greatest medical interest (TMM 16).
[xxi] I'm an engineer, doctor (TMM 16).
[xxii] The lens had peered inside him (TMM 213).
[xxiii] Somewhere a red light blinked, like a silent, threatening eye […] (TMM 212).

einer Dunkelkammer oder einer Erfinderwerkstatt und technischen Hexenoffizin" (dZB 324).[xxiv]

A German physicist, Röntgen discovered this type of electromagnetic radiation in 1895, and his discovery was quickly noticed by scholarly journals, newspapers, and popular press alike. A print of an X-rayed hand of Röntgen's wife, which he enclosed with his paper, quickly prompted a genre unto itself—an x-rayed part of a body. A peculiar thing about Frau Röntgen's hand was that one could see the wedding band (signifying life) and the bones (reminding of death) at the same time, thus the traditional distinctions about the outer and inner spaces of the body are called into question. It was considered impossible to see the bones while the person was still alive.

Fig. 5. X ray photograph of the hand of Bertha Röntgen
made by her husband on December 22, 1895.
Robert Nitske. The Life of Wilhelm Conrad Röntgen, Discoverer of the X Ray.
(Tuscon: The U of Arizona P, 1971) 6.

[xxiv] You couldn't tell if you were in a photographer's studio, a darkroom, or an inventor's workshop and sorcerer's laboratory (TMM 211).

When it was first invented and became widely known, X-ray technology was used not only for medical purposes but it was also perceived as a source of spectacle, with x-ray machines displayed in shop windows and X-ray portraits as a popular genre. In this context, Castorp's looking at his own hand with the signet ring, is a tribute the novel makes to the historical moment out of which Frau Röntgen's "Hand mit Ringen" (hand with a ring) also emerged.[15]

Neither Joachim, nor Castorp feel the slightest physical penetration during the X-ray procedure, and yet the machine looks into their interior. Upon seeing Joachim's heart, he first imagines he sees some animal shape, or a jellyfish, and then realizing what it really is, he is deeply moved with a religious and mystical feeling and wonders whether this medical gaze is all that innocent and permissible. After all—and one must keep in mind that such perceptions were not uncommon for his contemporaries—Castorp thinks he is looking into a grave ("er sah in sein eigenes Grab" dZB 330).[xxv] Looking at the X-ray of his hand, he understood for the first time that he would too die, thus his relationship to his own being and his own temporality is permanently altered. New technology and its relationship to temporality are evoked in the novel through its then popular association with death because one is able to see a skeletal structure of a still living person. In the scene, where the protagonist looks at his own X-rayed hand, he is at once an object of medical gaze and a subject observing his own inner being, the boundary between the observer and the observed being called into question.[16] He is not a disinterested spectator that he had once been, because looking into "his own grave" leaves him deeply moved; and he is not a mere object of study either.

[xxv] He saw his own grave (TMM 215).

Technological apparatuses described in Mann's novel raise an interesting connection between observation aided by technological equipment, interpretation of the results, and objectivity. The question arises: what does one really see with the help of the new technology? Looking at Joachim's lungs, Castorp is at first incapable of interpreting what he sees: all he can see are shapes, shadows, spots, and lines. He entirely lacks Dr. Behren's medical vocabulary—hilum glands, adhesions, diaphragm, lesions, scars, cavities—in order to describe what he sees. According to the humanist Settembrini, the answer to that question lies in the interpretation: in other words, whether the photographic plates offer a definitive proof of a disease "in das Belieben des Beurteilers stellten" (dZB 365).[xxvi] What one sees on an X-ray image is, according to this view, to a large extent a matter of interpretation, of how dark spots against a light background are deciphered. Diagnosis of a disease then is not a straightforward direct procedure, at least in Castorp's case. Explanations like Settembrini's alter the relationship between observation and knowing, or vision and the object seen: the previous empirical belief that phenomena are the way we observe them no longer holds. Results of any observation, unassisted or aided by technology, have to be interpreted and in some cases various divergent theories can emerge. Moreover, observation depends on a language which interprets, describes, and names what is seen. Russell offers an insightful comment on the relationship between observation and interpretation: "We naturally interpret the world pictorially; that is to say, we imagine that what goes on is more or less like what we see" (137). He goes on to say that the relationship between our knowledge and nature is similar to that between musical scores and real music: we can read the scores but we cannot know whether the music represented by the scores is beautiful or hideous;

[xxvi] lies more or less in the eyes of the beholder (TMM 238)

"perhaps, in the last analysis, we cannot quite be sure that the scores represent anything but themselves" (137). This view does not imply that special scientific training, in the case of the novel under investigation medical, is superfluous; on the contrary the conclusions about observed phenomena of a trained specialist would always differ from those of a layman. One should not, however, neglect the role of interpretation, or an educated guess, that is involved in each observation. This role is particularly great when a new technology, such as X-ray photography, begins to be widely practiced.

Moreover, there are other types of technological inventions, or optical diversions, as they are called in the novel ("Unterhaltungsgeräte," and "optische Veranstaltungen" dZB 449-50), which raise a connection between temporality, observation, and accuracy of vision: a gramophone, a kaleidoscope, a stereoscope, and a cinematographic drum. Patients of Berghof sanatorium amuse themselves with these somewhat old-fashioned devices (compared to the X-ray technology and film), which were used in the previous century to study empirically optical phenomena. All these amusing gadgets call into question the precision of vision. Film and gramophone make the original performance subject to endless repeatability; the "here" and "now" of the original performance can be replayed again and again, but there is no real performer to applaud. Curiously, film is not considered an art by Mann, it is cheap, vulgar, and is produced for the mass consumer; one needs to keep in mind that his views formed before film had a chance to be developed into an art form. To summarize, images and visions produced with the help of new technological devices and earlier invented optical toys were transforming people's perception of the concrete existence of things, the here and now of a material object.

In a passage that directly evokes thought experiments popular at the time of the theory of relativity, Mann makes it clear to his readers that our perception of time is a product of our world--being the size that we are, we move about at the speeds that are possible within our world, and this is in turn determined by the size of our planet, and the speed with which it is moving through space:

> Unschwer wären Wesen denkbar, vielleicht auf kleineren Planeten, die eine Minitaturzeit bewirtschafteten und für deren „kurzes“ Leben das flinke Getrippel unseres Sekundenzeigers die Zähe Wegsparsamkeit des Stundenmessers hätte. Aber auch solche sind vorzustellen, mit deren Raum sich eine Zeit von gewaltigem Gange verbände, so daß die Abstandsbegriffe des „Eben doch“ und „Über ein Kleines,“ des „Gestern“ und „Morgen“ in ihrem Erlebnis ungeheuer erweiterte Bedeutung gewännen. (ZB, v. 2, 307).[xxvii]

The theory of relativity, the passage implies, made it possible to imagine, if not to observe, worlds quite different from our own, whose scale and speed would make its space-time measurements smaller or larger than our own. In contrast to this imaginary situation, Hans Castorp’s perception of time and space changes due to the fact that he chooses to take a “vacation” from his practical pursuits and stays in the sanatorium well beyond his intended term, justifying it with his largely imagined illness.

[xxvii] It is not difficult to imagine creatures, on smaller planets perhaps, who administer a miniaturized time and for whose “short” life the nimble, mincing steps of our second hand possesses the dogged spatial frugality of an hour hand. But it is also possible to imagine creatures whose space requires time to move at a pace so monumental that in their experience our terms for describing intervals like “just now” and “in a bit” acquire the vastly expanded meaning of “yesterday and “tomorrow.” (TMM 536)

Unaware of the passage and duration of time, Hans Castorp is trying nonetheless to grasp its abstract nature, which is illusive and seems to escape his grasp despite all intellectual efforts. While studying his watch, he suddenly realizes that it is a mere mechanical invention and does not reveal the true nature of time in any sense. One usually associates a watch with time: we look at it to find out what time it is, and a person carrying a watch is aware of the passage of time. Castorp realizes, however, that this is just an illusion, a superficial appearance behind which no physical reality is concealed: his watch had no sense for limits, segments, and measurements of time; it did not pause or give a small sign that marked the end of one thing and the beginning of the next. In other words, there was no "universal tick-tock," one might say following Einstein's line of thinking, beyond the mechanical ticking of his pocket watch (TMM 535, dZB v. 2 306). He goes on to contemplate the way the language assigns various words to time units: today, yesterday, now, always, still, again, next, the past, the future. All of these terms lose their meaning when one day is the same as the next; as time division loses its regular meaning in the sanatorium world with its monotony and routines, language itself stops representing concepts behind which there is seemingly no reality.

In the seventh chapter, the section "Strandspaziergang" (A Stroll by the Shore) connects life and narration, or experience and the art of re-telling it, through the concept of time: "Die Zeit ist das Element der Erzählung, wie sie das Element des Lebens ist,--unlösbar damit verbunden, wie sie mit Körpern im Raum" (dZB v. 2, 300).[xxviii] [17] Time in and of itself cannot be narrated, because apart from human perception of it and apart from the awareness of change, that "something is going on," it has no real meaning. Time

[xxviii] Time is the element of narration, just as it is the element of life—is inextricably bound up with it, as bodies are in space (TMM 531).

must have content to exist and be measurable. Human life endows time with meaning, which can be grasped in retelling, and here Mann's novel echoes once again Proust's perception of time as acquiring significance through remembrance and narration. Mann then compares narration and music: time is also a medium of music. Music, like narration, measures time, because it has rhythm, which has a beginning, middle, and end, and thus the ability to shorten or expand our perception. Music and narration are bound in time, similar to the way—and here the narrator once again connects the two dimensions—bodies are bound in space. For the narrator both arts, the literary and the musical one, exist in the temporal plane (they unfold, move), whereas plastic arts exist in the eternal present: one does not perceive a sculpture as changing from one moment to the next, as a succession in time, but as a constant, unchanging presence.

According to the narrator, in dreams (and here one thinks of Proust and of Freud), as in certain induced states of a highly alert consciousness, time seems dilated, filling years of "dreamed" time, whereas time, as measured by the clock, only takes a few minutes. It is not possible to tell a tale about time, as it would have to have some content to it—time would be perceived only if something is happening—but there is another way to make time the subject of the narrative, as well as its medium. The intention of the novel--the chapter gives away—was to tell a tale of time and about time, and we are once again reminded of Mann's remark that Der Zauberberg is a Zeitroman in two senses of the word. It deals with a historically specific institution of the sanatorium, patients of which can be said to represent the milieu of the pre-war Europe; and it deals with the problem of time it its relation to physical theories and to human perception of it. In addition to it, there is another sense in which the novel under discussion can be called a

Zeitroman: there is a conscious effort on the author's part to make time the principle of the novel's structure, to weave a dimension of time into the very fabric of narration. The narrator himself "steps forward" in several places in the novel to make this goal clear to the reader. For instance, in the essayistic digression on the nature of time following the scene of Joachim's death, Mann reminds the reader of the ability of literature to bring out the relativity of time: he makes a distinction between the actual time, or the time it takes to narrate a story; and the time of its contents, or the time of its events. Thus, the events which happened in five minutes or in one day, can take several hundred pages to narrate; and, on the contrary, the whole life can be summarized in a few paragraphs. This temporal distortion of perspective can be consciously used by the narrator as one of the literary techniques in order to show the illusory nature of time.

The sophisticated narrative structure of Mann's novel is in essence a study of the relative dimensions of time and space as experienced from different perspectives by characters of different temperaments, intellects, and backgrounds. Fictional time and pages devoted to that time in the novel are frequently disproportional: for instance, the first few chapters are relatively short and fast-paced describing the novelty of Hans Castorp's experiences of the sanatorium life. This period in the protagonist's life is marked by change and it goes by relatively fast for him and so do the short beginning chapters of the narration. As he settles into new routines of the sanatorium, experiences all aspects of life in Berghof, makes a transition from a guest to a patient, and slowly loses all his interest in the flatlands, time begins to slow down for him and finally loses nearly all its meaning. As he experiences total freedom and detachment from the real world down below, the chapters describing his life become longer and longer. As Castorp

begins to live in the perpetual present, the final two chapters are immense and take up as much space as the first five. The narrator intervenes to comment about the pace of narration in several places, it is his intention to have the reader feel, through the number of pages and the time it takes to read them, what Hans Castorp felt in terms of the passage of time. This technique is employed by Mann in order to illustrate with the pace of his narration the concept of relativity.

To show the relative nature of temporal perception, Mann mixes the tone of his narration, changing from exaggeratedly lofty, elevated language to precise technical and physical vocabulary, all within the same paragraph, adding to an ironic effect. Time is compared to the vastness and the immensity of the ocean: "O Meer, wir sitzen erzählend fern von dir, wir wenden dir unsere Gedanken, unsre Liebe zu, ausdrücklich und laut anrufungsweise sollst du in unserer Erzählung gegenwärtig sein, wie du es im stillen immer warst und bist und sein wirst..." (dZB v. II, 308).[xxix] And then abruptly this lofty exaltations change to: "Um zu sagen, wie weit dies Schiff vom Ufer entfernt ist, müßtest du wissen, wie groß es an sich selber als Körper ist. Klein und nahe oder groß und fern? (dZB v. II, 309).[xxx] [18] The reader is at once reminded of Hans Castorp's former training as a naval engineer, of his practical occupation, and, on the other hand, his present secluded and unaware existence in the timelessness of the Berghof sanatorium. We have no sense-organ, the narrator states, to help us make judgments about time or space; and we therefore—it is implied--must rely on external marks of the passage of time, such as the change of seasons, aging, comings and goings of the loved ones. At this point the

[xxix] O sea—we sit here telling our story far from you, but our eyes and heart turn toward you now, and we explicitly invoke you, speak your name aloud, making you as present as you constantly have been, are, always will be, in our silent thoughts… (TMM 536-37).
[xxx] To say how far the boat is from the shore you would have to know its size. Small and near, or large and distant? (TMM 537).

narrator once again connects his metaphor of the sea of time to the modern-day concept from the physical domain of relativity:

> Wir gehen, gehen,--wie lange schon? Wie weit? Das steht dahin. Nichts ändert sich bei unserem Schritt, dort ist wie hier, vorhin wie jetzt und dann; in ungemessener Monotonie des Raumes ertrinkt die Zeit, Bewegung von Punkt zu Punkt ist keine Bewegung mehr, wenn Einerleiheit regiert, und wo Bewegung nicht mehr Bewegung ist, ist keine Zeit. (dZB v. II, 309)[xxxi]

In a passage reminiscent of the clear elegance of Einstein's "On the Electrodynamics of Moving Bodies," Mann summarizes the essence of the relativity theory without resorting to any mathematical formulas or technical terms, in a language at once transparent and precise: there is no way to distinguish between a moving body and a body at rest since all motion is relative to something; to say that a body is moving in space one must always specify what is it moving relative to; and since all motion is relative to an observer, measurements of time and space can be done only within a specific frame of reference, for they have no absolute meaning. Einstein himself explained his theory in a somewhat similar passage:

> Upon giving up the hypothesis of the absolute character of time, particularly that of simultaneity, the four-dimensionality of the time-space concept was immediately recognized. It is neither the point in space, nor the instant in time, at which something happens that has physical reality,

[xxxi] We walk and walk—how long has it been now? How far? It does not matter. And at every step nothing changes—"there" is "here," "before" is both "now" and "then." Time drowns in the unmeasured monotony of space. Where uniformity reigns, movement from point to point is no longer movement; and where movement is no longer movement, there is no time. (TMM 537)

> but only the event itself. There is no absolute relation in space, and no absolute relation in time between two events, but there is an absolute relation in space and time, as will appear in the sequel.[19]

Mann's and Einstein's descriptions of the essence of relativity, in the above quoted passages and elsewhere are remarkably parallel, originating in a similar intellectual climate of the period.

The encyclopedic quality of the novel consists not merely in its ability to juggle ideas from various branches of knowledge simultaneously, to evoke concepts from physics to literature, from philosophy to scholastics, but also in its ability to shift from one register to the other, from one kind of tone and vocabulary to the next. Thus, in the section "A Stroll by the Shore" analyzed above, the narrator moves freely from description of his intentions to write a novel *about* time and *of* time, to discussion of time as measuring the flow of music or literary narration, to the Gedankenexperiment describing relativity, to an allegory of the vastness of time imagined as a walk by the sea, to a brief summary of relativity theory, to the medieval notion of time, and finally back to the protagonist and his account with time. This shifting between ideas and registries, reminiscent of a postmodern pastiche, at once places demands upon the reader to be familiar with what the narrator is talking about, and on the other hand, enables the reader to recognize at least one of the concepts among many evoked, and thus every type of reader might perceive himself or herself as knowledgeable and cultured. Mann's novel on the whole, however, while displaying some postmodern features is not reducible to a lightweight pastiche because of its ability to evoke the historical "now" of its characters,

because of its unbending, detailed, and unfailing realism in depicting the time and the place, within which its action is unfolding and its intellectual atmosphere.

The relative nature of time and space for us, earth-bound observers, consists not in the fact that everything is relative and subjective, but in the conclusion that time, depending on the inner predisposition and outer situation of each individual, can appear as long or short. It can be measured by the clock, by the rhythm of certain activities, by taking one's temperature or going on regular walks, by observing the change of seasons, time can even appear to stop altogether when it ceases to be marked by change and activity. It is possible to discuss time, the novel implies, as an aspect crucial to several domains: relativity of time in physics, time marked by the rhythm of music or narration, the timelessness of plastic and visual arts, time as dimension of religious thinking, time in alchemy, time in dreams, time marked by physical-chemical processes that cause aging, disease, and decay, time as interrupted by death, time acquiring significance through work and losing its validity in monotony, and time as a perceived age of a person. Despite these many ways to measure and observe time and to become aware of its duration, the novel affirms the historical aspect of time as primary in human life, the one that is the same to all observers who find themselves bound by the same space and the same socio-historical context: World War I is a crisis that shatters many lives, including that of Hans Castorp's, and, marking the end of one historical epoch and the beginning of the next, brings both frames of reference--the Berghof world and the world down below--together. Time, on the other hand, has an objective reality in that it brings things to pass: patients in the sanatorium do get older and die, despite their perception of time as slow or fast; years do go by; one historical epoch is replaced by another; and in the world of our

size and scale (rather than that of subatomic particles), in the world where people and objects move at normal speeds (not even remotely approaching the speed of light), time flows in one direction—from the past, through the present, and into the future, although the individual perception of this direction might be different. Similar to the theory of relativity, which has a goal of establishing laws that do *not* depend on the circumstances of the observer, the novel's underlying assumption is that it deals with events occurring in the "real" physical world, not merely something that human beings dream of. Private experiences have value in as much as they are a part of the "real" world, not a mere subjective perception of it. Or as Einstein put it, the basis of all science is "the belief in the external world independent of the perceiving subject" (Ideas and Opinions 266).

The novel, as well as Einstein's theories, provide a number of important insights about the nature of reality and human experience, while leaving just as many important questions unanswered. Throughout the novel, the same questions are posed persistently—what is time? what is life?—but remain open ("Was war das Leben? Man wußte es nicht. dZB v.I, 415).[xxxii] Similar to that, Einstein's physics has altered our understanding of the world we live in without providing a complete, final answer about it, despite Einstein's futile attempts to develop a unified field theory. Mann's novel is innovative because it approaches the same theoretical problems, to which contemporary physics strives to find an answer, and it is reflected in its form as well as its content. The main character is not distinguished, but an ordinary young man, suggesting that his perspective is as valid as anyone else's. The novel's main preoccupation is not action which propels its character's into different situations, but ideas and their relevance to contemporary intellectual climate. The narrator is self-conscious and present in the novel, as a self-aware observer

[xxxii] What is life? One didn't know.

of his own experiment, and he parodies old literary formulas such as a Bildungsroman and a comedy of character in order to make his techniques transparent to the reader. Finally, the structure of the novel itself, which the narrator periodically comments on, appears as an illustration of the concept of time dilation and contraction, depending on the situation of the observer.

Chapter Five

Reality as a System of Functional Relationships In Selected Works of Robert Musil and Ernst Mach

> There is no rift between the psychical and the physical, no inside and outside, no "sensation" to which an external "thing," different from sensation corresponds. There is but one kind of elements out of which this supposed inside and outside are formed—elements which are themselves inside or outside, according to the aspect in which, for the time being, they are viewed. *The Analysis of Sensations*, Ernst Mach.[1]

It is no accident that the last chapter of this study is devoted to an analysis of selected writings of Robert Musil in the light of Ernst Mach's epistemology, focusing on such aspects of Mach's thought as his claim of the unity of all physical and psychical phenomena, his denouncement of the "archaic" concept of causality, together with its replacement by the mathematical concept of function, and his appeal to abandon the concept of the ego and acknowledge the primary role of sensations. From a chronological point of view, Musil's monumental novel comes last in the series of fictional writings to be analyzed in this study: its genesis spans the years between 1914, when the writer started work on Der Mann ohne Eigenschaften (The Man Without Qualities), to 1933, when a second volume was published. Musil's life-long, utopian attempt to bring art into a new relation with modern science to achieve the same level of precision in the realm of morality as scientists were able to achieve in their respective domain, is reflected in his early dissertation on Ernst Mach's epistemology, in his later essays, as well as in his last novel, all of which will be considered here. In all of his writing, Musil was interested in formulating new forms of subjectivity, which would allow avoiding traditional roles imposed on the individual by external social pressures--of new ways how to be human—

without renouncing the reality of the ego, as Mach felt compelled to do. Musil's dreams of overcoming the culture's antagonisms and finding a meaningful totality in a unified knowledge might appear utopian in the contemporary climate of rigorous disciplinary divisions and narrow areas of specialization, but the ever increasing number of interdisciplinary publications, conferences, and collaborations show that many actual advances in that direction are not only possible but necessary.

In a similar vein, Mach's writings devoted to the philosophy of science have had such a wide resonance in the twentieth century intellectual history, affecting thinkers as diverse as Einstein and Musil, and serving as inspiration for many impressionists (who, like Mach, saw the world as a flux of sensations) that a summary of this influence must be included in this study.[2] Among many of the radical ideas he developed, was the description of how ordinary conceptions of reality evolve into scientific theories, and his most famous—and frequently distorted—insistence on abandoning the traditional Cartesian notion of the ego. Mach's philosophy of science unsettled any confidence one might still have had in the knowledge science offers about reality, and virtually no thinker or artist of some prominence escaped the influence of his theories.

Critical literature devoted to Musil's works is broad, and it is especially interesting to note the emergence of recent studies dealing with scientific aspects of the novel. As noted in the Introduction, I owe the definition of the generation of 1905 to Luft's Robert Musil and the Crisis of European Culture: 1880-1942. This important work provides an overview of the cultural period, its antagonisms, novel ideas and artistic endeavors, and how all this shaped Musil's work. It is especially relevant to the present

work in its passages describing Musil's interest in psychology and philosophy, as well as its analysis of how the writer's commitment to empiricism was reflected in his writing.

The volume of Musil's essays Precision and Soul: Essays and Addresses, edited and translated by Pike and Luft, provides in the Introduction a description of the cultural and political atmosphere out of which Musil's essays emerged, and also deals with the aspects of the writer's style in the literary, discursive, and reflective genre of an essay.

A more recent Thiher's Fiction Reflects Science (2005) offers a number of provocative insights regarding the idea of the unity—or the lack of it--of knowledge and culture: any discipline or domain can offer only partial knowledge about separate regions of reality. The author discusses Musil's endeavors to bring art in relationship with the intellect and to find some common insights, which might reveal knowledge beyond the fragmented understanding of the two separate domains, one being science, and the other literature. This work was especially helpful because it analyses the ideas of Mach, Heisenberg, and Quetelet, and their relevance for and influence on Musil's writing. In addition, it touches upon Musil's dissertation, which he dedicated to the discussion of Mach's ideas.

Two other recent studies, Subject Without Nation: Robert Musil and the History of Modern Identity by Stefan Jonsson, and The Void of Ethics: Robert Musil and the Experience of Modernity by Patrizia McBride, discuss, respectively, the changed notion of subjectivity and the transformed perception of morality, both making the notion of "void" central to their arguments. Failed quests for essences, intrinsic nature, and original ethical substance revealed a structural void, or a center that was never there, for identity and for morality alike, while profound historical transformations in the Western culture in

the second half of the nineteenth century left some yearning for bygone certainties and foundations. Musil's character, Ultich, treats life in this connection as a vast experimental station, while trying to rescue what remains intact of his individuality.

Finally, worth mentioning here and especially relevant for the present discussion is Sebastian's The Intersection of Science and Literature in Musil's The Man Without Qualities. Sebastian relates the ideas underlying Musil's novel to the epistemic shifts that occurred in the humanities and the sciences at the beginning of the twentieth century. Among radical conceptual changes, some of which are also crucial to the present study, the critic names Maxwell's and Bolzmann's statistical interpretation of thermodynamics, Planck's quantum physics, Einstein's theory of relativity, and Heisenberg's uncertainty principle. One of the premises of the study is that Musil was not fully knowledgeable about specific scientific theories at the time when he wrote his novel, because ideas were very much in flux at the time, and the new models of interpretation of physical reality and human nature have not yet fully emerged. Sebastian, therefore, chooses to focus on the areas with which Musil was well familiar, specifically that of Gestalt psychology. The study discusses Musil's Berlin circle of friends, many of whom were proponents of Gestalt psychology, their major ideas and interests, as well as the connection of the term "Gestalt" to Mach's phenomenalism, Descartes' dualism, and the traces of Gestalt theory in Musil's novel, focusing on several central scenes. Sebastian's study intersects with this dissertation at the point where he discusses the nature of human perception, visual phenomena, and the idea that the mind is responsible for constructing images (to be more precise, the very idea of the intervening cognitive process was in dispute at the time).

Before going any further into the analysis of Musil's novel, it is important to outline some of the central concepts, which emerge from Mach's writing. Particularly unsettling at the time was Mach's analysis of concepts such as causality, the ego, and the absolute time and space, on the one hand, and his views on the nature of scientific laws, on the other. In an attempt to abolish all metaphysics from science—by which he meant any concept that cannot be verified by observation and experience and which therefore only misleads scientific thought--he created a positivistic epistemology so rigorous that it left no room for traditionally human concerns: no statement and no concept in natural science is admissible, according to Mach, unless it is empirically verifiable. In the first chapter of his Die Analyse der Empfindungen und das Verhältniss des Physischen zum Psychischen (The Analysis of Sensations and the Relation of the Physical to the Psychical), entitled "Introductory Remarks: Antimetaphysical," he argues that "the ego is not sharply marked off, its limits are very indefinite and arbitrary displaceable" (13). While concepts such as "body" and "ego" are "designed for provisional orientation and for definite practical ends," they have to be abandoned as "inappropriate" to scientific investigations. He seeks to lead the reader to an inevitable conclusion within his positivistic framework: "The antithesis between ego and the world, between sensation (appearance) and thing, then vanishes, and we have simply to deal with the connection of elements." (14). This anti-essential, decentered, and unstable notion of the "ego" in turn leads to a total re-formulation of the goals of science, because if there is no stable "I," then there is no true division between sensations of the world and the world, between the physical and the psychical, between the observer and the observed.

As indicated in the epigraph above, in Mach's theory physical and psychical phenomena are not two separate entities, but run parallel to each other, and, depending on observational perspective alone, are designated as belonging either to the physical or to the psychical. This division, characteristic of the Newtonian view, which dominated science for over three hundred years, into a stable world of absolute categories, on the one hand, and a scientist-observer who can gain accurate knowledge of this world, on the other, becomes irrelevant in Mach's theoretical writings. The world of physical phenomena and the scientist studying it, are not two separate entities, according to Mach. There is no inside or outside, only elements which occur in different combinations. Even the "ego" is composed of these elements, or sensations:

> Thus, perceptions, presentations, volitions, and emotions, in short the whole inner and outer world, are put together, in combinations of varying evanescence and permanence out of a small number of homogenous elements. Usually, these elements are called sensations. The aim of all research is to ascertain the mode of connection of these elements. (22)

This, of course, remains an area of controversy in many disciplines, such as psychology, philosophy, physics, and literary and cultural studies: many thinkers defend—not without a good reason—the stable although changeable ego as a valid notion and argue that the ego and the world, or the psychical and the physical are ultimately distinguishable domains. In his day, Musil belonged to these thinkers although he always seemed to be engaged in an internal dialogue with Mach's controversial and highly influential ideas.

Mach further argued that if there is no substance behind what we call the "I," or the "ego," then this perhaps artificially constructed concept is not dependent on a causal

relationship between reality and its effects on individual's consciousness; rather the "self" is akin to a force field in which some non-personal elements are temporarily crystallized and then dissolved. It is thus impossible to establish any causal connections between ego and the world, between sensation and thing, or between observed facts and scientific theories. The only task of science therefore is to establish relations between facts, not causal connections; equations of science are based on functional relations between sensations because nothing but sensations is empirically given: "Every scientific problem that can have any meaning for a human individual is concerned with the ascertainment of the dependence of the elements on one another. What in every-day life we call matter is a definite kind of connection between the elements" (243). No other knowledge is available than knowledge deduced from the analysis of sensations, and even atoms and molecules in such a view become a merely "economical ways of symbolizing experience."[3]

Since the protagonist of Musil's novel, Ulrich, is persistently obsessed with the concept of functional relations within such disparate spheres as science, morality, and feelings, it is appropriate to cite Mach's passage describing his views of function and which was cited above, in the Introduction:

> The old traditional conception of causality is of something perfectly rigid: a dose of effect follows a dose of cause. A sort of primitive, pharmaceutical conception of the universe is expressed in this view, as in the doctrine of the four elements. The very word "cause" makes this clear. The connections of nature are seldom so simple, that in any given case we can point to one cause and one effect. I therefore long proposed to replace

> the conception of cause by the mathematical conception of function,--that is to say, by the conception of the dependence of phenomena on one another, or, more accurately, the dependence of the characteristics of phenomena on one another. (89)

Mach's insistence on the necessity of studying the functional relations of phenomena, or the dependence of experiences on one another, has several important implications for science. First, science does not necessarily provide an accurate picture of the world but the most economical and practical: "The biological task of science is to provide the fully developed human individual with as perfect a means of orientating himself as possible. No other scientific ideal can be realized, and any other must be meaningless" (37). Second, following in Darwin's footsteps, Mach places science within the domain of the biological, as but one of the possible manifestations of psychical life necessary to the struggle for existence. The traditional goal of science—achieving as true and accurate knowledge of the world as possible--is radically questioned by Mach who declares science not an instrument of achieving truth but one of the tools of evolutionary survival of mankind. Mach's focus shifts from "true" and "accurate" picture of the world to "economical" and "practical": the former qualities were not achievable without resorting to metaphysics, which was to be avoided by all means, and the latter were not only possible but necessary for preservation of mankind as a biological species.

In a similar vein, Mach speculates that "the philosophical point of view of an average man—if that term may be applied to his naïve realism—has a claim to the highest consideration. It has arisen on the process of immeasurable time without the intentional assistance of man. It is a product of nature, and is preserved by nature" (37).

Science in Mach's epistemology here ceases to be a unique activity of the privileged few, and becomes a mere extension of the views of an "average" man. Moreover, Mach acknowledges his debt to Darwin's work, which in his opinion has provided the impetus for all scientific inquiry (79), even as Lyell's influence is detectable in Mach's theories: the idea that small changes taking place over immeasurable stretches of time add up to significant transformations.

Such a view of the essence of science has another consequence which proved important to Musil's thinking and to the reflections of his protagonist as these are described in the novel: "No point of view has absolute, permanent validity. Each has importance only for some given end" (Analysis 37). Science and philosophy do not explain the world with ever more increasing accuracy and lucidity. One theory can on occasion be replaced with another (as may leaves on a tree), whose explanations appear more practical and economical; the question whether a given scientific theory is "true" thus becomes to some extent irrelevant. Along the lines of these views as they are outlined in Mach's work, Musil's novel is an account of human experience at the bottom of which there is no permanent substance or an absolute, unchangeable narrative, but merely coincidental networks of feelings, desires, and sense impressions. Mach's theory, as much as Musil's novel, is an illustration of this perception of the world in flux, knowledge of which is always incomplete, and in which the "non-present"observer is in the end not too much more than a bundle of sensations.

Mach's ideas had resonated with many contemporary thinkers, who, like Musil, responded to his groundbreaking work on the history and goals of science. Notably, among them was Albert Einstein, whose theory of relativity was inspired by Mach's

rejection of absolute notions of space and time.[4] Another was Heisenberg, who defended the idea of multiple levels of knowledge instead of a final "true" theory. In his "The Physicist's Conception of Nature" he wrote: "When we speak of the picture of nature in the exact science of our age, we do not mean a picture of nature so much as *a picture of our relationship with nature*" (28-29). Although Heisenberg does not go as far as his precursor Mach in suggesting that no scientific theory has absolute, permanent validity, he nonetheless admits that knowledge is larger than science and that science cannot claim to make assertions about nature as a whole.

It is important to remember that the new conceptions of the "self," as well as new ways to view how the self relates to the world and organizes experience into knowledge, were by no means a product of Mach's theories alone. The idea of a unified, stable ego, in control of itself, with strictly demarcated boundaries, was challenged by a number of thinkers, from Freud with his theories of the unconscious to Hermann Bahr with his famous description of "das unrettbare Ich" (the unsalvageable I), from Oswald Spengler with his ideas about the decline of Western civilization to Ferdinand de Saussure and Wittgenstein with their theories of language. These commentators either questioned the concept of a rational subject as the center of power and knowledge, or discarded it as an illusion. Neither was such questioning limited to Austrian thinkers alone, but was characteristic of the entire European intellectual climate between the wars. In addition to this reformulation of individuality, the focus shifted from an individual to some form of a group: Darwin had written the history of the entire species; Claude Levi-Strauss speculated on whole cultures; Freud focused on humanity in general; Spengler devoted his account to Western civilization as a whole, and Marx theorized about social classes.

The unique human being, the life of the individual, was ceasing to be the sole focus of social, psychological, biological, and cultural worldview. In fact, the unique individual soul had been considered the essence of what the person is from the times of Plato. Identities were believed to be grounded in inner essences—which were differently believed to be the soul, or one's "true" self, or consciousness--and most progressive intellectuals believed that humans had been made in the image of God. From Michele de Montaigne's famous confession "I am myself the matter of my book," to Goethe's exploration of a lonely individual caught up between the opposing forces in The Sorrows of Young Werther, from Descartes formulation of the essence of the mind in thinking to Locke's Essay Concerning Human Understanding, individuals were considered to be unique among other creatures and having an inner essence or a center (the soul, the mind, the individual self, memory, or consciousness). By the end of the nineteenth century, a number of developments prepared a revolution in thinking about human nature. Among them were the physiological inquire into the brain (the theory of functional localization and experimental psychology), Darwin's theory, which placed humans among other animals, Quetelet's concept of the "average man," Marx's idea that individuality is shaped by economic and social order, and Freud's belief that human conflicts are the result of fundamental biological drives. As a result of this change, humans were now viewed not only belonging with the rest of nature, but as constituted by social and cultural practices: a unique individual was now viewed as part of a larger group (a species, social class, culture). It is to this trend that Musil was responding with his essays, novellas, and his last monumental novel, trying to combine the concept of

scientific precision with some attention paid to an individual case. His "man without qualities" is a symbol of this revolution in thinking about human beings.

Musil's response to Mach's views of causality, epistemology, and subjectivity, was complex; one might say that the author of the novel about the man without qualities was engaged in an ongoing inner dialogue with Mach's views throughout his career, and that he, undoubtedly, felt torn, as his writings show, between Mach's dismissal of the self and a conflicting desire to defend a realist view of the self. It is for this last purpose—to defend uniquely human concerns among increasingly popular statistical presentations of social reality and, among those, views that proposed functional relations instead of the "outdated" model of causality—that Musil felt it necessary to develop another way of thinking. This would mean combining scientific precision with concerns of the soul. In the Introduction to the English volume of Musil's essays, Luft writes that "Musil's passionate commitment to individuality and the recovery of an immediate relation to experience was directed against the nineteenth century liberal illusions of individualism and accomplishment, but he was also opposed to all fixed ideologies (religious, political, professional), and to all other encapsulations of the self." [5] Along these lines, Musil's reaction to Mach's views must here be considered in the light of the writer's attempt to negotiate between the outdated models of individuality and the ways by which individual identities are standardized through a rapid process of modernization. To this end, his opening description of the weather, Ulrich's position as non-participant observer of life, the description of his residence, and the idea of the essay as a genre able to unite the objectivity of science with concerns for an individual case, will be analyzed.

If in Mach's theories the subject-ego turns into a series of functional responses to its environment or into a network of sensations that emerge in various combinations and then dissolve again, while the artificially "constructed" concept of the ego is regarded as a matter of mere practical convenience, then Musil's goal is two-fold. On the one hand, the writer's intention was to show that the "I" constructed by outdated stereotypes and roles provided by the previous liberal generation of the "fathers,"as well as by clichés that no longer express the inner world of a generation living through the experience of modernity--in other-words the "I" that feels trapped in the predetermined roles--is a drama of the modern individual. On the other, Musil's utopian aspiration is to rescue the tiny core of subjectivity, caged and compressed by various conditions of modernity, such as an urban environment (in which one moves from one predetermined slot to another), a fragmentation of professions into strict areas of specialization, and the emergence of mass movements and parties. These tensions are made manifest throughout the novel, as when, for instance, during one of Ulrich's numerous wanderings about the city, he reflects about the reasons for preferring to be a man without qualities: "In diesem Augenblick wünschte er sich, ein Mann ohne Eigenschaften zu sein" (DMOE 130).[i] This wish entails not accepting a destiny predetermined for him by his class, wealth, education, and social standing, and remaining in a condition of weightlessness. Only in that way can Ulrich free himself from the force that determines even the slightest details of an individual's life, including his character, his feelings, his dwelling, and his profession, without any real cooperation on his part. At the same time, while refusing to

[i] At this moment he wished he were a man without qualities (MwQ 136). (Here and throughout this chapter the German quotations provided within the text will follow Robert Musil, Der Mann ohne Eigenschaften. Reinberg bei Hamburg: Rowohlt, 1978. English quotations provided in footnotes will follow Robert Musil, The Man Without Qualities, trans. Sophie Wilkins and Burton Pike, New York: Knopf, 1996).

acquire any qualities that a man of his standing would usually possess--such as a definite career path, a stable family, and a dwelling reflecting his taste--Ulrich wants to preserve that personal inner essence, an inner depth that fails to find any corresponding expression, or so he believes, on the outside:

> In dem erfrorenen, versteinten Körper der Stadt fühlte er ganz zu innerst sein Herz schlagen. Da war etwas in ihm, das hatte nirgends bleiben wollen, hatte sich die Wände der Welt entlang gefühlt und gedacht, es gibt ja noch Millionen anderer Wände; dieser langsam erkaltende, lächerliche Tropfen Ich, der sein Feuer, den winzigen Glutkern nicht abgeben wollte. (DMOE 153)[ii]

Musil's quest to "rescue" individuality, to defend the „the cooling, absurd drop 'I'," which has been losing its former significance in all-powerful scientific and theoretical advances, rapid modernization and growth of the cities, secularization, the decline of the former economic elites and the emergence of the new working class, began with his doctoral dissertation entitled "Beitrag zur Beurteilung der Lehren Machs" (Contribution to the Criticism of Mach's Works), published in 1908. Musil's scientific training and knowledge were both extensive and profound, covering such diverse areas as engineering, physics, optics, mathematics, experimental psychology, and philosophy—areas with which he busied himself before turning to the free-lance writing of essays and fiction. This at times agonizing quest to find a meaningful occupation and to avoid cultural clichés is later reflected in Musil's protagonist's three attempts to become a man

[ii] Within the frozen, petrified body of the city he felt his heart beating in its innermost depths. There was something in him that had never wanted to remain anywhere, had groped its way along the walls of the world, thinking: There are still millions of other walls; it was this slowly cooling, absurd drop "I" that refused to give up its fire, its tiny glowing core (MwQ 162).

of importance: Ulrich tries to find a meaning in life by becoming an officer, then an engineer, and at last a mathematician, after whose failure he decides to take a year-long leave of absence from life altogether.

In his dissertation, Musil criticizes Mach's views of causality and his idea of the arbitrariness of scientific concepts, in other words, defending his belief in an underlying reality beyond the formulation of physical laws and beyond scientific theories that replace one another, as postulated by Mach. Although throughout his life Musil was not able to free himself of doubts, as reflected in Ulrich's reflections as to whether the solidity of the world exists, it was in this early work—his doctoral thesis—that his criticism of positivist epistemology was most sharp. To this end, the young scientist wants to find weak points in Mach's epistemology which declared that theories replace one another as mere functional descriptions of reality and that causality was, therefore, an "obsolete" concept, hindering the development of science. In Musil's view, causality is a necessary principle without which one cannot live; defending his notion of reality, he wrote that science's descriptions of networks of sensations are not mere arbitrary connections, because any representation of reality is restricted by natural necessity. He further pointed out that Mach's concept of sensations is given no rigorous definition in his writings, and that Mach's postulate that nothing but sensations exists is impossible to prove scientifically: science, according to Mach, provides a useful but not a realistic picture of the world. Without referring to secondary sources, Musil attempts to prove that Mach's epistemology contradicts itself and that causal laws are not entirely illusory.[6] While criticizing Mach's epistemology, Musil was never free of its influence, and the writer's response to Mach's theory is representative as one of the central debates about

what knowledge is, and how much we can know, in the first quarter of the twentieth century. Einstein was another notable example of a thinker inspired by Mach's rejection of unexamined metaphysical notions, who opposed certain aspects of Mach's theory, such as his limitation of knowledge to immediate sense data and his criticism of the concept of causality. Both, the young Musil and Einstein, defended the position that there is a knowable reality governed by causal laws and accurately, if partly, explicable by scientific laws. To summarize: in writing his doctoral dissertation, Musil wanted to overcome that version of positivism that turned the world into the mind's representation: "He was a fiction writer who did not believe that the object of knowledge is a fiction."[7]

In an effort to examine the transformed relationship of the individual to his or her culture, altered by science and technology, and to find a suitable language to write about the human experience under the conditions of modernity, Musil turned to the essay genre. Carrying on in the intellectual tradition of Emerson, Montaigne, and Nietzsche, as well as Thomas Mann, Walter Benjamin, and Georg Lukàcs, he made the essay genre central to his thinking in trying to integrate scientific precision and inwardness with a new kind of language. In his essays, ideas, feelings, and reactions to contemporary events are merged in a fluid constellation and resist temporal sequences. Many of his essays have important thematic connections with his earlier criticism of Mach's positivism, as well as with his late novel about the man without qualities, bringing to the fore his concerns with ethics, feelings, and individual experience. What is more, "essayism"—Musil's term for his attitude toward this sort of work--plays a prominent role in the novel, in which whole sections are written in essay form, either from Ulrich's perspective or from that of the anonymous narrator. While it is impossible to analyze in the most complete detail Musil's

essays under the constraints of a single chapter, it is nonetheless important to focus on a few central ideas relevant to his lines of thought.

One of his early essays, "Das Unanständige und Kranke in der Kunst" (The Obscene and Pathological in Art), written in 1911 for the literary journal Pan, argues that "art ought to be permitted not only to depict the immoral and the completely reprehensible, but also to love them" (Precision and Soul 5). This idea directly relates to his preoccupation with the concept of functional relations: the obscene and pathological in art allows us to trace its connections to other aspects of life, and it is only through the knowledge of these connections that one can achieve the fullest representation of life in art. Comparing the goals of art to those of science, he urges that to depict something as an artist means

> to represent its connections to a hundred other things; because objectively nothing else is possible, because only in this way can one make something comprehensible and tangible,…as even scientific understanding can only arise through comparisons and connections [...]. And even if these hundred other things were to be obscene or pathological, their connections are not, and the tracing of these connections, never. (Precision and Soul 6)

The goals of art are similar to those of science in that both domains provide freedom from practical usefulness, the bourgeois morality, and instrumental reason. Musil illustrates his ideas by comparing the "harmless anatomical indecencies and perversities" that one finds in scientific books with the type of attitude that artists should assume in depicting reality: one should not avoid exploring any phenomenon whether it belongs to physical or inner life, so as to obtain as full an understanding as possible of what it means

to be human. For Musil the goals or science and art intersect: "one's interest in these processes is direct, it seeks knowledge. Art too seeks knowledge; it represents the obscene and pathological by means of their relation to the decent and healthy, which is to say: art expands its knowledge of the decent and the healthy" (Precision and Soul 6).

One may here be reminded of the sexual murderer Moosbrugger from Der Mann ohne Eigenschaften, or the chapters from the second volume of the novel describing Ulrich's incestuous relationship with his sister Agathe. Here, too, Musil is faithful to his program of depicting all aspects of morality and health, the good, as well as the perverse, to show how they connect in the inner world of the individual with the particular circumstances of his or her life. There are, however, significant differences between the ways in which science reveals those connections as opposed how this may be managed in art: art represents "not conceptually but imagistically, not in generalities but in individual cases" (Precision and Soul 7). Literature, and especially the mode of the essay, or specifically, his type of essay, were, in Musil's view, the only suitable medium for exploring an "individual case" with the precision of science and always in its connection to particular circumstances. Moreover, "the artist is further concerned with expanding the range of what is inwardly still possible," which is to say that art should not reduce the inner world of the individual to a set of pre-given, deterministic laws, but explore the possibility, which is defined as an aspect of conceivable reality that is possible but has not been realized (it will be defined in the novel as "noch nicht geborene Wirklichkeiten").[iii] It is evident that in this early essay Musil was already sketching out one of the central ideas later to be explored in his novel--the relationship between "der

[iii] realities as yet unborn (MWQ 12).

Wirklichkeitssinn" (the sense of reality) and "der Möglichkeitssinn" (the sense of possibility).

In his essay about the obscene and pathological in art, Musil also comes to the conclusion that "to love something as an artist, therefore, means to be shaken not by its ultimate value or lack of value, but by a side of it that suddenly opens up" (Precision and Soul 7). The writer questions the usefulness of art usually defined as the ability of art to teach, to inspire, to show an example, to depict what is best in man, and points out that the main goal of art, as well as of science, is instead to explore, to seek knowledge, no matter how perverse those insights might appear within the accepted moral codes. It might be interesting to compare Musil's ideas on this point with those of his early contemporary Oscar Wilde (Wilde was born in 1854, Musil in 1880). Wilde, who similarly to Musil attacked moral values and social conventions when they are raised to absolutes, likewise saw no need for art to be useful, to teach the reader, or to provide a moral lesson. "All art is quite useless," he wrote in "The Preface" to his only novel The Picture of Dorian Gray, and this idea runs parallel to Musil's statement cited on top of this paragraph. Wilde, who famously stated that the goal of art was to create beautiful things, did not share Musil's artistic goal of seeking knowledge, however both writers' work revealed their inner conviction that "there is no such thing as a moral or an immoral book."[8]

Musil's formulation of artistic and scientific goals, while similar to Wilde's in its treatment of usefulness and morality, is quite different from Mach's. Mach, who saw science's primary role as a practical instrument in the struggle for survival and the most powerful tool for improving the conditions of human life, had remarked that "the

biological task of science is to provide the fully developed human individual with as perfect a means of orientating himself as possible. No other scientific ideal can be realized, and any other must be meaningless" (The Analysis 37). Mach stressed the practical value of science and critiqued the idea of seeking pure knowledge.

Musil's defense of the artist's exploration of reality without regard for the question of value is relevant in the context of this discussion because all of the writers included here devoted their energies to exploring phenomena often regarded as "beyond" the observable, the acceptable, or the permissible. Kafka's monstrous figures, or his animal characters, Rilke's descriptions of the sick, the dying, and outcasts, Mann's depiction of the sanatorium world of the moribundi, not to mention his exploration of the mechanisms of homosexual desire in "Der Tod in Venedig," all point to an artistic interest in what was generally considered the pathological, the immoral, and the sick. As Musil observes, the age was obsessed with the exploration of the boundaries between health and decadence, and this inquiry into hitherto concealed aspects of life was reflected in the general atmosphere of anxiety about the criteria which might help to distinguish between health and illness, between what is moral and what is not. This characteristic anxiety is in addition tightly bound up with the question of censorship—the problem Musil seeks to address in his essay. The ongoing controversy over censorship in the journal Pan inspired his discussion of the disturbing aspects in art, as well as his thoughts on the question of usefulness of art.

Musil's novel, too, has a narrative thread which addresses a similar issue of sometimes unclear boundaries between the pathological and the healthy. In the novel, doctors and lawyers are having trouble with settling the dispute about Moosbrugger's

putative mental illness and his unresolved responsibility for his actions. He is either mentally ill and not accountable for the murder, or healthy and should be therefore prosecuted for his crime; the case is complicated by the fact that Moosbrugger denies his own insanity and seems to enjoy the publicity aspect of his trials. Insanity and health are hard to distinguish between in his case, and the psychiatrists finally find him—wrongly as it seems--sane and responsible.

In a similar vein, the earlier essay emphasizes that it is not always easy to distinguish between the sick and the healthy, for "in every healthy soul there are places identical to those in sick ones, and that deciding which is which depends only on the totality," a total number of details that constitute each case (Precision and Soul 7). By addressing the relationship between the sick and the healthy, the narrator makes it clear that he views morality and health in terms of functional relations, which is not to say that Musil proposes utter moral relativism, only that "the boundaries [between them] must be drawn anew" (Precision and Soul 8). In such a novel conception of morality and health, there is no absolute good or absolute evil, only the need to decide about each in each case and for each individual.[9] Appropriating Mach's notion of functional relationships for his conception of morality, Musil suggests, that there is no way to decide what is perverse and immoral apart from what is healthy and moral, and he remains faithful to this attitude in his great novel as well. Ulrich, the main character of the novel is described as believing in morality without believing in any specific moral system.

Another of his essays, often cited and certainly worth including here, is "Der mathematische Mensch" (The Mathematical Man) (1913). For Musil, who was at home with both mathematics and physics, mathematics remained the model of intellectual

inquiry, which ought to be applied in human sciences, too. Once again, science is described as "not goal-oriented, but uneconomical and passionate" (Precision and Soul 41), rejecting the dominant view of science as a utilitarian practice. For a fiction-writer this seems a curious essay, because in it Musil describes how mathematical formulas provide the foundation of a contemporary existence increasingly dependent on technology: "Thanks to mathematics we bake our bread, build our houses, and drive our vehicles" (Precision and Soul 41). Musil describes the path which contemporary life must per se follow: from purely mathematical formulas, to physical laws, to technological discoveries, to finally the inventions of machines. The striking feature of this situation was that even though mathematicians "formulated usable notions of certain principles that yielded conclusions," no one could be certain about "the fundamentals of the whole thing" (Precision and Soul 41-42). The uncertainty to which Musil refers is partly due to a century-old dispute, which with Mach's publications had raised afresh, about whether mathematics was indeed based in reality and thus reflected the world's basic principles, or whether it was purely a construct of human mind, which had succeeded in imposing its ideas on external reality.[10] Musil concludes that the outcome of this dispute is to some extent irrelevant:

> They [the mathematicians] actually looked all the way to the bottom and found that the whole building was standing in midair. But machines worked! We must assume from this that our existence is a pale ghost; we live it, but actually only on the basis of an error without which it would not have arisen. Today there is no other possibility of having such

> fantastic, visionary feelings, as mathematicians do. (Precision and Soul 42)

The absence of some unifying foundation in life does not preclude meaningful action and artistic endeavor. Musil and his contemporaries found themselves in a transitional situation, in which the old certainties were questioned and the new ones were yet to be formulated, or, in his own words: "…basically culture has always been unified, whether through religion, social convention, or art" (ibid. 42). Modernization of society and development of sciences had eroded these traditional ways of unification; the foundation was beginning to be shattered through the ever-speeding development of technology, growth of big cities, and new conditions of life in every sphere, as well as through the questioning of the very foundations of knowledge by Mach, Poincare, and Heisenberg, among others. It is therefore the writer's task, according to Musil, to mobilize his or her intellectual energy in a unity of mind and spirit, trying to reconcile scientific precision with concerns of the soul.

The form that allows one to mediate between scientific precision and objectivity, on the one hand, and problems of feelings and morality, on the other, is the essay. Musil had formulated his ideas about what his type of essay should be as clearly as possible: "On the Essay" states that it is "the strictest form available in an area where one can*not* work precisely" (Precision and Soul 48). There are areas, such as those of ethics and aesthetics, that do not admit of an ordering modeled on mathematical logic or scientific laws, but in which one can nonetheless achieve a level of precision, akin to that of science, if one takes into account all the connections and possible combinations in each case. The essay bridges two fields: "It takes its form and method from science, its matter

from art" (Precision and Soul 49). The starting point of the essay ought to be identical with that of natural science--it proceeds from facts to discovering ever new connections between ideas, feelings, and desires. The essay in Musil's conception seeks to capture what lies "beyond" observation in the empirical sense: "these facts are not generally observable, and also their connections are in many cases only a singularity" (Precision and Soul 49). Repulsed by the prospect of any totalizing solution, or any absolute formulation in spheres of morality and art, he becomes a firm believer in partial solutions: "There is no total solution, but only a series of particular ones" (ibid. 49). Any claim of superior knowledge must be avoided in the essay. Among his great predecessors Musil names Emerson, Maeterlinck, Nietzche, Epicurus, and the Stoics. Rathenau (after whom Count Leinsdorf of The Man Without Qualities is modeled) is, on the other hand, an example of how an essayist degenerates into a "philosophical dilettante" (Precision and Soul 51).

Addressing the function of the writer in modern society in the "Sketch of What the Writer Knows" (1918), Musil describes a "specific attitude toward and experience of knowledge" (62). This essay contains the most precise definition of Musil's neologisms—ratiod and nonratiod spheres--and this definition proves important for Der Mann ohne Eigenschaften because the two areas appear to be incommensurable domains, two modes of understanding that run side by side. The novel's central theme is Ulrich's utopian dream to unite the two disjointed spheres into a single, meaningful mode of representation. The ratiod territory is defined in the essay as "everything that science can systematize, everything that can be summarized in laws and rules" and everything that can be "unambiguously described and communicated" (Precision and Soul 62). The

ratiod sphere is dominated by the concept of fixed and solid, but the problem with contemporary ethics, as Musil points out, is that it is also treated as something static and fixed, dominated by "petrified" notions that no longer apply to an ever-changing reality:

> Think of the popular example of the variation of the commandment "Thou shalt not kill," from murder through manslaughter, killing an adulterer, duel, and execution, all the way to the war; and if one seeks the unifying rational formula for all this, one will find that it resembles a sieve, in using which the holes are no less important than the solid mesh. (Precision and Soul 63)

With this last metaphor of a sieve Musil seems to be referring to nothing other than the rules, or the "solid mesh," as opposed to the exceptions, or the "holes." If the ratiod territory is dominated by the rule, then the nonratiod is characterized by the dominance of exceptions over the rules. The realm of the "infinitely variable and individual" is not accounted for by the ratiod sphere, an example of which is science; there is, however, only a gradual shading between these two domains, a description which resists any viewing of knowledge in terms of binary opposites. For Musil, who was committed to exploring things in terms of their relationship to one another, considered that any idea loses its meaning if removed from its context, for "one can just as easily maintain the opposite" (Precision and Soul 64). It follows from this definition of the two domains, that it is the function of the writer to seek ever new connections, constellations, and "appealing models of how one can be human, to invent the inner person" (ibid. 64). He opposes the "middle-class" view of the writer as outsider: he considers art at all times

fully implicated in society rather than having a superior vantage point outside of it.[11] And this formulation of the writer's position remains relevant even today:

> But in truth the writer is an outsider only insofar as he is the person who pays attention to exceptions. He is neither "madman" nor "visionary," neither "the child" nor any other deformation of reason. Nor does he apply any different kind of capacity of perception than the rational person. (Precision and Soul 64)

The search for new ways to be human and the reinvention of the inner person are precisely Ulrich's preoccupations in Der Mann ohne Eigenschaften, a novel that explores, among other things, a role of science in determining one's experience of the world. To illustrate how Mach's ideas about the world dissolving into a flux of sensations, the unstable "I,"and his understanding of the reality in terms of functional relations, found their expression in the novel, it is necessary to focus on several of its passages. The man without qualities is Ulrich—significantly, the reader does not find out his name until the fifth chapter—a thirty-two year old Austrian, who possesses many pleasant attributes: an excellent education, fine abilities in several fields, and considerable wealth; he also has a father "with qualities" and with a number of important connections. After three failed attempts to become a man of "importance," by turning himself into an army officer, an engineer, and a mathematician, he decides to take a year-long leave of absence "from his life" to sort out his thoughts and because he cannot find suitable uses for his well-trained abilities:

> In wundervoller Schärfe sah er, mit Ausnahme des Geldverdienens, das er nicht nötig hatte, all von seiner Zeit begünstigten Fähigkeiten und

> Eigenschaften in sich, aber die Möglichkeit ihrer Anwendung war ihm abhandengekommen; und da es schließlich, wenn schon Fußballspieler und Pferde Genie haben, nur noch der Gebrauch sei kann, den mann von ihm macht, was einem für die Rettung der Eigenheit übrigbleibt, beschloß er, sich ein Jahr Urlaub von seinem Leben zu nehmen, um eine angemessene Anwendung seiner Fähigkeiten zu suchen. (DMoE 47)[iv]

After withdrawing from professional life, Ulrich is drawn into a Parallelaktion, an absurd campaign aimed at planning the celebration of the seventieth birthday of the Austro-Hungarian Emperor on the throne, which is to coincide with the German Kaiser's thirtieth anniversary in 1918—a celebration which, as the reader knows, cannot have taken place because of the outbreak of the First World War in 1914. Ulrich's involvement in this campaign allows Musil to depict a number of characters who represent various social types, as well as the irony of a society which was steadily but unknowingly heading into menaces. In the novel's second book, which remained unfinished, Ulrich, who after the sudden death of his father re-discovers his forgotten sister Agathe, is shown as losing interest in the campaign and devoting himself instead to a search for a mythical Other condition ("ein anderer Zustand"), which brings him into an incestuous union with his sister. The unfinished state of the novel has caused much speculation among critics over whether Ulrich and Agathe find their way back to "reality," though a discussion of this, as well as other issues raised in the second book, remain beyond the concerns of the present inquiry. Suffice it that Musil's depiction of the incestuous relationship has been

[iv] With wonderful clarity he saw in himself all the abilities and qualities favored by his time—except for the ability to earn his living, which was not necessary—but he had lost the capacity to apply them. And since, now that genius is attributed to soccer players and horses, a man can save himself only by the use he makes of genius, he resolved to take a year's leave of absence from his life in order to seek an appropriate application for his abilities. (MWQ 44).

roundly dismissed as immoral by some, although it seems clear that the writer was most interested in the mythical dimensions of the incest theme, as well as in those aspects of it that allowed one to conceive of a life beyond "normal" social roles. In the novel, the siblings yield to their impulses against the order precisely because the incest taboo is a fundamental part of every social order (DMoE 1673).

In Chapter 13 of the novel's first part of the novel, Ulrich's decision to take a vacation from life is motivated by his reflections on the notion of genius:

> Es hatte damals schon die Zeit begonnen, wo mann von Genies des Fußballrasens oder des Boxrings zu sprechen anhub, aber auf mindestens zehn geniale Entdecker, Tenöre oder Schriftsteller entfiel in den Zeitungsberichten noch nicht mehr als höchstens ein genialer Centerhalf oder großer Taktiker des Tennissports. (DMoE 44)[v]

Previous humanistic ideas of „the genius" or „the great man" were now becoming obsolete: they had relied for their vitality on individualistic, pre-industrial society, which was being replaced by the mass culture of big cities. Ulrich feels that he is failing to become a man of importance under conditions of modern life, because the very definition of a genius is no longer applicable solely to an outstanding scientist or man of letters, but is spilling over to embrace other phenomena of modern culture. Language clichés of the former era are still very much in use, but they no longer mean what they once had. Even in science, Ulrich felt that he climbed one mountain range after another without ever seeing a goal: "Er besaß Bruchstücke einer neuen Art zu denken wie zu fühlen, aber der anfänglich so starke Anblick des Neuen hatte sich in immer zahlreicher werdende

[v] The time had come when people were starting to speak of genius on the soccer field or in the boxing ring, although there would still be at most only one genius of a halfback or great tennis-court tactician for every ten or so explorers, tenors, or writers of genius who cropped up in the papers. (MWQ 41)

Einzelheiten verloren…" (DMoE 47)[vi] Similar to Rilke's character, Malte Laurids Brigge, Ulrich experiences his own life and his thoughts, as fragments that fail to add up to a unified goal, direction, and a corresponding mode of representation. As the self is dissolved into a stream of sensations, according to Mach, so is the old, stable order is dissolved into a flow of modern culture. Science had undermined the firm sense of reality and ego, by questioning the distinction between the two. Traditional assumptions about the self as the center of identity, character, and mastery of nature, as well as former definitions of causality, were in contradiction with the new ideas proposed by science, which began to view reality and the self as complex, dynamic relations of energy, matter, time and space. Just as Mach's self-portrait without a face comes to represent the notion of the ego devoid of any intrinsic inner essence, so is Musil's character without qualities symbolizes the subject who recognizes to what extent his identity is constructed by the social order.[12] And if identities are constructed from the outside, if they are only a flow of functionally related characteristics, how is one supposed to define and defend what is uniquely individual about each person? While grappling with questions such as this, Ulrich comes to the conclusion that

> Wahrscheinlich ist die Auflösung des anthropozentrischen Verhaltens, das den Menschen so lange Zeit für den Mittelpunkt des Weltalls gehalten hat, aber nun schon seit Jahrhunderten im Schwinden ist, endlich beim ich selbst angelangt, denn der Glaube, am Erleben sei das wichtigste, daß man

[vi] He had now acquired bits and pieces of a new way to think and feel, but the glimpse of the New, so vivid at first, had been lost amid the ever-proliferating details… (MWQ 44)

> es erlebe, und am Tun, daß man es tue, fängt an, den meisten Menschen als eine Naitvität zu erscheinen. (150)[vii]

The dissolution of the anthropocentric view of things had started, as the narrator points out, centuries ago, and was prepared by several processes. To name a few, the increasing process of secularization was displacing man formerly viewed as the crown of all creation; Darwin's discovery of man's "humble" origins in the common progenitor with the apes questioned man's special status among other creatures; Freud's exploration of the unconscious substratum of psychic life opened the door for discussion about the divided self; and Mach's insistence that the ego must be given up in scientific thought had further affected the way one viewed individuality.

Finally, this dismantling of the anthropocentric point of view had arrived at the notion of the "I" itself, forcing the protagonist, as well as the narrator, to wonder about the problems that arose. If the "I" is not real, then who experiences the sensations, to whom do feelings belong, and who can claim a character? If the "I" is only an illusion, then who is speaking, and who is writing the novel?

In this connection, one thinks of an odd self-portrait by Mach, which he includes in his The Analysis of Sensations. He draws an illustration of himself without looking in the mirror, and a result is a portrait depicting partial view of his study, his torso, part of his nose and beard, but no face.

[vii] Probably the dissolution of the anthropocentric point of view, which for such a long time considered man to be at the center of the universe but which has been fading away for centuries, has finally arrived at the "I" itself, for the belief that the most important thing about experience is the experiencing, or of action the doing, is beginning to strike most people as naïve. (MwQ 159).

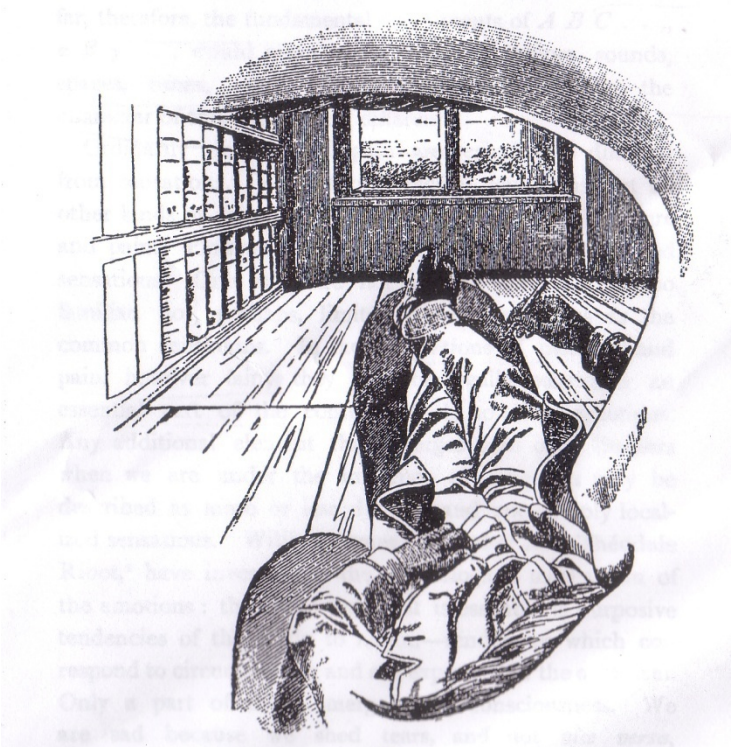

Fig. 6. A Self-Portrait by Mach. The Analysis of Sensations, (New York: Dover, 1959), 19.

This faceless representation of himself is the best illustration of the illusory nature of the "I": we see ourselves only partially and without a head. Nonetheless, the portrait exists, and so do Mach's works, even though the actual person Ernst Mach, according to his own depiction, may be but a bundle of sensations changing over time.

In his novel, Musil is trying to find an appropriate tone and voice, which would correspond to this situation with identity and selfhood just described above. The narration is indeed woven out of many voices, points of view, essays, and reflections, whose author is not always specified, and the events frequently remain suspended as in mid-air; all of these elements attempt to address questions about the place of the "self" in the modern world but remain without a definite conclusion. The utopian goal to escape established

social roles, on the one hand, and to preserve the "absurd, cooling drop 'I'," on the other, leads into the type of narration that avoids narrative conventions, while satirically using the old language clichés.

How in fact does one tell a story, if the notion of authorship is so tightly bound up with the idea of a reliable speaking narrator? Before the reader gets a chance to become familiar with the text, he or she may be intrigued by the unusual headings, running throughout the text, such as "Erster Teil. Eine Art Einleitung" („Part One. A Sort of an Introduction"), or Chapter One "Woraus bemerkenswerter Weise nichts hervorgeht" („From which, remarkably enough, nothing develops") or "Zweiter Teil—Seinesgleichen Geschieht" ("Part Two. Pseudoreality Prevails"). While defying the readers' generic expectations that any novel ought to be about specific events befalling a specific person, Musil ironically emphasizes the fact that this is a work about a man without qualities in which nothing takes place at all. The first paragraph of Chapter One, presents a description of a meteorological situation across Europe and seems couched in the language of a scientific text: "Über dem Atlantik befand sich ein barometrisches Minimum; es wanderte ostwärts, einem über Rußland lagernden Maximum zu, und verriet noch nicht die Neigung, diesem nördlich auszuweichen. Die Isothermen und Isotheren taten ihre Schuldigkeit" (DMoE 9).[viii] It continues in the same vein, with an abundant use of scientific jargon, which however only adds up to a parody of a scientific text: all the technical features fail to transmit any information whatsoever about a specific situation. The use of a scientific vocabulary in the absence of any quantitative data disguises the fact that this is only an imitation of a scientific style. The paragraph ends

[viii] A barometric low hung over the Atlantic. It moved eastward toward a high-pressure area over Russia without as yet showing any inclination to bypass this high in a northerly direction. The isotherms and isotheres were functioning as they should. (MwQ 3).

with a sentence which conveys a seemingly identical bit of information in a different mode: “Mit einem Wort, das das Tatsächliche recht gut bezeichnet, wenn es auch etwas altmodisch ist: Es war ein schöner Augustustag des Jahres 1913” (DMoE9).[ix] The seemingly more exact, scientific mode, actually conveys less specific information than this less precise, “old-fashioned“ way of describing the weather. The last description in the ordinary language is, of course, anthropocentric: calling a day “nice” requires a person experiencing it as pleasant. The two modes of description are incommensurable, through here running parallel to each other and without quite converging into one synthetic whole: they form as well an allegory for the narrator’s troubles in finding ways to account for the individual, human case in the face of objective, generalizing scientific representations.

After establishing the year of the narration--1913--the chapter continues by specifying the place of narration, Vienna, only to follow up on this announcement by telling us after that the name is unimportant:

> Es soll also auf der Namen der Stadt kein besonderer Wert gelegt werden. Wie alle großen Städte bestand sie aus Unregelmäßigkeit, Wechsel, Vorgleiten, Nichtschritthalten, Zusammenstößen von Dingen und Angelegenheiten, bodenlosen Punkten der Stille dazwischen, aus Bahnen und Ungebahntem, aus einem rhythemischen Schlag und der ewigen Verstimmung und Verschiebung aller Rhythmen gegeneinander, und glich im ganzen einer kochenden Blase, die in einem Gefäß ruht, das aus

[ix] In a word that characterizes the facts fairly accurately, even if it is a bit old-fashioned: It was a fine day in August 1913. (MwQ 3).

> dem dauerhaften Stoff von Häusern, Gesetzen, Verordnungen und geschichtlichen Überlieferungen besteht. (DmoE 10)[x]

This description of a peculiar rhythm of a big city is reminiscent of other texts from the same period, for instance, Döblin's Berlin Alexanderplatz, Joyce's Ulysses, and Rilke's Malte Laurids Brigge. It also echoes Georg Simmel's classical essay "The Metropolis and Mental Life" (1903), which similarly describes an affect of the shocks of urban life on individuality. Remarkably, Musil's description of how an individual in the urban metropolis is bombarded by many different stimuli can also be viewed in connection with Mach's description of various impressions affecting people:

> Colors, sounds, temperatures, pressures, spaces, times, and so forth, are connected with one another in manifold ways; and with them are associated dispositions of mind, feelings, and volitions. Out of this fabric, that which relatively more fixed and permanent stands prominently forth, engraves itself on the memory, and expresses itself in language… Absolute permanent such complexes are not. (The Analysis of Sensations 2)

Impressions of the city, similar to sensations in Mach's theory, are always ephemeral. In Musil's novel the concept of the modern self is linked to the experience of a big city, which is at once characterized by the lack of order and monotony of its rhythms and is compared to an anthill ("der Ameisenbau" DMoE 31). The city pressures an individual

[x] So let us not place any particular value on the city's name. Like all big cities it was made up of irregularity, change, forward spurts, failures to keep step, collisions of objects and interests, punctuated by unfathomable silences; made up of pathways and untrodden ways, of one great rhythmic beat as well as the chronic discord and mutual displacement of all its contending rhythms. All in all, it was like a boiling bubble inside a pot made of the durable stuff of buildings, laws, regulations, and historical traditions. (MwQ 4).

from all directions, compresses the self until it becomes a "tiny drop." In a similar vein, Chapter 8 describes a futuristic portrait of a super-American city: "eine Art überamerikanische Stadt, wo alles mit der Stopuhr in der Hand eilt oder stillsteht" (DMoE 31).[xi] It is a frightening image of a completely taylorized, super-efficient metropolis, permeated by technology, in which every aspect of life is strictly divided into areas of specialization and in which every individual fills a predetermined spot:

> Luftzüge, Erdzüge, Untererdezüge, Rohrpostmenschensendungen, Krafwagenketten rasen horizontal, Schnellaufzüge pumpen vertical Menschenmassen von einer Verkehrsebene in die andere [...] Fragen und Antworten klinken ineinander wie Maschninenglieder, jeder Mensch hat nur ganz bestimmten Aufgaben, die Berufe sind an bestimmten Orten zusammengestoßen, man ißt während der Bewegung, die Vergnügungen sind in anderen Stadtteilen zusammengezogen, und wieder anderswo stehen die Türme, wo man Frau, Familie, Grammophon und Seele findet. (DMoE 31)[xii]

The impression produced by the description of this social environment is at once structured and disorienting, while every individual is transformed into functions of an incomprehensible whole. Futuristic life depicted here is modeled on the rules devised in a laboratory, so that activity and relaxation, work and love, are carefully measured, leaving no room for an individual identity to develop. The sole purpose of such life is to be as

[xi] a kind of super-American city where everyone rushes about, or stands still, with a stopwatch in hand. (MwQ 27).

[xii] Air trains, ground trains, underground trains, people mailed through tubes special-delivery, and chains of cars race horizontally, while express elevators pump masses of people vertically from one traffic level to another […] Questions and answers synchronize like meshing gears; everyone has only certain fixed tasks to do; professions are located in special areas and organized by group; meals are taken on the run. Other parts of the city are centers of entertainment, while still others contain the towers where one finds wife, family, phonograph, and soul. (MwQ 27).

efficient as possible: “Die Ziele sind kurz gesteckt; aber auch das Leben ist kurz, man gewinnt ihm so ein Maximum des Erreichens ab, und mehr braucht der Mensch nicht zu seinem Glück...” (DMoE 31).[xiii]

This fantasy of an American city is contrasted in the novel with the contemporary to Musil Austro-Hungarian Empire, which is steadily moving towards its end and is ironically called Kakania in the novel. While “the super-American” city is extremely high-speed and Kakania is slow-moving, their affect on individuality is similar in some respects: the individual appears to have as little control over the kind of life he or she leads, as the whole society over the kind of historical events that befall it. Although Kakania of the “good old days” is portrayed through a satirical lens, the depiction carries a hint of nostalgia for the past. Inhabitants of this country, the anonymous narrator informs us, have nine different characters: a professional, a national, a civic, a class, a geographic, a sexual, an unconscious, and a private one:

> er [ein Landesbewohner] vereinigt sie in sich, aber sie lösen ihn auf, und er ist eigentlich nichts als eine kleine, von diesen vielen Rinnsalen ausgewaschene Mulde, in die sie hineinsickern und aus der sie wieder austreten, um mit andern Bächlein eine andere Mulde zu füllen. (DMoE 34) [xiv]

All these characters of Kakania inhabitants, while lacking in uniqueness, “dissolve” the individual, as suggested by the image of streamlets trickling into the self and then draining out of it, leaving it empty. There is also the tenth character a person possesses--

[xiii] Targets are short-termed, but since life is short too, results are maximized, which is all people need to be happy… (MwQ 27).

[xiv] He [the inhabitant of a country] unites them in himself, but they dissolve him, so that he is really nothing more than a small basin hollowed out by these many streamlets that trickle into it and drain out of it again, to join such rills in filling some other basin. (MwQ 30).

"dieser ist nichts als die passive Phantasie unausgefüllter Räume"--and this character is described in a uniquely Musilian poetic language, which combines imagery and precision, hope and nostalgia (DMoE 34).[xv]

Even though it is not stated explicitly in the text, but "the passive fantasy of spaces yet unfilled" also describes Ulrich's situation in the novel: he is incapable of a meaningful action and yet has a yearning for a goal and a meaning, all the while remaining unsure where to start looking for them. It is striking that this tenth character is described as an empty space—"ein leerer, unsichtbarer Raum, in dem die Wirklichkeit darinsteht wie eine von der Phantasie verlassene kleine Steinbaukastenstadt"—a description which by no means suggests the notion of a core, a stable center, or an identity that was once thought possible (DMoE 34).[xvi] A metaphor of "a child's toy town deserted by the imagination" suggests that this space, which is now empty and invisible, had once been filled by the imagination. In other words, people misguided themselves by imagining that the "self" is a space held together by some center (an idea, a belief, the inner essence, or the intrinsic disposition). The only thing that remains now for Ulrich is an attempt to unite the generalities offered by science and social conventions with the uniqueness of individual feelings; but in the absence of any language that would allow him to express this unity, his attempt leads him to utopian endeavors: from a "Secretariat for Precision and Soul," to mysticism, and finally to defying the order through an incestuous union with Agathe.

If the first chapter argues that the actual name of the city is unimportant, then the characters, their actual names and occupations, are equally replaceable. They might be

[xv] that is nothing else than the passive fantasy of spaces yet unfilled (MwQ 30).
[xvi] An empty, invisible space, with reality standing inside it like a child's toy town deserted by the imagination. (MwQ 30).

Arnheim and Ermilinda Tuzzi, it is suggested, but it is immediately stated that this cannot be true because the two characters mentioned above were away from Vienna at the moment of narration. The description of an automobile accident that follows reinforces the discrepancy between two modes of narration which describe the weather in the beginning—the pseudo-scientific style and the everyday one. Despite the title of the chapter "From which, remarkably, nothing develops," the reader finds out about the car accident. The victim of it however is not named, he is only important insofar that his accident confirms statistical data about the annual number of car accidents. The tension between predictions of statistics and an individual life consists in the fact that science accounts for a more or less accurate total number of traffic accidents, while it tells nothing about which particular burgher is going to be hit by a car.

It was a Belgian scientist Adolphe Quetelet who first applied statistical reasoning to social phenomena, such as crime, marriage, and suicide rate, in the first half of the nineteenth century, stimulating a discussion of free will as opposed to social determinism.[13] Musil, it seems, was responding to this discussion by including reflections about statistical predictions and their relevance to each individual: in the world increasingly perceived in terms of statistical laws, the notion of individual agency together with the causal relationship governing social process seemed ever more obsolete. This, too, contributed to the picture of reality in terms of functional relations rather than seemingly "old-fashioned" causal and deterministic laws. The novel's first chapter thus establishes two irreconcilable domains: the particular individual case, on the one hand, and the general, lawful totality, on the other. Two various languages do not add up to one single narration but run side by side instead, as in the scene of the accident: the hard facts

of statistics about accident rates are not commensurable with human feelings and reactions experienced by the witnesses after the unnamed pedestrian is struck by a truck.

Following the weather report and the scene of the car accident, the narration carries on to a particularly disorienting description of Ulrich's present dwelling: "das Ganze hatte also einen verwackelten Sinn, so wie übereinander photographierte Bilder" (DMoE 12).[xvii] The man without qualities lives in a house that looks like a hunter's palace or a lover's palace and combines various architectural features from the seventeenth, eighteenth, and nineteenth centuries. The residence gives a sense of not belonging to any particular epoch, and certainly not to the modern one. The metaphor of a photograph with a double exposure is reminiscent of Picasso's paintings with their multiple perspectives, the notion being important throughout the novel: multiple perspectives, several narratives voices and tones, which do not merge into a single whole, come to represent the "ego" according to Mach's model as composed of elements that come together and then dissolve again. Unable to decide on any particular style that would reflect his taste and character, Ulrich eventually leaves the job of renovating and decorating his house to interior designers for he is unable to find any style that would reflect his inner essence. In fact, the very notion of the inner essence—the center—is questioned in the novel. In contrast to Ulrich's residence, his father's house is quite different: an elegantly furnished residence, which is in perfect harmony with the lifestyle, inner essence, and social standing of its aristocratic owner. In a conversation with Agathe (Book 2, Chapter 24), Ulrich develops his idea about the characteristic lack of a correspondence between a dwelling and a person; houses no longer express one's identity:

[xvii] the whole had something blurred about it, like a double-exposed photograph. (MwQ 6).

> […] die sozialen und persönlichen Verhältnisse sind nicht mehr fest genug für Häuser […] Früher einmal hat man das getan und durch die Zahl der Zimmer und Diener und Gäste gezeigt, wer man sei. Heute fühlt fast jeder, daß ein formloses Leben die einzige Form ist, die den vielfältigen Willen und Möglichkeiten entspricht [...] (DMoE 895).[xviii]

Life had become a formless, uncontrollable flux of possibilities, which makes it difficult for a modern man to find an exterior corresponding to his inner world. In a similar way, this trend is described in Musil's earlier essay, "Mind and Experience" (1921):

> What characterizes and defines our intellectual situation is precisely the wealth of contents that can no longer be mastered, the swollen facticity of knowledge (including moral facts), the spilling out of experience over the surfaces of nature, the impossibility to achieve an overview, the chaos of things that cannot be denied. We will perish from this, or overcome it by becoming a spiritually stronger type of human being. (137)

Ulrich's agonizing attempts to master what can no longer be mastered, to achieve a unity in the face of fragmentation, and to make sense of "the chaos of things," does not come to a definite conclusion: he neither perishes, nor becomes a stronger person, but retreats from reality altogether.

Only after the reader becomes familiar with the time and place of narration, even with the residence of the main character, the man without qualities is finally introduced, and we don't find out that his name is Ulrich until Chapter 5. He is standing by the

[xviii] social and personal relations are no longer solid enough for homes […]. In the old days people did that, to show who they were by the number of rooms and servants and guests they had. Today almost everyone feels that only a formless life corresponds to the variety of purposes and possibilities life is filled with […] (MwQ 971),

window of his chateau, observing the traffic and pedestrians on the street down below and registering with his watch how many vehicles are passing by:

> Er stand hinter einem Fenster, sah durch den zartgrünen Filter der Gartenluft auf die bräunliche Straße und zählte mit der Uhr seit zehn Minuten die Autos, die Wagen, die Trambahnen und die von der Entfernung ausgewaschenen Gesichter der Fußgänger, die das Netz des Blicks mit der quirlender Eile füllten [...] (DmoE 12).[xix]

This remarkably compact sentence combines several themes which will be developed throughout the novel: Ulrich's position as a detached observer; his attitude toward life as a scientific laboratory, or as one "grand experiment"; the opposition of the individual and the urban crowd; and, finally, the difference between the garden as a shelter and the noise and shock of the street outside. Ulrich's contemplation of the antlike crowd out in the street forces him to compare how much energy one expends in order simply to stay afloat in the dynamic stream of urban movement, and he comes to an uneasy conclusion about the fate of heroism, which is so tightly bound up with the notion of an outstanding individual, in the modern world: "…und also setzen wohl auch die kleinen Alltagsleistungen in ihrer gesellschaftlichen Summe und durch ihre Eignung für diese Summierung viel mehr Energie als die heroischen Taten…" (DMoE 13).[xx] As he contemplates the sum total of the energy expended by the people down below, Ulrich is not interested in particular details but observes the crowd in its antlike state; in his

[xix] He was standing behind the window gazing through the fine green filter of the garden air to the brownish street beyond, and for the last ten minutes he had been ticking off on his stopwatch the passing cars, trucks, trolleys, and pedestrians […] timing everything whirling past that he could catch in the net of his eye. (MwQ 6).

[xx] And so the social sum total of everybody's little everyday efforts, especially when added together, doubtless releases far more energy into the world than do rare heroic feats. (MwQ 7).

position of a detached observer the individual is reduced to a general case and a statistical fact.

Radical changes are taking place in a society, as it undergoes a transition from the individualistic to mass culture; Ulrich is well aware that the conditions of life are drastically changing and feels disoriented by the flow of modern life: "Die Zeit bewegte sich […]. Man wußte bloß nicht, wohin. Man konnte auch nicht recht unterscheiden, was oben und unten war, was vor und zurück ging" (MoE 13).[xxi] In 1913, the year when the „action" is taking place, nobody knew where time was headed, but the reader of the novel knows: it was inevitably approaching the outbreak of the war and the end of the Austro-Hungarian Empire. In the novel, up and down, backwards and forwards are relative categories, the interpretation of which largely depends on the position one assumes, and this spatial and temporary confusion spreads to the moral sphere as well:

> Gut und bös, oben und unten sind für ihn [den Geist] nicht skeptisch-relative Vorstellungen, wohl aber Glieder einer Funktion, Werte, die von dem Zusammenhang abhängen, in dem sie sich befinden.[...] Er hält kein Ding fest, kein Ich, keine Ordnung; weil unsre Kenntnisse sich mit jedem Tag ändern können [...] (DmoE 153-54)[xxii]

The notion of function is thus extended from the natural and exact sciences to the domain of ethics. There are no firm concepts, no moral qualities, not even an "I," which could be identified apart from their context; everything makes sense only as a function of something else. The shift described here is from the view of things and identities as

[xxi] Time was on the move […]. But nobody knew where it was headed. And it was not always clear what was up or down, what was going forward or backward. (MwQ 7).
[xxii] To the mind, good and evil, above and below, are not skeptical, relative concepts, but terms of a function, values that depend on the context they find themselves in. […] It regards nothing as fixed, no personality, no order of things; because our knowledge may change from day to day […] (MwQ 162-63).

substances—something intrinsic and stable--to regarding them as functions, or as a flux that changes depending on the surrounding conditions. This shift is perceived by the characters in the novel as disorienting. As the quotation above suggests, knowledge itself is changing, which echoes Mach's idea that theories replace one another like leaves on a tree, and that no theory can be final and true, but only parsimonious and useful.

This feeling of disorientation is described again later in the novel, and is triggered, as before, by Ulrich's looking out onto the street from an elevated window. This time however Ulrich observes the mob raging against the Parallel Campaign, and his attitude of fascination with the crowd is gradually replaced with terror. Ulrich is hypnotized by the turbulent crowd of people united by a single strong emotion, while being aware of the protective shield of a thick glass, which makes the noise outside a bit blurred. He then begins to envy the people behind the window, as he feels his own loneliness and solitude, which are in sharp contrast with their organized united actions. Ulrich begins to imagine that the eyes of a raging crowd down below are fixed on him, just as he is observing them, and that their rage is directed at him. And at the moment when he begins to feel exposed--as if on a stage--the ambiguity of his act of "detached" observation comes to the fore. Ulrich feels trapped between the two stages, one being the room behind him and the other being the street down below, and he is no longer sure what is the inside and what is the outside, and who is looking at whom:

> …und diese beiden Bühnen hatten eine eigentümliche Art, sich ohne Rücksicht darauf, daß er zwischen ihnen stand, zu vereinen. Dann zog sich der Eindruck des Zimmers, das er hinter seinem Rücken wußte, zusammen und stülpte sich hinaus, wobei er durch ihn hindurch- oder wie etwas sehr

> Weiches rings um ihn vorbeiströmte. „Eine sonderbare räumliche Inversion!“ dachte Ulrich. (DMoE 632) [xxiii]

Similar to Rilke's character Malte Laurids Brigge, Musil's protagonist experiences a complete dissolution of the boundaries of the self, and, as a result, the "inside," usually associated with the person's innermost essence, and the "outside," usually connected with the world existing apart from the observing individual, are dislocated:

> Die Menschen zogen hinter ihn vorbei, er war durch sie hindurch an ein Nichts gelangt […] "Kann man denn aus seinem Raum hinaus, in einen verborgenen zweiten?" dachte er, denn es war ihm geradeso zumute, als hätte ihn der Zufall durch eine geheime Verbindungstür geführt. (DmoE 632).[xxiv]

The „I“ of this passage is no longer a stable center, from which an individual masters the outside world, but can be described as a formless entity overflowing its own boundaries, until it no longer knows what belongs to the self and what to the outside world. In Musil's novel, the "I" loses any substance, any reality, and even when Ulrich feels that he stepped outside of his own "self," the only thing he manages to reach is a "Nothingness."

Significantly, this peculiar inversion of the observer and the observed, of the inside and the outside, is connected to the development of science and the way it re-defines the self in relation to the world:

[xxiii] The two stages had their own way of fusing into one without regard for the fact that he was standing between them. Then the sense of the room behind him contracted and turned inside out, passing through him or flowing past him as if turned to water, making for a strange spatial inversion, Ulrich thought. (MwQ 689).

[xxiv] […] the people were passing behind him. Perhaps he had passed through them and arrived beyond them at some zero point […] Is it really possible, he wondered, to leave one's own space for some hidden other space? He felt as though chance had led him through a secret door. (MwQ 689).

> Das Ich verliert die Bedeutung, die es bisher gehabt hat, als ein Souverän, der Regierungsakte erläßt; wir lernen sein gesetzmäßiges Werden verstehn, den Einfluß seiner Umgebung, die Typen seines Aufbaus, sein Verschwinden in den Augenblicken der höchsten Tätigkeit, mit einem Wort, die Gesetze, die seine Bildung und sein Verhalten regeln. (DMoE 474)[xxv]

Along these lines, one of the more recent critical studies focuses on the intersection of the scientific and literary aspects of the novel: Sebastian writes that in this passage Ulrich hints at the irony that in science man turns against himself attempting to be both, the one who knows and the one who is known.[14] Like any natural phenomena, the self is now exposed to scientific analysis, and the sciences, such as biology, linguistics, and psychology, describe human behavior as predictable according to natural laws. In a conversation with his cousin Diotima, Ulrich exclaims:

> Bedenken Sie: die Gesetze der Persönlichkeit, Kusine! Es ist das wie ein gewerkschaftlicher Zusammenschluß der einsamen Giftschlangen oder eine Handelskammer für Räuber! Denn da Gesetze wohl das Unpersöhlichste sind, was es auf der Welt gibt, wird die Persönlichkeit bald nicht merh sein als ein imaginärer Treffpunkt des Unpresönlichen, und es wird schwerhalten, für sie jenen ehrenvollen Standpunkt zu finden, den Sie nicht entbehren mögen..." (DMoE 474)[xxvi]

[xxv] The self is losing its status as a sovereign making its own laws. We are learning to know the rules by which it develops, the influence of its environment, its structural types, its disappearance in moments of the most intense activity: in short, the laws regulating its formation and its conduct. (MwQ 516).

[xxvi] Think of it, cousin, the laws of personality! It's like talking of a trade union for lonely rattlesnakes or a robber's chamber of commerce. What with laws being the most impersonal thing in the world, the personality becomes no more than the imaginary meeting point of all that's impersonal, so that it's hard to find for it that honorable standpoint you don't want to relinquish… (MwQ 516).

Science translates the most personal qualities into impersonal laws, and Ulrich has difficulties finding anything at all that can be called truly personal. As Sebastian points out, science puts man in an ambiguous position of being both, an object of knowledge and a subject that knows (26). This ambiguity of the self, and the position that science ascribes to it, appear to Musil's character as absurd as a trade-union of lonely rattlesnakes or a robbers' chamber of commerce. These similes suggest the self-defeating nature of a scientific enterprise, which tries to explain the "I" in terms of objective, impersonal laws without paying the slightest attention to the uniqueness of each individual.

It is important to stress that the situation that Ulrich is referring to in connection with subjecting the "I" to scientific analysis is by no means unique to this protagonist alone. There were attempts in the field of ethics to come up with a theory that would not be based on metaphysics, such as Paul Ree's Der Ursprung der moralischen Empfindungen (The Origin of Moral Feelings) (1877) and Die Entstehung des Gewissens (The Emergence of Conscience) (1885). Works like those of Rees show that the attempts to re-think morality on the new, scientific, anti-metaphysical basis started with the response to Darwin's ideas, continued in Nietzsche's works, and were picked up by authors of fiction like Musil.

Ulrich is unable to find any qualities in himself that can be defined independently of other people, because even the most personal feelings, such as anger or love, appear to be repeatable. Ulrich thus lacks qualities that could be defined in themselves, without being functionally relevant to some other qualities, and the reality of the self, which the young Musil was defending in his doctoral thesis, is slipping away from his character: "…wer kann da heute noch sagen, daß sein Zorn wirklich sein Zorn ist, wo ihm so viele

Leute dreinreden und es besser verstehen als er?!, reflects Ulrich (DMoE 150).[xxvii] In a sentence remarkably similar to Mach's conception of the "I" as a stream of impersonal sensations, Ulrich elaborates:

> Es ist eine Welt von Eingenschaftgen ohne Mann entstanden, von Erlebnissen ohne den, der sie erlebt, und es sieht beinahe aus, als ob im Idealfall der Mensch überhaupt nichts mehr privat erleben werde und die freundliche Schwere der persönlichen Verantwortung sich in ein Formelsystem von möglichen Bedeutungen auflösen sole. (DMoE 150)[xxviii]

In fact, feelings and experiences were analyzed in science and in art: the nineteenth-century physiological inquiry into brain functions, the new science of psychology, neurobiology, and literary Naturalism attempted to examine feelings and sensations "objectively," that is detached from the actual individual who experiences them. Ernst Mach went as far as to suggest that the "I" must be given up because it is neither permanent, nor sharply marked off. Feelings, emotions, sensations, and experiences began to be studied as phenomena subject to certain laws and following scientifically identifiable mechanisms, rather than as uniquely individual, unrepeatable expressions of a person. It is for this reason that Musil's character calls experience a thing of the past.

Ulrich is a man who lives in conflict with himself ("Ulrich ist ein Mensch, der von irgend etwas gezwungen wird, gegen sich selbst zu leben" DMoE 151-52): on the one hand, he is looking for something definable in itself, and, on the other, he realizes

[xxvii] Who can say nowadays that his anger is really his own anger when so many people talk about it and claim to know more about it than he does? (MwQ 158).
[xxviii] A world of qualities without man has arisen, of experiences without the person who experiences them, and it almost looks as though ideally private experience is a thing of the past, and that the friendly burden of personal responsibility is to dissolve into a system of formulas of possible meanings. (MwQ 158-59).

that this would be contrary to scientific notions of his time.[xxix] He becomes as a result an observer of life, a "monsieur le vivisecteur," and life becomes for him a great experimental laboratory where one tests out various positions from which to define one's identity: "So wie eine große Versuchsstätte, wo die besten Arten, Mensch zu sein, durchgeprobt und neue entdeckt warden müßten […]" (DMoE 152).[xxx] Ulrich sets out on a utopian quest of viewing life with scientific detachment while trying to defend the uniqueness of individual soul. His attempts to discover the best way how to be human are connected with "der Möglichkeitssinn," or a sense of possibility, which is contrasted in the novel to "der Wirklichkeitssinn," or a sense of reality.

A sense of possibility is neither a fantasy, nor a statistical notion of probability; it is Ulrich's peculiar way of thinking that "everything could have been otherwise" ("es könnte wahrscheinlich auch anders sein" DMoE 16). A sense of possibility is defined as realities yet unborn ("noch nicht geborene Wirklichkeiten" 17).[xxxi] Musil's notion of a utopia in the novel is connected to the sense of possibility and to the experiment:

> Es ist ein ähnlicher Vorgang, wie wenn ein Forscher die Veränderung eines Elements in einer zusammengesetzten Erscheinung betrachtet und daraus seine Folgerungen zieht; Utopie bedeuted das Experiment, worin die mögliche Veränderungen eines Elements und die Wirkungen beobachtet werden, die sie in jener zusammengesetzten Erscheinung hervorrufen würde, die wir Leben nennen. (DMoE 246)[xxxii]

[xxix] Ulrich was a man forced somehow to live against himself (MwQ 160).
[xxx] as a vast experimental station for trying out the best ways of being man and discovering new ones (MwQ 160).
[xxxi] MwQ 12.
[xxxii] I is like what happens when a scientist observes the change of an element within a compound and draws his conclusions. Utopia is the experiment in which the possible change of an element may be

This type of objective observer watches how a change of one element in this totality triggers changes in other elements. As the story of the man without qualities shows, living one's life with an attitude of a detached researcher is a utopian enterprise. Ulrich's distanced attitude towards life is self-defeating, and his goal of reconciling exactitude and soul remains equally utopian. Nonetheless, the tone of the novel demonstrates that his solitary quest, as well as his resolve to remain a man without qualities, are not devoid of something noble and courageous:

> Ungefär wie ein Essay in der Folge seiner Abschnitte ein Ding von vielen Seiten nimmt, ohne es ganz zu erfassen,--denn ein ganz erfasstes Ding verliert mit einem Male seinen Umfang und schmiltzt zu einem Begriff ein—glaubte er, Welt und eigenes leben am richtigsten ansehen und behandeln zu können. (DMoE 250)[xxxiii]

Ulrich refuses to accept absolute definitions and final answers, and the intellectual attitude that corresponds to this position is an essay. It is a form that allows Ulrich, and the narrator, to find partial solutions to existing problems in the sphere of ethics, feelings, and aesthetics; an essay does not establish causal connections but looks for functional relations between moral qualities and the language that names them. The result is "ein unendliches System von Zusammenhängen, in dem es unabhängige Bedeutungen, wie sie

---

observed, along with the effects of such a change on the compound phenomenon we call life. (MwQ 265-66).

[xxxiii] It was more or less in the way an essay, in the sequence of its paragraphs, explores a thing from many sides without wholly encompassing it—for a thing wholly encompassed suddenly loses its scope and melts down to a concept—that he believed he could most rightly survey and handle the world and his own life. (MwQ 270).

das gewöhnliche Leben in einer groben ersten Annäherung den Handlungen und Eigenschaften zuschreibt, überhaubt nicht mehr gab...“ (DmoE 251).[xxxiv]

The meaning of a moral quality, or of an act, undergoes changes, depending on the approach one assumes in interpreting it: the notorious instance of this ambiguity in the novel is Moosbrugger, whose case is debated among doctors and scientists. He is either insane, and therefore not liable for his actions, or he is normal and must be prosecuted for his crime. No point of view, no paradigm, and no perspective is privileged in the novel. The reflections and ideas are at times hard to ascribe to a particular character, the reader is uncertain whether they belong to Ulrich or to the narrator, who remains unknown. Frequently, narrative modes are juxtaposed, as in the opening chapter discussed above, demonstrating that any perspective and any mode is always partial, its validity depending on the position of the observer. The novel is full of self-reflexive observations about the place and function of narration in contemporary world, and about what type of narration remains possible under contemporary conditions, challenging the notion of the stable “I.” Along these lines, in chapter 122 of Book 1, Ulrich comes to a disturbing conclusion that life itself has become non-narrative, even though people still treat it as if it could be chronologically narrated. Perceiving life as a narrative sequence, a story, connected by the logic of the conjunctions “when,” “before,” “in order that,” and “after,” people prefer a sequence of facts to modern chaos, to “spilling out of experience over the surfaces of nature” (“Mind and Experience” 137). The trouble with the modern condition, according to Ulrich, is that “öffentlich alles schon unerzählerisch geworden ist

[xxxiv] An open-ended system of relationships arises, in which independent meanings, such as are ascribed to actions and qualities by way of a rough first approximation in ordinary life, no longer exists (MwQ 270).

und nicht einem „Faden“ mehr folgt, sondern sich in einer unendlich verworbenen Fläche ausbreitet“ (DmoE 650).[xxxv]

Ulrich looks for a solution to this modern predicament and attempts to formulate an alternative mode of selfhood; this search leads him alternately to myth, childhood memories, love, mysticism, and incest. In fact, what these borderline experiences have in common is their link to the origins of mankind, the weakened role of the ego, and the intensification of experience. Yet Ulrich's experimentation with alternative modes of experience does not enable him to find a meaningful relation to experience, at least within the published portions of the novel. In Musil's unfinished novel, inwardness does not find expression in everyday life. Ulrich's life has turned into a network of interchangeable possibilities, partial solutions, and multiple points of view, because, in spite of himself, his attitude is primary that of a positivist scientist. Musil's character is unable to achieve a unity of existence and to reason himself out of the predominant scientific views typical for his time. Attempting to express his innermost being, Ulrich stumbles upon old clichés and stereotypes: there is no correspondence between the surface and the depth, the causal relationship between which had traditionally constituted the narrative thread of life.

Ulrich is thus interested in a potential man, not in the petrified notion of morality or in probabilistic accounts of science. Despite its lack of an ending and the failure to unite scientific accounts with concerns for the individual case into one coherent mode of representation, the novel manages to look beyond the contemporary conditions towards the future man and towards alternative ways of how to be human: it seeks to re-invent the

[xxxv] everything in public life has already ceased to be narrative and no longer follows a thread, but instead spreads out as an infinitely interwoven surface (MwQ 709).

inner person. Perhaps this is what Musil meant when he wrote in his journal in 1936 that "Th. M. u. ähnliche schreiben für die Menschen, die da sind; ich schreibe für die Menschen, die nicht da sind."[xxxvi]

[xxxvi] Th[omas] M[ann] and similar authors write for people who are there; I write for people who aren't there. (Robert Musil, Tagebücher, [Reinbek bei Hamburg: Rowolt, 1976], I:880.)

Chapter Six
Conclusion

What Do We See When We Observe?

The preceding chapters have investigated the ways in which modernist authors of fictional works, as well as scientists, re-defined the concept of objective observation, thereby challenging the status of the objective, non-participant, distant observer, if not necessarily its existence. Modernity within the field of Germanistik has traditionally been linked to re-defining subjectivity and identity (Schorsky, Le Rider), to the rise of the feminist movement, to the beginning of "mass" politics and the rise of urban culture (Huyssen), and to overcoming fin-de-siècle attitudes and the beginning of a new experimentation with literary modes (Pike). On the other hand, questions of how science has re-shaped modern life—whether through technology or changing perceptions of the nature of reality and of the mind studying it—have either been neglected, or treated as secondary to these "typically" modernist issues. It is the contention of this study that an altered definition of observation, both as a method of scientific inquiry and as a general way of knowing reality, came about as a response to a continuing debate on the nature of the knowing mind. Is the human mind different from nature in that it attempts to understand what it experiences, or does the human mind always impose a projection of its own nature upon reality that it studies, thus making any objective understanding difficult, if not impossible, to achieve? This debate over how one observes reality is also intrinsic to the problem of the unity and fragmentation of knowledge—a question that this dissertation, too, has sought to address. To my knowledge, no full-length study has been devoted to a discussion of how this shift of the definition of observation has affected literary works in the field of Germanistik, and this dissertation represents an attempt to

fill the gap by pairing literary works with selected theoretical works. On a larger scale, this study represents a contribution to the interdisciplinary field of Literature and Science, and, as such, seeks to broaden the scope of literary inquiry by taking into account contemporary scientific contexts.

Bringing such diverse authors as Kafka, Rilke, Mann, and Musil into one study has been prompted by the fact that literary movements were becoming increasingly less national and more European, if not world-oriented, during the period of investigation and that their works reflect parallel preoccupations with observation as both a theme and method of inquiry into the nature of reality. These authors, as is pointed out in the Introduction, belonged to the generation of 1905--Kafka was born in 1883, Rilke and Mann in 1875, Musil in 1880--and chronology alone allows one to consider this period as a distinct moment in the history of modernity.

Despite the great thematic and stylistic diversion of the discussed literary works, the parallel interests of various thinkers, which emerge from this study, show in a new light that people are embedded in a common culture and that this culture shapes their manner of thinking in subtle ways. In a concluding chapter of this study, it might be useful to stress similarities in themes and attitudes of the discussed writers, all the more so because all of them are considered to be the canonical works of German literature. Perhaps the most telling feature which describes the protagonists of all the four discussed fictional works is their deliberate position of being on the “outside”: they abandon familiar surroundings, or a “normal” relation to time, social and professional involvement, and break with their past. Kafka’s Rotpeter is an ape among humans who decides to “report” about his transformation into a human-like creature in a quasi-

scientific manner. He stands apart from both, his past as an ape and from his present as an animal among humans; he is a creature different in all respects from the spectators in a cabaret and from the members of the academy to whom he addresses his unusual report. Similarly, Rilke's character Malte fails to find correspondence between the solid past of his ancestors and the fragmented present of his Paris stay. As his wanderings about the city emphasize, he is an outsider unable to relate to any aspect of his surroundings and struggling to write in a new way about what he sees. In a similar vein, both, Mann's character Hans Castorp and Musil's protagonist Ulrich, deliberately take a vacation from life, excluding themselves from professional obligations and, in Castorp's case, from temporality itself.

It must be emphasized, that the characters' desire to step outside of the flow of life is connected in all cases to the attitude of an uninvolved observer: Rotpeter refuses to pass judgment about people's cruel behavior towards him; Malte spends time in Paris where he observes strangers without being able to form any loyalties; Hans Castorp makes a decision to prolong his stay in the sanatorium on the mountain top, away from his relatives and his chosen occupation of a naval engineer; and, finally, Ulrich is unable to decide how to become a man of importance in the modern world and quits on his professional engagement. All these characters perceive themselves as not fitting in with their surroundings, while their sense of belonging to a particular group or time is disturbed. Ironically, in all cases the decision to remain an outside, non-participant observer of life reveals undercurrent tensions inherent in this position; the dialectic of seeing and being seen, of the inside and the outside, of the desire to remain uninvolved and the reality of being the object of observation for others, emerges from all the texts

discussed in this study. With a various degree of discomfort all these protagonists realize that observation necessarily involves either reporting the results in a language which is not so neutral (Rotpeter), or being observed by others (Malte and Ulrich), either participation (Hans Castorp) or self-awareness (Ulrich). The awareness of this tension is demonstrated through re-conceptualizing the traditional division into subject and object, or into an impartial observer and a passive object of observation.

On the textual level this is revealed either through the blurring of boundaries between the genres, or through adopting the formal features of traditional genres while subverting their typically accepted content. Along these lines, Kafka's story is a pseudo-scientific report, such as, for instance, Gulliver's Travels, with an ironic twist that the report is written by an ape and is addressed to the imaginary scientific community. While the narrative perspective of Ein Bericht resembles that of a fable, the story does not offer any lesson or conclusion from which one might learn. Rilke, Mann, and Musil, on the other hand, experiment with a traditional genre of a Bildungsroman, in which a young protagonist typically sets out on a journey to discover his right place in society. Like protagonists of a Bildungsroman, their characters, too, seek self-realization and a harmonious existence within the society. At the first glance, one might conclude that the protagonists of the discussed modern novels—Malte, Hans Castorp, and Ulrich—are driven by their desire to discover how their abilities and knowledge can be utilized in the world. On a closer look, however, modern protagonists seem to step outside of social life altogether and fail to find reconciliation between their inner world and contemporary reality, thus not fulfilling a promise of a traditional Bildungsroman. It must also be emphasized that Rilke's and Musil's works, although they are called novels, undoubtedly

question the novelistic genre itself. The chronology of Die Aufzeichnungen and Der Mann ohne Eigenschaften is deliberately non-linear, challenging the logical arrangement of events; whatever the reader learns about the biography of Malte or Ulrich is fragmented, while the story of their present is equally segmented, being constantly interrupted by reflections, analyses, and scenes from the past. The novel typically implies an unfolding of events through time, and this narrative convention is shown to be obsolete in a modern novel. "Es geschieht nichts," observes Malte, as if reflecting about a narrative thread of his life.[i] In a similar gesture, the first chapter of Musil's novel is entitled "Woraus bemerkenswerter Weise nichts hervorgeht."[ii]

One may conclude that the fragmentation of modern life, reflected in the narrative breakup, produces a type of character who does not know what he is and what he is supposed to do. Rilke's Malte, Mann's Hans Castorp, and Musil's Ulrich, feel that the radical nature of the break with their fathers' past produces an uncanny feeling of freedom, on the one hand, and the lack of a purpose, on the other. Not only are their fathers literally dead—all three novels abound in scenes describing deaths, funerals, and the former symbols of the generation of fathers—but the life of ancestors is perceived by the characters as whole, meaningful, and useful, as a fulfillment of destiny, which their sons and grandsons do not believe they have. For instance, Malte contemplates his grandfather's life as an example of an authentic existence. In contrast to his own wanderings about, the past is associated with a particular place--a mansion--where a person was surrounded with familiar objects and faithful servants, and where it was once possible to have a "personal" death, in contrast to the anonymous dying in hospitals

[i] Nothing happens.
[ii] From which, remarkably, nothing happens.

among strange people. For Malte, the symbol of this past life is a family mansion--inhabited by ghosts--which he used to visit as a child, by contrast, at the time of the narration he lives in a small apartment penetrated by street noises. For the protagonist of Mann's novel, Hans Castorp, such symbol of his ancestors' past is the christening basin, which signifies change (it has been used to baptize so many different people) and duration (it is a family relic). Castorp's parental home, with its traditions and objects that embody them, is described as an outdated, vanishing mode of existence. Similarly, Ulrich reflecting about his father's mansion comes to a conclusion that the style of dwellings of the previous generation used to correspond to the inner essence of their inhabitants, and that this correspondence can no longer be found in contemporary houses lacking a unified style. Along similar lines, all three novels reflect a thematic preoccupation with the "dead" past: the reader encounters a detailed description of Malte's grandfather's death, Hans Castorp's parents' and the grandfather's death, and Ulrich's father's funeral. This dissolution of the solidity of the past is thematically connected with purposelessness, futility, and ennui of the succeeding generation.

Finally, all of the fictional texts selected for this study are characterized by their self-conscious questioning of narrative conventions and aims. Kafka's Rotpeter writes a pseudo-scientific report, claiming the objectivity of a "scientist". The story satirically written from a perspective of a captured animal who tells a story about his mimicking of the human behavior, poses questions, such as: how is one to write a story? and, more importantly, who is to tell a story and from which perspective? Parallel to those concerns of Kafka's story are Malte's goals of learning to see anew in order to become a poet, and his question, too, is—how does one write? Rilke's protagonist fails to become the kind of

writer he aspires to be, but the novel itself is full of reflections about the nature of narration in contemporary life, about previous reading experiences, and about the adding up levels of fragmentation which prevent the protagonist from fully achieving his new vision. By contrast to that, Mann's novel is told by a self-conscious narrator, whose reflections constantly interrupt the story so as to engage in a conversation with a reader directly, in order to share his reflections about telling a story about time. The narrator of Mann's novel raises issues such as dividing the novel into chapters of various lengths, about his understanding of the nature of time, and about the differences and similarities between the temporality of music and of a narration. In a parallel gesture, Musil's protagonist Ulrich declares in one of his conversations that the narrative order of life has been interrupted. In another scene he reflects that the anthropological view of the world—which, one might conclude, had been responsible for this narrative order—is being dismantled by modern science and man is no longer a master of his own soul, dissected by psychologists, or his own story. In all of the above cases, the question of how one is to write a story, of who is to tell it, and from whose perspective it is to be told, are related to a larger context, as shown in the beginning of this chapter. This context is the ambivalent position of the protagonist caught between observing life and being observed by others. Perception, observational perspective, and narration are connected in a network of mutual influence, and were in turn influenced by the shift in the definition of observation in the beginning of the twentieth century.

It is not surprising, then, that attempts to re-define the traditional empiricist notion of observation led to investigations of the role language plays in making sense of reality. The question what function language had in people's experience of themselves and the

world was vigorously debated at the end of the nineteenth and in the beginning of the twentieth centuries—the period this dissertation discusses. This problem might be formulated in several different ways, but all of them essentially refer to a similar attempt to determine what role language plays in our world view: to what extent does it mediate between the human subject and objects in the external world; can there be any thought existing prior to language; and is the connection of words to things they name an arbitrary or an essential one? It must be noted that all of the scientists discussed in this study are talented writers, whose masterful prose reaches beyond narrow professional circles and into the general culture, their metaphors and images serving as a link, a bridge between their science and the general culture. Moreover, Darwin's, Freud's, Einstein's, and Mach's memorable metaphors have become part of our consciousness and part of our understanding of the world, and in many cases, for better or for worse, we have come to see the world as language makes it appear to us.[1] The texts of the above thinkers have strong rhetorical elements in that they try to convince the reader, to present their ideas in most persuasive way, and transcend the mere "disinterested" reporting of facts in their style. The writing of those texts coincided with the "turn to language" in many areas of thought.

When speaking about the turn to linguistics in the beginning of the last century and tracing the development of this interest, it is impossible to overlook the pervasive use of the term "discourse," which has become as ambiguous as it is overloaded with various connotations, in much of the contemporary discussions of the history of ideas, history of science, cultural studies, and literary criticism.[2] The section that follows will outline some of the representative ideas about language which emerged in the late nineteenth and

in the early twentieth centuries, and will address the role of metaphorical, creative use of language in scientific texts—in other words, in works where language is supposed to be neutral, objective, and transparent.

Thinkers as diverse as Ludwig Wittgenstein, Ferdinand de Saussure, Hugo von Hofmannsthal, and Sigmund Freud were preoccupied with the role of language in philosophy, psychology, literature and in other areas of the humanities and social sciences. It must be emphasized, however, that historically one of the most significant documents dealing with perception, observation, reality, and language, is Plato's "The Allegory of the Cave," chapter VII of The Republic. This remains a document that by many centuries precedes the modern science, with an insistence on close observations of reality and experience, which it postulates as the only true means of acquiring true scientific knowledge. "The Allegory of the Cave" portrays humanity as chained in obscure depths, unaware of its own limited perspective, and unable to know reality. Significantly, Plato's dialogue raises a question about language: when prisoners chained to a wall talk, what are they talking about? Do their words refer to real objects—whose existence they cannot have experienced at first hand—or to the shadows on the wall in front of them? Plato's answer is that the prisoners are misled by the terms of their language, which can refer only to the shadows and never to real objects. What must be accepted from this example of Plato is that the problem of the relationship between perception and language, as well as between language and the things it names, is by no means new to philosophy. Empiricism--which at the end of the nineteenth century led into a positivism so strict that it was able only to postulate the arbitrariness of all relations and systems of representation--returns to the idea that all we see is a mere reconstruction,

a representation, and not reality itself. This view, as this study has attempted to show, was not accepted by all thinkers: Musil, for instance, defended the reality principle even as the definition of it was becoming dynamic.

Historical studies of language in the nineteenth century and Darwin's emphasis on the evolutionary—as opposed to God-given—origins of language, facilitated the "turn to language." Just as language became an object of study, it began to be viewed at the same time as a constraining factor on what could be known about reality. Such a loss of the ability to express a unitary state of the world in language is described in Hofmannsthal's famous fictional letter of Lord Chandos to Francis Bacon ("Ein Brief," 1902). In it, the fictional author describes a reality which has fallen into pieces for him: the world consists of a flow of sensations and ideas—rendered by the image of a river--while the language he uses does not correspond to his sensations. In an intellectual gesture that parallels Mach's ideas in this respect, Lord Chandos implies that sensations of the world are the world. The abstract language, however, operates with notions that do not have an immediate sense of perception. "Ein Brief" bemoans the lost unity that once existed according to its fictional author—implicitly referring to the ideas of a divine link between language and the world; at the time of writing random impressions which came to constitute the world for Lord Chandos are no longer unified by language. It needs to be emphasized that the letter is addressed to Francis Bacon, the founder of experimental modern scientific approach, who advocated that the language appropriate for truth finding must be objective. Similar to Musil's Ulrich, Lord Chandos seeks to bring the intellect in touch with emotions--"Mit dem Herzen zu denken"—and to find a new language which

would restore the unity.[iii] "Ein Brief" is a canonical text of German literature, which was written at the cusp of the two centuries, and is relevant to the present discussion not only because of the time it was published but also because of the questions it raises. Hofmannsthal's fictional letter has points of contact with other thinkers preoccupied with the problem of language. Firstly, it is evocative of Freud's idea expressed in Die Traumdeutung that concrete words are richer in association than abstract ones. Secondly, it echoes Wittgenstein's dialectic of language and silence and depicts silence not as replacing language but as setting the limits for it.

Similar to Hofmannsthal's fictional letter, all of the literary works discussed in this study show an intense preoccupation with language, although this concern is differently expressed by various characters. Rotpeter from Kafka's short story begins his transition into a human-like creature by imitating the language of the sailor's who captured him; his progress is clear when he writes his report for the members of the academy imitating the formal features of their scientific style. Although his report is written in a clear, matter-of-fact language, Rotpeter confesses that he is unable to express his memories of his former life as an ape in the jungle through the medium of a human language. Language in the story is described on the one hand as a gain in abilities, a means of fitting in among people, and a norm that can be recognized by a particular audience, and on the other hand it is a loss of the former "immediate" relation to nature. Along these lines, Rilke's character Malte is learning to see in a new way without being able to integrate his new vision into a new way to write: his desire to become a writer is not fulfilled because he cannot find a suitable language to render his disjointed experiences. Hans Castorp from Mann's novel discussed above in chapter four, is a naval

[iii] To think with one's heart.

engineer by training and is not used to distinguishing the slight language nuances and figures of speech. He is caught between the two opposing world views of the other two characters, whose discussions of various issues—from politics to religion, and from health and disease to the meaning of life—reflect manipulation of language at many different levels (clichés, metaphors, register, and tone). Settembrini and Nafta argue about their contrary views, while the astonished Castorp falls under the influence of one and then the other without being able to decide who is right. Musil's "man without qualities," Ulrich, reflects throughout the novel about the perceived inability of language to express individual feelings because it had become full of outdated clichés and scientific generalities. Human life has become non-narrative, he concludes. Ulrich describes this condition as a result of a modern scientific world-view which has shifted its focus from man, as a measure of all things and a crown of creation, to statistical generalities, abstract laws, and general predictions which have little to do with the individual soul.

Freud, whose ideas are discussed in this study in connection with Rilke's novel, must be mentioned here because his view of language is important for that period. In Die Traumdeutung, he proposes that deciphering of dream language—disclosing associations of particular worlds—is a method of scientific study of dreams. In other words, interpretation, rather than laboratory observation or experimentation, is a way of obtaining true meaning. There is a hidden layer of inner reality accessible to a psychoanalyst only by means of verbal analysis, and it is the spoken word—rather than, for instance, hypnosis, medications, or electricity—that is the primary cure under psychoanalysis. A therapist interprets the story told by a client, thus turning the fragments

of memories and associations into a new, coherent account: a story of a life seen through the lens of psychoanalytic theory. As it was pointed out in the chapter devoted to connections between Rilke's works and Freud's theory, case histories have undeniable literary aspects to them in that they are descriptions of psychological processes akin to those found in the works of imaginative writers.[3] Furthermore, it is well-documented that the key terms of Freud's theory are borrowed from literature, for instance the Greek tragedy: Oedipal complex and catharsis, to name but few. Interestingly, it was also Freud who coined the term "aphasia" which stands for the inability to express thought adequately by means of language, the same problem Lord Chandos is referring to in his letter, albeit in a very different context. According to Freud, thought, even in some primitive form, precedes language, which in many instances masks and distorts the true, hidden, meaning of mental symbols. Language, therefore, plays a foundational role in Freud's theory, in his treatment methods, as well as in his readers' minds: it is through his metaphors, terms, and images, that most of us are familiar with his ideas. In the beginning of his key text Die Traumdeutung, Freud insists that his ideas and his model of the mind are scientific, that he is not a poet but a natural scientist ("nicht Poet, sondern Naturforscher").[4]

Another theorist, whose impact upon the future development of linguistics and structuralism is profound and who therefore must be mentioned here briefly, is the Swiss linguist Ferdinand de Saussure. Challenging once again the idea of an unequivocal link between a thing and a name, he announced that the relation between signifier (the spoken or written sign) and signified (mental image) is an arbitrary one, an idea already implicit in the writings of Plato. Any signifier, according to Saussure, has a meaning within a

system of language, not because it is connected to a particular signified, but because it is not any of the other signifiers within the system: meaning is not an essential notion but depends upon the idea of "difference."[5] One of the aspects of language that interested Saussure was the problem of change: changes in meaning, form, and sound, which defied the idea of the original, stable link between concepts and images. The image of language that emerges from Saussure's thought is that of a system that develops, changes over time, and that is related to other similar systems (or language families). Language is a social, not a natural product, is one of his main arguments. The ground was thus prepared for the view which considered language—and human identity itself—as socially constructed, rather than having an intrinsic essence, or at least subject to constant influence from society and culture.

Another thinker who discussed the role of language was Wittgenstein: his famously postulated "language games" describe the rules for the use of ordinary language as neither right nor wrong, but merely useful for particular applications. This was an idea that the philosopher attained in his later work, his earlier Tractatus Logico-philosophicus (1918) having declared all the existing philosophical problems as solved. In this work, which consists of tightly formulated logical propositions, Wittgenstein announces that the boundaries of our language are the boundaries of our world. Whenever we attempt to analyze a phenomenon, what we are really analyzing is the concept, the use of a word. To him, language, thought, and reality share a common structure fully expressible in logical terms. Metaphysical, aesthetic, and ethical statements do not constitute meaningful, logical assertions, according to Wittgenstein, and therefore have no room in philosophy. The Tractatus famously ends with a statement "Whereof one cannot speak, thereof one

must remain silent," referring to those domains which logical language cannot properly express. The inescapable conclusion of his early work is that the essential questions elude the logical, descriptive language.

The problem of language as a medium through which ideas are inevitably communicated—and a larger problem of all humanly devised symbolic systems, such as for instance mathematical symbols—enthralled the leading minds at the turn of the nineteenth and at the beginning of the twentieth centuries and provoked many responses in philosophical, literary, and scientific texts, as shown in the this dissertation. The ideas mentioned are but a few examples of a renewed interest in language, but they are representative of the kind of thinking that considers language as playing a role in the construction of what we call reality (although by no means did all thinkers agree upon the extent to which words related to the outside world, if at all.) One important conclusion that emerges from the brief overview of linguistic debates presented here is that "the reality studied by science is at least partly the product of its own discourse instead of being simply the product of the direct contact with nature herself" (Bulhof 158). Formulation of theories, the discussion, communication, and publication of research results are all connected to language, which is often characterized by a masterful use of rhetorical and persuasive devices and transcends the mere "objective" reporting of facts. The link between observation and language is direct: as pointed out by another critic, Brown, what is observed is a matter of language—analysis, interpretation, and restoring of the logical links between items we cannot observe and the observable output (52).[6]

All too frequently readers are quick to forget that what we are dealing with in the case of Darwin, Freud, Einstein, and Mach are texts, and that the various images and

metaphors that we find in them produce various associations and interpretations in the minds of different people. These texts are far from being simple, dry, and unadorned accounts. On the contrary, they use the "distracting" personal examples, thought experiments, metaphors, personifications, and literary analogies, all the while remaining a skillful presentation of specific ideas relevant to specific domains. As shown in previous chapters, these texts include elements that amuse and entertain the reader (such as Darwin's imagining what the apes might have said about their own situation had they been given a chance to do so), as well as some highly personal accounts which arouse feelings in the reader (such as, for instance, Mach's footnote describing how he obtained his insights regarding the nature of the ego while taking a stroll on a beautiful sunny day), and they also appeal to contemporary experiences of their readers. In addition, the authors of scientific works mentioned in this study were all extremely successful popularizers of their own work to non-professionals through public lectures, books addressed to a general readership, and through perfecting their texts in numerous succeeding editions. One conclusion that emerges from analyzing such "distracting" elements of scientific works, is that despite different readers' expectations in the case of a fictional text, on the one hand, and a scientific work, on the other, many of the rhetorical devices employed by both types of authors are the same.

Language is not the invisible, transparent medium of "objective" scientific writing as some empiricists would like it to be. Readers of the scientific texts explored in this dissertation are required to make a mental picture of what their authors are trying to convey. In some cases, these mental pictures cannot be literal due to the unrepresentable nature of the described phenomena, but must remain metaphorical. For instance, the

reader cannot "observe" relativity, but he or she can visualize what Einstein describes in his thought experiments with trains and lightening, falling elevators, or riding alongside a light beam. In a similar fashion, we cannot "see" the constructed nature of the concept of the "I," but it becomes more clear if it is referred to as an unsalvageable "I": we can form a mental image of it by looking at the faceless self-portrait Mach provides in his book. No one can "observe," in a literal sense, how the unconscious works, but it is fairly easy to understand the metaphor of an Oedipal conflict or repression. It is obvious that no one has been able to observe how evolution of the higher species happens, but we can "picture" the struggle for survival whenever we look at nature (or even, unfortunately and to a large extent erroneously, in the realm of human affairs—for not every struggle in life is a struggle for life). We cannot observe live nature in all its crowded complexity at any given moment but we can imagine a "tangled bank" teeming with life. The fact that the leading minds of modern scientific theories use metaphors and other devices so abundantly has led at times to widely divergent interpretations of their works.

Language helps us to visualize in our mind's eye what the writers of some scientific texts are talking about. The question is whether what we thus "see" is reality, truth, or just one model of it. Some of the language theories discussed above point to the latter answer. It is evident then that scientific texts possess a richness of meaning, even when such richness is perceived as undesirable. It is not that they are inexact, but rather their meaning is not fixed once and for all but depends upon the context, including but not limited to factors such as the education and background of their readers, the historical moment, theoretical framework guiding the research, and the general state of science of any given period. The analysis of the changed meaning of the concept of observation—

the guiding idea of this study--is an example of how scientific methods, literary devices, and the way people imagine themselves within culture are linked to each other. The empirical preoccupation with the analytical, the verifiable, and the unbiased could not disguise the fact that any scientific investigation, theory, or observation starts with an assumption or a preconception, the origin of which lies outside of a particular scientific theory and cannot be proven right or wrong within the framework of that theory. Such preconceptions have received various names in different critical works: themata (Holton), cultural matrix (Thiher), the essential concerns of an age (Smith) or centrally located ideas informing more than one discipline (Everdell). Darwin's gradualism is an example of such shared assumption—the idea that transformations take place slowly over vast stretches of time was important in geology, history, and in realist fiction. Articulated or not, openly acknowledged or hidden, such thought conventions restrict scientific and literary texts.

In connection with the problem of observation one such idea common to various branches of inquiry is the nineteenth century assumption that science achieved its status and authority among other branches of knowledge through disinterested observation--observation, experiment and the subsequent recording and exact repetition of results being regarded according to any such assumptions as allowing a "direct" window into the nature of reality. Through changes brought about by the theoretical writings of Darwin, Freud, Einstein, and Mach, however, observation ceased to be considered the ultimate, most reliable tool of inquiry into the workings of the universe and the human mind itself—although in many instances it remains the best available, if less than perfect, means of contact with the world. These thinkers had the power to imagine that which

could not be seen, as well as that which contradicted common sense or established traditional views.

"Beyond observation" then comes to stand for the view that acknowledges the importance of dreams, fantasies, subconscious motivations, and imagination in conjunction with what we call reality. This view takes into account the interpretive nature of scientific tools and instruments, whose output must pass through the unaided senses to be decipherable. It allows Gedankenexperimente and hypotheses to be necessary steps--even though based in unverifiable and therefore metaphysical assumptions—to scientific theories and discoveries. The areas that lie beyond empirical observation are those models, too, that describe many phenomena with the help of statistics and probability. Finally, such an expanded definition of observation must regard observers as necessarily participating in the act of observation and as being self-aware in the midst of the contingent nature of their findings. Imaginative literature, embedded in the same culture that ceased to regard theories as universally valid and intrinsic to the nature of the phenomena they described, responded by experimenting with different genres, characters, and narrative strategies.[7] The literary works explored in this study present characters whose main attitude is that of the observer, whose pages are full of scenes describing observation, gazing, looking at and being looked at. One common feature to emerge from an analysis of these diverse texts is that their observers are self-conscious and their narrators are unreliable because their perspective is no better, or not much better, than anybody else's, and that they feel vulnerable because trapped in the dual role between spectator and spectacle. Kafka's Rotpeter--also a describer of his own evolution--is a careful observer of human behavior, who at the same time remains a focal point of all

gatherings, such as variety shows and academic lectures. Rilke's character Malte, who is learning to see in a new way, finds himself followed by the gaze of the "outcasts" wherever he goes.

The observer, whether disinterested or self-conscious, does not "create" his or her observed reality—facts remain facts—but any observation entails a lens (whether a human sensory apparatus, a scientific instrument, a prior hypothesis, or a mathematical model) that imposes its framework upon what is observed. "Objective reality," loaded with the recent negative postmodernist connotations that it has regrettably acquired, does not "evaporate" simply because one acknowledges the role of aspects beyond positivistic observation. Far from it, analyzing those aspects and being aware of them, allows one a better, more sophisticated understanding of reality without neglecting the role of those symbolic systems, upon which both science and literature depend. Notions such as relativity, indeterminacy, the unconscious, the unsaveable "I," and the struggle for survival do not apply to all of science—let alone to all aspects of life—but only to a closed system of concepts that fit determined regions of experience.

Given the historically contingent nature of the reception of such notions, as well as the changing understanding of what observation means (which is not to say that such concepts are merely "arbitrary," or that they have no relation to the outside reality), it is appropriate to conclude this study by remarking that temporality itself, or historical thinking, was becoming an intrinsic part of knowledge in the late nineteenth and in the early twentieth centuries. The realization that certain branches of knowledge must realize themselves in the form of temporal narration and temporal awareness, is characteristic of modernity as an intellectual movement, which stands apart from, say, the a-temporal

medieval scholasticism. Time was gradually becoming an important part of many branches of knowledge: it was understood as change in the geological makeup of the earth, as evolutionary with respect to species; temporality was important for archeology, as well as for historical science; time began to figure in psychology and was recognized as a key notion to the concept of entropy in physics. Importantly, time was also beginning to be understood as a relative category in the physical science. The vastness of time, comparable to the immensity of space and its ungraspable nature, the possibility of conceiving of a time before humanity appeared and of doing so when it might have passed away, was a cause of anxiety, a source of scientific insight, and of imaginative interpretations in literature. In all these cases the notion of time, became a story with an end, at least as far as human beings were concerned. The cosmos, unbounded but finite, was now perceived as a paradox, and time seemed to acquire self-referential characteristics. In this context, Musil's words about the nature of time and events awaiting Europe seemed to be prophetic and even now applicable to the conclusions reached here:

> Der Zug der Zeit ist ein Zug, der seine Schienen vor sich herrollt. Der Fluss der Zeit ist ein Fluss, der seine Ufer mitführt. Der Mitreisende bewegt sich zwischen festen Wänden auf festem Boden; aber Boden und Wände werden von den Bewegungen der Reisenden unmerklich auf das lebhafteste mitbewegt.[iv]

[iv] The train of events is a train that lays down its own tracks as it goes along. The river of time carries its own banks along with it. The traveler moves on a solid floor between solid walls, but the floor and the walls are strongly influenced by the movements of the travelers, though they do not notice it (DMoE Vol. I, ch.98, p. 484).

What we observe depends to no small extent on how we perceive time, which in turn is influenced by our frame of reference: as a result, observation, then, emerges as a highly fallible affair; it is no guarantee of knowledge in the sense of it being a simple copy of reality, but in many cases it remains the only means of gaining access to the world around us.

Notes to Chapter One
Introduction: Observation Re-Examined

[1] Hiebert, Erwin, "The Transformation of Physics, Fin de Siècle and Its Legacy, eds. Mikulàš Teich and Roy Porter (Cambridge: Cambridge UP, 1990) 235-53.

[2] The concept of probability is fairly old, dating back to the seventeenth century and ideas of Laplace and Pascal, when it was applied to games of chance. This type of probability referred to essentially deterministic processes for which the necessary completeness of data was absent (for example, the exact momentum of a tossed coin). However, events at the atomic level, which began to be explored experimentally at the end of the nineteenth and in the beginning of the twentieth century, proved to be truly random and could be described only through the statistical and probabilistic terms of quantum mechanics. See Ian Hacking, "Probability and Determinism, 1650-1900, Companion to the History of Modern Science, eds. Olby, Cantor, et. al. London, New York: Routledge, 1990), 690-701.

[3] Erwin Hiebert, "The Transformation of Physics," Fin de Siècle and Its Legacy, ed. Mikulàš Teich and Roy Porter (Cambridge: Cambridge UP, 1990) 235-53.

[4] Such cultural assumptions have been given various names in critical literature: for instance, Allen Thiher calls them "a cultural matrix," Gerald Holton uses a term "themata." Important is the fact that all various terms, as a rule, refer to groups of assumptions that members of a given community use to make sense of the world.

[5] Other contemporary writers, among them William James, Wilhelm Dilthey, and Ludwig Wittgentstein, point out that many errors in science and philosophy arise from the misleading influence of language, which does not allow one to distinguish between objective qualities and sensations (for example, that the same word "red" is used to describe an objective quality and our perception of it). Language ideas are discussed in more detail in the Conclusion.

[6] Phenomena were considered by positivists to be determined by external causes acting entirely independent of one's will and were studied by empiricists by reducing them to smaller and less complex data. (Parker, 1994) 708.

[7] Novalis, Werke in einem Band (Hamburg: Hoffmann und Campe, 1959), 413, 414 respectively.

[8] Robert Musil, "Mind and Experience," Precision and Soul (Chicago: The U of Chicago P, 1990) 149.

[9] Nietzche's influence on this debate has been thoroughly explored in criticism and is not part of my investigation.

[10] Essayism (der Essayismus) is Musil's term and it is preserved in the English translation of the novel. It will be used in the relevant sections of the present study.

[11] For further discussion, see J.B. Morell, "Professionalization," 980-89 and Steven Shapin "Science and the Public," 990-1007, McGraw-Hill Concise Encyclopedia of Science and Technology, Sybil Parker, ed. (New York: McGaw-Hill, 1994).

[12] See Peter Smith, Metaphor and Materiality, 15-18.

[13] H.B. Nisbet, Goethe and the Scientific Tradition (London, U of London, 1972) 29.

[14] The idea of the gradual degrees of difference between phenomena also characterized his thinking in botany and chromatics (see Metamorphose der Pflanzen and Zur Farbenlehre). Even human behavior and chemical reactions are in some ways analogous, an idea explored in his novel Die Wahlverwandschaften.

[15] This change is evident from comparison of several of his essays: „Der Versuch als Vermittler zwischen Objekt und Subjekt" (1792) and "Erfahrung und Wissenschaft" (1798), which strike a Baconian note, and Goethe's notes written in 1805-07 where he criticizes certain Baconian ideas as unsound (see H.B. Nisbet 31-35).

[16] For further discussion of naturalistic attitudes in German literature, see Bithell 1-26.

[17] This, of course, was not the only way to view nature. As I mention above, an alternative understanding of the universe as an organism, rather than as a machine, was crucial for Goethe and many Romantic writers.

[18] See, for example, Hans Kügler "Dichtung und Naturwissenschaft: Einige Reflexionen zum Rollenspiel des Naturwissenschaftlers in: B. Brecht, *Das Leben des Galilei*, F. Dürrenmatt, *Die Physiker*, H. Kipphardt, *In der Sache J. Robert Oppenheimer*" in Weg und Weglosigkeit: Neun Essays zur Geschichte der deutschen Literatur im zwanzigsten Jahrhundert (Heidenheim: Heidenheimer, 1970) 209-35, Michael Morley „Dürrenmatt's Dialogue with Brecht: A Thematic Analysis of *Die Physiker*" in MD 14 (1971-72):232-42, and Manfred Tietzel „Sympathy for the Devil: Die Literarische Figur des Wissenschaftlers aus der Sicht der modernen Wissenschaftslehre" in Zeitschrift für allegemeine Wissenschaftstheorie 11 (1980): 254-75.

[19] For example, Sonja Rae Fritzsche, "Alternate worlds, alternate visions: Cultural politics and socialist critique in East German science fiction," diss., U of Minnesota, 2001; Paul Youngman, "Myth and the Railway in the Nineteenth Century German Realism," diss., U of NC at Chapel Hill.

[20] Peter Smith, Metaphor and Materiality: German Literature and the World-View of Science, 1780-1955 (Oxford: Legenda, 2000), 2-3.

[21] For discussion of the confrontation between Snow and Leaves, see Allen Thiher, "Prefatory Thoughts on Two or More Cultures," in Fiction Refracts Science: Modernist Writers from Proust to Borges (Columbia: U of Missouri P, 2005), 1-17.

[22] See Paul Konrad Kurz, "Literature and Science," On Modern German Literature, vol. I (Alabama: U of Alabama P, 1970), 56-79. Also, Pamela Gossin, "Introduction," Encyclopedia of Literature and Science (Westport, CT: Greenwood Press, 2002) 141-44.

[23] The question of culture, in general, and imaginative literature, in particular, influencing scientific texts is by no means an easy one. It is possible however to trace concrete examples of how reading experiences, as one instance of such influence, were affecting scientific theories: Freud's borrowing of his foundational terms from Greek tragedy is one such instance. The fact that Freud and his contemporaries received a classical education in a *Gymnasium*, which included reading of the leading Greek and Roman authors, allows placing such "reading experience" into a larger cultural context: the type of education which was available, the kind of metaphors which were recognizable to his readers, and the general framework of the emerging theory. As for his explorations of the "unconscious," Freud himself credited the Romantics with the discovery of this substratum of mental life.

Notes to Chapter Two
Scientific Objectivity in Kafka's "A Report to an Academy" and in Darwin's Works

[1] Franz Kafka, "A Report to an Academy," The Complete Stories, ed. N. Glatzer (New York: Schocken, 1971), 259.

[2]Charles Darwin, The Descent of Man, From So Simple a Beginning, ed. O. Wilson (New York: Norton, 2006), 785.

[3] Gerhard Kurz, for example, writes in his after word to *Reclam* edition of Kafka's short stories (1995) that "Ein Bericht" can be understood as "eine satirische Parabel eines Künstlers und der jüdischen Assimilation" (365). Margot Norris reads the story as an example of Kafka's aversion to imitation: Rotpeter's imitation is an evolutionary maneuver in the struggle for survival, the result of which is degrading. Similarly, Frederick Karl asserts that Rotpeter's evolution brings regress and suffering, and this regress symbolizes the rejection of the nineteenth century culture of reason and rational planning by twentieth century Modernist culture. Peter Stine analyzes 'Ein Bericht" among other stories, and writes that access to the human world is viewed in the story as a sexual wound, even a castration, as the ape's penchant for pulling down his trousers makes clear (71).

[4] Charles Darwin, On the Origin of Species, From So Simple a Beginning, ed. Edward O. Wilson (New York: Norton, 2006), 756.

[5] Charles Darwin, The Descent of Man, From So Simple a Beginning, ed. Edward O. Wilson (New York: Norton, 2006) 798.

[6] Despite his repeated refusal to treat man as the work of a separate act of creation by God, and his belief that the birth of both, the species as well as the individual, are the result of a blind chance, it was not Darwin's intention to offend religious sensibilities of his audience. He never had it his goal to set science and religion at each other's throats, nor was the impact of his work as sudden and shocking as it is sometimes portrayed. For further reference, see Jim Endersby, "Creative designs? How Darwin's *Origin* caused the Victorian crisis of faith, and other myths," TLS March 16, 2007: 3-5.

[7] Gerhard Kurz writes, for instance: "Die Evolution des Affen Rotpeter in *Ein Bericht für eine Akademie* kann zugleich als eine satirische Parabel eines Künstlers und der jüdischen Assimilation gelesen werden" (365).

[8] Charles Darwin. The Descent of Man, From So Simple a Beginning, ed. Edward O. Wilson (New York, Norton, 2006) 813.

[9] Karl-Heinz Fingerhut. Die Funktion der Tierfiguren im Werke Franz Kafkas. Offene Erzählgerüste und Figurenspiele. (Bonn: Bouvier, 1969). p. 162 ff.

[10] Hagenbeck, the company whose ship captures Rotpeter, was a historical fact (Norris, 66). It is not incidental that Kafka chooses to introduce elements of documented reality into an otherwise fantastical report: it is precisely this interest in the exotic fauna, in marginal, and transitional species that forms an historical dimension of the story.

[11] See Kafka, The Complete Stories (New York, Schocken, 1971) 259-62.

[12] See Paul Heller, Franz Kafka: Wissenschaft und Wissenschaftskritik (Tübingen: Stauffenburg, 1989), 123-59.

[13] See Kafka, The Complete Stories (New York, Schocken, 1971) 260.

[14] Joachim Seyppel. "The Animal Theme and Totemism in Franz Kafka." (The American Imago 13, 1956) 77.

[15] Wolfgang Köhler, The Mentality of Apes, trans. Ella Winter, 2nd edition (London: Routledge, 1927), 265.

[16] Stephen Jay Gould, Full House: The Spread of Excellence from Plato to Darwin (New York: Harmony Books, 1996) 136-37.

[17] Jacques Barzun. Darwin, Marx, Wagner: Critique of a Heritage. (New York: Doubleday Anchor Books, 1958) 73.

Notes to Chapter Three
New Vision in Rilke's Die Aufzeichnungen des Malte Laurids Brigge and Freud's "Der Dichter and das Phantasieren"

[1] Christine Kanz, A Review of Psychoanalyse in der modernen Literatur. Kooperation und Konkurrenz by Thomas Anz. A Review, The German Quarterly Autumn 2002: 440-44.

[2] Lou Andreas-Salomé eventually introduced Rilke to Freud, however this meeting happened as late as 1913, during her participation in the Munich Congress of psychoanalysts, and only after Rilke's completion of the novel. Thus, in her Freud Journal, Andreas-Salomé writes: "I was delighted to bring Rainer to Freud, they liked each other, and we stayed together that evening until late at night" (169).

[3] "Then one might have one's devil's exorcized, since in ordinary social life they really are only disturbing and painful, and should the angels by some chance leave as well, one would have to construe that too as a simplification and tell oneself that in the next, the new profession (which?) there would certainly be no use for them. But am I the man for such an experiment, with all the consequences of that experiment?" (Letters of R.M. Rilke 1910-26, New York: Norton, 1969.) January 12, 1912, to Lou Andreas-Salomé 49.

[4] This thematic division was proposed by Rilke in the letter to his polish translator Witold Hulewicz (Reclam kommentierte Ausgabe of Die Aufzeichnungen) 297.

[5] Andreas Huyssen, "Urban Experience and the Modernist Dream of a New Language," A New History of German Literature (Cambridge: U of Harvard P, 2004) 668-72.

[6] MLB, Reclam, Dokumente, 287.

[7] Kunstding is a thing as preserved in art and poetry. The objects in Rilke's Dinggedichte, as illustrated by his cycle Neue Gedichte, are portrayed with precision of a detached painter. This style allows to "preserve" a thing of external reality from the vagaries of time.

[8] In his famous essay "The Work of Art in the Age of Mechanical Reproduction," (1936), Walter Benjamin addressed the problem of a shift in the status of traditional art which is prompted by the rise of cinematography and photography, as examples of technological innovations allowing to re-produce works of art in large quantities. Although written later than the period this chapter focuses on, this essay is relevant because, among other things, it addresses how technically-reproduced objects of art—as opposed to those, for instance, produced in small workshops—lose their "aura," their unique presence in the historical time and space.

[9] Freud, Die Traumdeutung, siebente Auflage, (Leipzig und Wien: Franz Deuticke, 1922) ii.

[10] Freud's theory evolved over time, and while his earlier hypotheses were tied to neurological and physico-chemical processes, his later thinking was not linked to anatomical references. Explained in part by the lack of knowledge about the functioning of the nervous system at the time when he wrote, Freud's concept of the mind was not a neurological but a psychological one.

[11] Shaw's comment can be read in the context of Rilke's „Torso Apollos" poem: the imperative "du muß dein Leben ändern" appears to be a result of observing what remained of the ancient sculpture. This sculpture is essentially a "fragment," a remaining part of what had once been a whole, but the artistic vision creates a complete, coherent, and beautiful poem, demanding that the reader, too, look at his or her life and change it. In a somewhat similar vein, Nietzsche's The Birth of Tragedy pronounces that "the existence of the world is justified only as an aesthetic phenomenon " implying, perhaps, that there is no such transcendence outside of art, and that only by overcoming the self, the Christian morality of negation of life, as well as the physical and biological constraints, can one's life acquire meaning (Nietzche, The Birth of Tragedy, Section 5) 8.

[12] Mach's ideas are discussed in more detail in Chapter Five.

[13] It has been proved by modern child psychologists that young children, as well as some adults, lack the ability to distinguish between the real and the imaginary, and the very notion of this distinction is not applicable to children who take make-believe, fantasy, and reality as one and the same. However, the distinction between the real and play is necessary for Freud's argument because reality is generally explained as unsatisfying for children as well as for adults, and they need a release of this dissatisfaction in some other way.

[14] It is curious to find that Rilke himself referred to the problem of "reality" in connection with Malte. In Letters on Cezanne he wrote: "And suddenly (and for the first time) I understand the fate of Malte Laurids. Isn't it this: that this testing by the real exceeded his capacities, that he failed, even though in his mind he was so convinced of the need for this testing that he instinctively sought it out until it embraced him and clung to him and never left him again?" (69) In Rilke's opinion his character failed to transition smoothly into the reality-governed world of adulthood.

[15] Hermann von Helmholtz published his famous paper on the conservation of energy in 1847.

[16] Freud does bring up societal rather than biological reasons for this separation of forbidden wishes between the two genders.

[17] Andreas-Salomé's advice to Rilke against undergoing psychoanalysis is all the more surprising considering her deep commitment to it. Rudolph Binion speculates that Rilke's

therapy would also involve parts of her own past and she did not want that revealed (Frau Lou: Nietzsche's Wayward Disciple (Princeton: Princeton UP, 1968) 45.

[18] The "traditional" argument is that Freud was forced to choose psychology over medical practice because of his racial identity.

[19] Freud later modifies his theory to include the underlying wish, not an actual memory, for all hysterical symptoms. From treating his patients, he noticed that it was not always memory of an actual event that was repressed but a wish that sought its fulfillment.

[20] Freud, "On Beginning the Treatment. Further Recommendations on the Technique of Psycho-Analysis I" (1913). The Standard Edition of the Complete Psychological Works, ed. and transl. James Strachey (London: Hogarth Press, 1961) 135.

[21] The image of a world seen from a window of a train is a distinct moment of an inspiration and revelation for several thinkers whose ideas are discussed in this study. Besides Freud, one thinks of Einstein's *Gedankensexperimente*, Mach's reflections on the nature of visual perception in his seminal Die Analyse der Empfindungen, one is equally reminded of Mann's character's (Hans Castorp's) reflections on board the train as he is on the way to the Magic Mountain, and of Musil's several passages from Der Mann ohne Eigenschaften (notably, the one where he describes Austrians as a nation that chose to get off the "train of time"). What the above references have in common—besides the time of their origin—is that all these thinkers observe the world in flux, rather than a static, stable, and unchanging reality, and that such observations can be at times revealing and at times disorienting and even confusing, depending on the observer's perspective.

[22] As an epigraph to his Interpretation of Dreams, Freud chooses a quote from Virgil: "Flectere si nequeo Superos, Acheronta movebo" (If I cannot bend the Higher Powers, I will move the Infernal Regions"). Although Freud himself explains that the epigraph was chosen to indicate the direction of his work—that dreams have hidden meaning which is capable of interpretation—other reading of this epigraph is possible. Carl Schorske, for instance, makes it part of his larger argument that many fin-de-siècle thinkers have retreated into the dark realms of the psyche upon realizing their inability to influence the political and social realms.

[23] "Die Forgeworfenen" is the word Malte uses to characterize all those outcasts whose gazes pursue him throughout his wanderings. They are patients in the hospital, strangers he sees in the streets, the newspaper seller, the woman whose face is "lost," young girls who seek their destiny in the big city, and all those who in Malte's opinion do not belong to any societal units which are disintegrating in the contemporary to him world. They are not beggars, but "human trash, husks of men that fate has spewed out" (Rilke, The Notebooks 40).

[24] The Romantics tended to glorify childhood as a naïve, unspoiled, golden time and hoped for a return to the old times—the childhood of the humanity. The connection

between some of the Romantic ideas and their new form in which they reappeared in psychoanalyses was briefly addressed in the Introduction to this study: they include themes such as childhood, the past, and dream symbolism. Freud is often credited with a curious confession that it was not him but the Romantics who discovered the unconscious, which might have appeared in one of his last interviews (I have not been able to find the exact source of it).

[25] This also the lens through which John E. Toews views Freud's "Dora." See "Refashioning the Masculine Subject in Early Modernism: Narratives of Self-Dissolution and Self-Construction in Psychoanalysis and Literature, 1900-1914.". In The Mind of Modernism: Medicine, Psychology, and the Cultural Arts in Europe and America, 1880-1940. Ed. Mark S. Micale, (Stanford: Standford UP, 2004) 298-335.

[26] Mark Micale. "Introduction." The Mind of Modernism.

Notes to Chapter Four
The Concept of Space-time as Dependent on the Observer
In Thomas Mann's Der Zauberberg and in Einstein's Theory of Relativity

[1] Bertrand Russell, The ABC of Relativity (London: George Allen & Unwin, 1958) 16.

[2] Einstein used, for instance, the image of a moving train in his 1905 Relativity Paper, as well as in his later Relativity: The Special and General Theory, 1916.

[3] The director of the sanatorium and his assistant, for instance, are called respectively (by Settembrini) Minos and Rhadamanthus, both figures from Greek mythology. The high altitude of the Magic Mountain is thus connected with the underworld of the myth, and there is an implied connection between the two men who make decisions about the term of the patients' stay based on the novel results of modern science (X-ray, psychoanalysis), and the judges of the underworld.

[4] "Der Roman war mir immer eine Symphonie, ein Werk der Kontrapunktik, ein Themengewebe, worin die Ideen die Rolle musikalischer Motive spielen. Man hat wohl gelengentlich—ich selbst habe es getan—auf den Einfluß hingewiesen, den die Kunst Richard Wagners auf meine Produktion ausgeübt hat." (Mann, „Einführung," 611).
(For me, the novel was always a symphony, a work of counterpoint, woven out of themes, in which ideas played the role of musical motifs. On occasion, the influence of Richard Wagner's art on my work was actually pointed out, and I pointed it out myself, too.)

[5] See Isaacson 77-79, 125-26.

[6] Newton's view that material bodies move through space according to paths which can be mathematically calculated in space and time, led to the picture of a "clockwork universe" (ruled by God the Watchmaker)—the image of a world predictable in every

detail, as long as we know the right laws. Whereas many ancient cultures viewed the cosmos as a living organism, Newton gave us a rigidly determined world functioning like a gigantic clocklike mechanism. For more on this, read Paul Davies, About Time: Einstein's Unfinished Revolution, (New York, Simon & Schuster, 1995) 30-53.

[7] It is important to keep in mind that Einstein himself never considered his work as shattering the foundations of Newtonian mechanics, but as building on the laws discovered by the great physicists before him. In his lecture "On the Theory of Relativity," he wrote about his theory that "We have here no revolutionary act but the natural continuation of a line that can be traced through centuries. The abandonment of certain notions connected with space, time, and motion hitherto treated as fundamentals must not be regarded as arbitrary, but only as conditioned by observed facts" (Ideas and Opinions, 246).

[8] A theory of "everything" remains a Holy Grail of modern physics. In its current re-incarnation--the string theory-- is still fails to combine all fundamental forces and particles in nature under the same set of laws and formulas. Simplicity and harmony eludes modern unified-field theorists: the string theory suggests dimension upon curled dimension, new particles and anti-particles whose existence no one can prove, and speculates about parallel worlds, as space folds upon itself, but every ecstatic pronouncement that a unified theory has finally been proved quickly turns out to be false. Or rather, there are too many theories that no one can prove to be wrong however they all fail to make testable predictions; to this day no one even knows what the string theory does tell us about the world. The belief in harmony and simplicity of nature, however, remains a steady part of the Western culture. See the chapter entitled "The Beauty Myth" in Lee Smolin's The Trouble with Physics, (Boston: Houghton Mifflin Company, 2006) 18-37.

[9] This chapter does not deal with Einstein's General Theory of Relativity, his search for a unified field theory, or his later opposition to quantum mechanics. Apart from Einstein's famous thought experiment with an accelerated elevator, the model of reality outlined in general relativity is harder to visualize as it deals with non-Euclidean geometry.

[10] Despite the fact that his theories, as they were interpreted in the public imagination, seemed to have led to less certainty and more subjectivity, Einstein himself was very reluctant to give up strict causality and always stressed that the task of physics was to search for laws that would explain the universe in terms of cause and effect.

[11] The most notorious example of how Einstein's ideas were distorted is the assertion that "everything is relative," implying that history, morality, crime, health lack any objective criteria of judgment.

[12] Isaacson 266-67.

[13] Not only was Mann aware of Einstein's theories, but in their separate lives several striking parallels that are also suggestive may be said to emerge. Both received early education in Munich; both were Nobel laureates; both fled Nazi Germany for Switzerland; both received honorary doctorate degrees from Harvard in 1935; and later in life (1938-40) they were neighbors in Princeton, NJ, and knew each other intimately.
While these biographical coincidences should be treated as such (in other words, they had no knowable influence on Mann's novel discussed here), the parallel paths of these two diverse thinkers must be taken into consideration in any discussion of their works as part of their historical moment. In other pairs this dissertation explores (Kafka-Darwin, Rilke-Freud, and Musil-Mach) such similarities did not exist: Kafka and Darwin, for instance, were not even contemporaries, but their discussed works have striking parallels outlined in the first chapter of this dissertation.

[14] The theory of an atom in and of itself was nothing new in physics. Einstein's contribution however consisted in proving conclusively the physical reality of molecules and atoms and in describing a number of experiments (conducted by other physicists), which proved how the existence of these particles was reflected in the observable phenomena. Einstein's predictions proved that atoms and molecules were "real" and not just a theoretical constructs conveniently accepted by the scientists, an opinion upheld by another great physicist Ernst Mach.

[15] See Bern Dibner, The New Rays of Professor Röntgen, (Norwalk: Burndy Library, 1963), 23-28.

[16] This insight I owe to Sara Danius' article.

[17] The English translation is here inaccurate: it compares the connection of time and narration on the one hand with the connection between bodies in space. The German original however states that time is connected to narration in the same way as it is connected to bodies in space. This is a crucial distinction because in this sentence Mann shows an awareness of the relativity theory: time is connected to bodies in space (rather than bodies are connected to each other in space, as the English translation suggests).

[18] Here again the English translation levels off the scientific connotations of the passage: "wie groß es ist selber als Körper ist" is translated merely as "size." Lowe-Porter's translation (1949) is more accurate: "you would need to know how much room it occupies as a body in space."

[19] Albert Einstein, The Meaning of Relativity. Fifth Edition. (Princeton: Princenton UP, 1988), 30.

Notes to Chapter Five
Reality as a System of Functional Relationships
Robert Musil and Ernst Mach

[1] Ernst Mach, The Analysis of Sensations and the Relation of the Physical to the Psychical, (New York: Dover, 1959) 310.

[2] Mach, who dismissed the self as a mere epistemological necessity, denying any permanent, invariant substance to the "I," is frequently blamed for "dismantling" the notion of the self. His sole goal, however, in re-formulating the conception of the self was to banish all metaphysical notions from science because he saw them as unverifiable. The abstract notion of the "I" was such metaphysical construct. As mentioned below, Mach's theories were not the only source of such re-thinkings of the "I."

[3] To the end of his life, Mach did not recognize the material reality of atoms and molecules, since these tiny particles are not immediately available to observation and cannot be reduced to "sensations." For Mach, they remained a matter of symbols used for practical convenience in science. In this sense, Mach's positivism can be called reductive, that is, excluding not only metaphysical notions, such as absolute time and space, but also those aspects of material reality that are not available to unassisted observation. The physical reality of atoms and molecules was demonstrated by Einstein's early works, and Mach's persistent refusal to acknowledge it points to the fact that to some extent he remained a man of his times, reluctant to yield on some of his views, although many aspects of his theories opened the door for future research.

[4] Mach was expounding David Hume's views, who taught strict adherence to observation and experience, criticizing a priori or metaphysical speculations unverifiable by experience (such as absolute time and space). He also supported Hume's view that causality was one such metaphysical myth.

[5] David Luft, Precision and Soul. Essays and Addresses, (Chicago: U of Chicago P, 1990) xxii.

[6] For a more detailed discussion of Musil's dissertation, see Thiher 60-67, and Sebastian 16-26. Thiher's argues that Musil in his dissertation attempted to find weak points in Mach's epistemology by challenging his definitions and without resorting to secondary sources. Sebastian describes how Musil's dissertation proves that Mach's epistemology lacks inner consistency and contradicts itself.

[7] Allen Thiher, Fiction Refracts Science, (Columbia: U of Missouri P, 2005), 58.

[8] Oscar Wilde. "The Preface." The Picture of Dorian Gray, (New York: Oxford UP, 2000), 48.

[9] For the relevant discussion of ethics, based, as here, on the image of a ring without a center, a structural void, see Patrizia McBride The Void of Ethics: Robert Musil and the Experience of Modernity, (Evanston, IL: Northwestern UP, 2006). According to this in-depth exploration of the writer's conception of morality, Musil's goal is to avoid filling the void with yet another absolute vision of good life, with yet another view of ethics as based on the atemporal and universal rules of conduct (4-14). Musil sought to acknowledge the singular and utterly contingent character of ethical events (69).

[10] In a later essay, dated 1918, "Sketch of What the Writer Knows," Musil explains why many felt that "the ground is shaky" in exact sciences: "the most basic principles of mathematics are logically unsecured; the laws of physics have only an approximate validity, and the constellations move in a system of coordinates that nowhere has a locus" (Precision and Soul 63).

[11] One is immediately reminded of T. Mann's character Tonio Kröger who regards himself such an outsider among the blue-eyed, the blond, and the living. This view of the writer as outsider takes its origins from the Romantic period and is virtually unknown before that: the late Romantic writer E.T.A Hoffmann, for instance, portrayed the conflict between the philistine everyday world and the troubled fantasy world of a creative genius. Musil, on the other hand, describes a society where the notion of a genius is no longer applicable in the same sense of the word.

[12] Mach's portrait can be found in The Analysis of Sensations, (New York: Dover, 1959), 19, and is reproduced a little further in this chapter.

[13] Quetelet's Treatise on Man and the Development of his Faculties (1835) was a testimony to his belief that it was possible to predict the underlying regularities for normal as well as abnormal behavior. He named his new science "social physics" (it was Auguste Comte who invented the term "sociology"), and by applying the essentially astronomical at the time method to social phenomena, he came up with tables of data describing virtually every characteristic of life, behavior, as well as physical and intellectual properties of his contemporaries. The new concept of social physics became the "average man," graphically described as a person with the qualities on top of the bell curve. The highly debatable concept of the "average man" had undergone some notable changes, and was later regrettably applied to the notion of "race." In the context of my discussion here, the "average man" is in fact the "man without qualities" because it does not refer to any particular individual but to a statistically average group of properties.

[14] Thomas Sebastian, The Intersection of Science and Literature in Musil's *The Man Without Qualities*, (Rochester, NY: Camden House, 2005), 26-28.

Notes to Chapter Six
Conclusion: What Do We See When We Observe?

[1] Such is for instance the bizarre fate of the term "struggle for survival," whose misinterpretation and wrong usage outside of its proper context led to the situation when many people literally see a struggle of all against all in many irrelevant to biology domains. Similarly, the overabundant use of the term "relativity" and its erroneous transfer to virtually all areas of human life is responsible for the outlook that declares "everything" to be relative. It is in this sense, too, that language is one of the factors shaping our world view, although it need not be declared to be the single factor.

[2] This study has been trying to avoid this term—unless it appears as part of a quotation—which has come to mean so much that it hardly means anything at all. Instead, notions such as "text," "culture," "debates," and others are used in appropriate contexts.

[3] For further discussion, see The Mind of Modernism, ed. Mark S. Micale, (Stanford: Stanford UP, 2004), 1-19.

.

[4] It is ironic that the Nobel prize for his scientific work had eluded him and he was awarded a literary prize—Goethe Prize—for his contributions to German prose.

[5] It would be wrong perhaps to conclude from Saussure's ideas alone that words cannot make references to the outside world—although much later structuralist thought attempted to make such connections. If meanings are elusive, language can distort as much as clarify and that ambiguity is as much a characteristic of language as exactness. What Saussure meant however by the "arbitrariness" of the sign—the idea frequently misinterpreted or carried out to the extreme by later thinkers—is that the signifying material of the sign bears no intrinsic or natural resemblance to what it signifies. Moreover, Saussure complicates the idea of arbitrariness by identifying the linguistic sign not as an entity which unities a thing and a name, but a concept and an acoustic image.

[6] An example of a theoretical framework guiding observation is the observation of an electron: in this sense seeing is different from observing. No one can ever see an electron, which is not to say that scientists cannot develop methods and instruments which would help them observe electrons.

[7] When I say that theories ceased to be regarded as "universally valid" I mean that scientists began to be more aware to the question of scale. The development of scientific tools, measuring techniques, and methods of analysis allowed to distinguish between the macro-phenomena and micro-phenomena, as well as to be more perceptive to the place of

humans between the two “worlds.” Same physical laws and formulas do not apply to all of these domains with equal validity.

Bibliography

Primary Sources

Aesop. Fables of Aesop. Trans. S.A. Handford. Baltimore: Penguin Books, 1961.

Andreas-Salomé, Lou. The Freud Journal. London: Quartet Books, 1987.

Apuleius. The Golden Ass. Trans. E.J. Kenney. London: Penguin, 2004.

Bölsche, Wilhelm. Die naturwissentschaftlichen Grundlagen der Poesie: Prolegomena einer realistischen Ästhetik. München: Dt. Taschenbuch-Verl., 1976.

Brown, Harold. Observation and Objectivity. New York: Oxford UP, 1987.

Darwin, Charles. The Expression of the Emotions in Man and Animals. New York: Appleton and Company, 1898.

- - -. The origin of species by means of natural selection, or, The preservation of favored races in the struggle for life. New York: Modern Library, 1998.

Einstein, Albert. Relativity: the special and the general theory; a popular exposition. New York: Crown Publishers, 1961.

- - -. The Meaning of Relativity. 5th ed. Princeton, NJ: Princeton, UP 1988.

- - -. Ideas and Opinions. New York: Wings Books, 1954.

- - -. "Maxwell's Influence on the Evolution of the Idea of Physical Reality." Ideas and Opinions, 266-270.

- - -. "On the Theory of Relativity." Lecture at King's College, London, 1921. Ideas and Opinions, 246-49.

- - -. "Principles of Research." Ideas and Opinions, 224-27.

- - -. "Principles of Theoretical Physics." Inaugural Address before the Prussian Academy of Sciences, 1914. Ideas and Opinions, 220-23.

- - -. “What is the Theory of Relativity?” Written at the request of The London Times, 1919. Ideas and Opinions, 227-32.

Freud, Sigmund. “Creative Writers and Daydreaming” The Creativity Question, ed. Rothenberg, Albert and Carl R. Hausman. Durham, NC: Duke UP, 1976. 48-54.

- - -. The Standard Edition of the Complete Psychological Works. Ed. and trans. James Strachey. London: The Hogarth Press, 1959. Rpt. 1961, 1968.

- - -. Die Traumdeutung. Frankfurt am Main: Fischer Taschenbuch Verlag, 1991.

Goethe, Johann Wolfgang von. Sämtliche Werke nach Epochen seines Schaffens. München: C. Hanser, c1985-1998.

Gould, Stephen Jay. Full House: The Spread of Excellence from Plato to Darwin. New York: Harmony Books, 1996.

Haeckel, Ernst. Art Forms in Nature. Munich: Prestel, 1998.

Heisenberg, Werner. The Physicist’s Conception of Nature. Transl. Arnold J. Pomerans. New York: Harcourt, Brace & Co, 1958.

Hofmannsthal, Hugo von. “Ein Brief.”

Kafka, Franz. Sämtliche Erzählungen. Herausgegeben von Paul Raabe. Frankfurt am Main: Fischer, 1970.

- - -. Erzählungen. Stuttgart: Reclam, 1995.

Köhler, Wolfgang. The Mentality of Apes. London: Routledge, 1948 ed.

Mach, Ernst. The Analysis of Sensations and the Relation of the Physical to the Psychical. Trnsl. C. M. Williams. New York: Dover Publications, 1959.

Mann, Thomas. Der Zauberberg. Stockholm: Fischer, 1939.

- - -. The Magic Mountain. Trans. John E. Woods. New York: Vintage Books, 1996.

- - -. The Magic Mountain. Trans. H. T. Lowe-Porter. New York: Knopf, 1949.

- - -."Einführung in den 'Zauberberg': Für Studenten der Universität Princeton," Gesammelte Werke in Dreizehn Bänden. V. XI, Reden und Aufsätze, (Frankfurt: Fischer, 1974). 602-17.

- - -. "Okkulte Erlebnisse," Gesammelte Werke. V. X, 135-71.

Musil, Robert. Der Mann ohne Eigenschaften. Reinbek bei Hamburg: Rowohlt, 1981.

- - - . The Man Without Qualities. Transl. Sophie Wilkins and Burton Pike. New York: Knopf, 1996

- - - . Diaries: 1899-1941. Trnsl. Philip Payne. New York: Basic Books, 1998.

- - -. Precision and Soul. Essays and Addresses. Trans. and ed. by Burton Pike and David Luft. Chicago: The U of Chicago P, 1990.

Newton, Isaac. Principia: The Mathematical Principles of Natural Philosophy. Vol. I. Berkley: U of California P, 1991.

Nietzche, Friedrich. The Birth of Tragedy; or, Greekness and Pessimism, in Philosophical Writings, ed. Reinhold Grimm and Caroline Molina y Vedia. New York: Continuum, 1995. 3-73.

Novalis. Werke in einem Band. Hamburg: Hoffmann und Campe, 1959.

- - -. Heinrich von Ofterdingen. Stuttgart: Reclam, 1987.

Plato. The Republic. New Haven: Yale UP, 2006.

Proust, Marcel. Remembrance of Things Past. New York: Random House, 1932.

Quetelet, Adolphe. A Treatise on Man and the Development of His Faculties. New York: B. Franklin, 1968.

Rilke, Rainer Maria. Die Aufzeichnungen des Malte Laurids Brigge. Kommentierte Ausgabe. Ed. Manfred Engel. Stuttgart: Reclam, 1997.

- - - . The Notebooks of Malte Laurids Brigge. Trans. Stephen Mitchell. New York: Vintage Books, 1985.

- - -. Letters of Rainer Maria Rilke. 2 vols. New York: W.W. Norton & Co., 1969.

- - - . Letters on Cezanne. Ed. Clara Rilke. New York: Fromm, 1985.

- - - . Letter to Witold Hulewicz. 10 November 1925. Manfred Engel 296-298.

- - - , and Lou Andreas-Salome. The Correspondende. Trans. Edward Snow and Michael Winkler. New York: Norton, 2006.

Russell, Bertrand. The ABC of Relativity. London: George Allen & Unwin Ltd, 1958.

Simmel, Georg. "The Metropolis and Mental Life." (1903, "Die Grossstädte und das Geistesleben").

Wilde, Oscar. The Major Works. The Preface to the Picture of Dorian Gray. New York: Oxford UP, 2000. 48.

Wittgenstein, Ludwig. Tractatus logico-philosophicus. London: Routledge, 1998.

Secondary Sources

Aarsleff, Hans. From Locke to Saussure: essays on the study of language and intellectual history. London: 1982.

Anz, Thomas. „Psychoanalyse und literarische Moderne: Zu den Anfängen einer dramatischen Beziehung." Literaturkritik.de. Nr. 3, 2003. <http://www.literaturkritik.de/public/rezension.html.

Bahr, Hermann. “Die Überwindung des Naturalismus.” Impressionismus, Symbolismus und Jugendstil. Ed. Ulrich Karthaus. Die deutsche Literatur in Text und Darstellung 13. Stuttgart: Reclam, 1997. 119-26.

Barzun, Jacques. Darwin, Marx, Wagner: Critique of a Heritage. New York: Doubleday Anchor Books, 1958.

Beddow, Michael. “The Magic Mountain.” The Cambridge Companion to Thomas Mann, ed. Ritchie Robertson. Cambridge, UK: Cambridge UP, 2002. 137-50.

Binder, von Hartmut. Kafka Kommentar zu sämmtlichen Erzählungen. München: Winkler, 1982.

Binion, Rudolph. Frau Lou: Nietzche’s Wayward Disciple. Princeton: Princeton UP, 1968.

Bithell, Jethro, M.A. Modern German Literature: 1880-1950. London: Methuen, 1959.

Bromley, D. B. The Case-Study Method in Psychology and Related Disciplines. Chichester: John Wiley & Sons, 1986.

Brown, Harold I. Observation and Objectivity. New York: Oxford UP, 1987.

Bulhof, Ilse. The Language of Science: A Study of the Relationship between Literature and Science in the Perspective of a Hermeneutical Ontology With A Case Study of Darwin’s *The Origin of Species*. Leiden: E.J. Brill, 1992.

Cassirer, Ernst. The Philosophy of Symbolic Forms. 1955.

Cohen, Bernard. The Triumph of Numbers: How Counting Shaped Modern Life. New York: Norton, 2005.

Danius, Sara. “Novel Visions and the Crisis of Culture: Visual Technology, Modernism, and Death in The Magic Mountain.” Boundary 2, 27:2 (2000): 177-211.

„Denkende Tiere.“ Rev. of Karl Krall’s Denkende Tiere, Beiträge zur Tierseelenkunde auf Grund eigener Versuche. The American Journal of Psychology, Vol. 25, No. 1, Jan. 1914, 131-33.

Dibner, Bern. The New Rays of Professor Röntgen. Norwalk: Burndy Library, 1963.

Eagelton, Terry. Literary Theory: An Introduction (Second Edition - 1996).

Endersby, Jim. „Creative Designs? How Darwin’s *Origin* caused the Victorian crisis of faith, and other myths.“ Times Literary Supplement 16 March 2007: 2-4.

Engelhardt, Hartmut, ed. Materialen zu Rainer Maria Rilkes ‘Die Aufzeichnungen des Malte Laurids Brigge. Frankfurt am Main: Suhrkamp, 1974.

Everdell, William. The First Moderns: Profiles in the Origins of the Twentieth Century Thought. Chicago: U of Chicago P, 1997.

Ferguson, Christine. “Decadence as Scientific Fulfillment.” PMLA 117 (2002). 465-78.

Fingerhut, Karl-Heinz. Die Funktion der Tierfiguren im Werke Franz Kafkas. Offene Erzählgerüste und Figurenspiele. Bonn: Bouvier, 1969.

Flieger, Jerry Aline. “Proust, Freud, and the Art of Forgetting.” SubStance 9, 4:29 (1980): 66-82.

Giere, Ronald N. and Richard S. Westfall, eds. Foundations of Scientific Method: The Nineteenth Century. Bloomington: U of Indiana P, 1973.

Gode-von-Aesch, Alexander. Natural Science in German Romanticism. New York: AMS Press, 1966.

Gossin, Pamela, ed. Encyclopedia of Literature and Science. Westport, CT: Greenwood Press, 2002.

Greenberg, Valerie. “Literature and the Discourse of Science: The Paradigm of Thomas Mann’s The Magic Mountain.” South Atlantic Review 50 (1985): 59-73.

Habermas, Jürgen. Technik und Wissenschaft als ‚Ideologie’. Frankfurt am Main: Suhrkamp, 1968.

Harrington, Anne. “A feeling for the ‘whole’: the holistic reaction in neurology from the fin de siècle to the interwar years.” Fin de Siècle and Its Legacy. Ed. Teich, Mikuláš and Roy Porter. Cambridge: Cambridge UP, 1990. 254-77.

Hayman, Ronald. Thomas Mann: A Biography. New York: Scribner, 1995.

Heilbut, Anthony. Thomas Mann: Eros and Literature. New York: Knopf, 1996.

Heisenberg, Werner. Physics and Beyond: Encounters and Conversations. New York: Harper & Row, 1971.

Heller, Paul. Franz Kafka: Wissenschaft und Wissenschaftskritik. Tübingen: Stauffenburg-Verl., 1989.

Heydebrand, Renate von. Die Reflexionen Ulrichs in Robert Musils Roman “Der Mann ohne Eigenschaften.“ Ihr Zusammenhang mit dem zeitgenössischen Denken. Münster: Aschendorff, 1966.

Hiebert, Erwin. „The Transformation of Physics.“ Fin de Siècle and Its Legacy. Ed. Teich, Mikuláš and Roy Porter. Cambridge: Cambridge UP, 1990. 235-53.

Hoffmeister, Gerhart. Deutsche und europäische Romantik. Stuttgart: Metzler, 1978.

Holton, Gerald. Thematic Origins of Scientific Thought, rev. ed. Cambridge: Harvard UP, 1988.

Hull, David. "Charles Darwin and the Nineteenth-Century Philosophies of Science. Foundations of Scientific Method: The Nineteenth Century. Ed. Ronald N. Giere and Richard S. Westfall. Bloomington: U of Indiana P, 1973. 115-32.

Huyssen, Andreas. "Paris/Childhood: The Fragmented Body in *Rilke's Notebooks of Malte Laurids Brigge*." Modernity and the Text: Revisions of German Modernism. Eds. Andreas Huyssen and David Bathrick. New York: Columbia UP, 1989. 113-41.

Hyman, Stanley E. The Tangled Bank: Darwin, Marx, Frazer and Freud as Imaginative Writers. New York: Atheneum, 1962.

Isaacson, Walter. Einstein: His Life and Universe. New York: Simon and Schuster, 2007.

Johnston, William M. The Austrian Mind: An Intellectual and Social History, 1848-1938. Berkley: U of California P, 1972.

Jonsson, Stefan. Subject Without Nation: Robert Musil and the History of Modern Identity. Durham: Duke UP, 2000.

Jordanova, Ludmila, ed. Languages of Nature: critical essays on science and literature. London: 1986.

Kanz, Christine. Rev. of Psychoanalyse in der modernen Literatur. Kooperation und Konkurrenz, by Thomas Anz. The German Quarterly 75 (2002): 440-44.

Karl, Frederick. Franz Kafka: Representative Man. Prague, Germans, Jews, and the Crisis of Modernism. New York: Ticknor & Fields, 1991.

Karthaus, Ulrich. „Der Mann ohne Eigenschaften und Hans Castorp. Thomas Mann Jahrbuch. Bd. 14. Herausgegeben von Eckhart Heftrich, Thomas Sprecher und Ruprecht Wimmer. Frankfurt am Main: Klostermann. 9-26

Kleinbard, David. The Beginning of Terror. A Psychological Study of Rainer Maria Rilke's Life and Work. New York: New York UP, 1993.

Klieneberger, H.R. "Romanticism and Modernism in Rilke's "Die Aufzeichnungen des Malte Laurids Brigge." The Modern Language Review 74 (1979): 361-67.

Könneker, Carsten. „Raum der Zeitlosigkeit: Thomas Manns Zauberberg und die Relativitätstheorie." Thomas Mann Jahrbuch, Bd 14. Ed. Heftrich, Eckhart, et al. Frankfurt am Main:Vittorio Klostermann, 2001. 213-31.

Krasner, James. The Entangled Eye: Visual Perception and Representation of Nature in Post-Darwinian Narrative. New York: Oxford UP, 1992.

Kuna, Franz. "Rage for Verification: Kafka and Einstein." On Kafka: Semi-Centenary Perspectives. New York: Harper & Row, 1976. 83-111.

Kurz, Gerhard. „Nachwort," Kafka. Erzählungen. Stuttgart: Reclam, 1995. 343-66.

Kurz, Paul Konrad, S. J. „Literature and Science." On Modern German Literature. Volume 1. Alabama: The U of Alabama P, 1970. 56-79.

Kuzniar, Alice. "A Higher Language: Novalis on Communion with Animals." The German Quarterly. Volume 76.4. Fall 2003: 426-42.

Jackson, W. T. H. „The Beast Epic." The Literature of the Middle Ages. New York: Columbia U.P, 1960. 328-57.

Laermann, Klaus. "Wissenschaft als Beruf." Eigenschaftslosigkeit. Reflexionen zu Musils Roman "Der Mann ohne Eigenschaften." Stuttgart: Metzler, 1970. 106-25.

Le Rider, Jacques. Modernity and Crises of Identity. Culture and Society in Fin-de-Siècle Vienna. Trans. Rosemary Morris. New York: Continuum, 1993.

Levine, George. Darwin and the Novelists: Patterns of Science in Victorian Fiction. Cambridge, MS: Harvard UP, 1988.

Lock, Wilhelm. Die Aufzeichnungen des Malte Laurids Brigge. Interpretation. München: Oldenbourg, 1971.

Luft, David. Robert Musil and the Crisis of European Culture: 1880-1942. Los Angeles, CA: U of California P, 1980.

Marcuse, Ludwig. "Die deutsche Literature im Werke Freuds." The German Quarterly 29 (1956): 85-96.

Martin, Raymond and John Barresi. The Rise and Fall of Soul and Self: An Intellectual History of Personal Identity. New York: Columbia UP, 2006.

McBride, Patrizia. The Void of Ethics: Robert Musil and the Experience of Modernity. Evanston, Illinois: Northwestern UP, 2006.

Micale, Mark. Introduction. The Mind of Modernism: Medicine, Psychology, and the Cultural Arts in Europe and America, 1880-1940. Ed. Mark S. Micale. Stanford: Stanford, UP 2004. 1-19.

Miller, Arthur. Einstein, Picasso: Space, Time, and the Beauty That Causes Havoc. New York: Basic Books, 2001

Münchow, Ursula. Deutscher Naturalismus. Berlin: Akademie Verlag, 1968.

Nisbet, H.B. Goethe and the Scientific Tradition. London: Institute of Germanic Studies, U of London, 1972.

Nitske, Robert. The Life of Wilhelm Conrad Röntgen, Discoverer of the X Ray. Tuscon: The U of Arizona P, 1971.

Norris, Margot. Beasts of the Modern Imagination: Darwin, Nietzsche, Kafka, Ernst, & Lawrence. Baltimore: The John Hopkins UP, 1985.

Olby, R.C., G.N. Cantor, J.R.R. Christie, and M.J.S. Hodge, eds. Companion to the History of Modern Science. London: Routledge, 1990.

Oppenheimer, Paul. "Rilke, Einstein, Freud and the Orpheus Mystery. Rilke und die Moderne. Ed. Stevens, Adrian and Fred Wagner. München: Indicium, 2000. 49-57.

Parker, Sybil, ed. McGraw-Hill Concise Encyclopedia of Science and Technology. 3rd ed. New York: McGraw-Hill, Inc., 1994.

Pascal, Roy. From Naturalism to Expressionism German Literature and Society: 1880-1918. London: Weidenfeld & Nicolson, 1973.

Patey, Douglas Lane. "Swift's Satire on "Science" and the Structure of Gullivers' Travels." ELH, Vol. 58, No. 4, Winter 1991, 809-39.

Peterfreund, Stuart. Literature and Science: Theory and Practice. Boston: Northeastern UP,1990.

Politzer, Heinz. Parable and Paradox. Ithaca, NY: Cornell UP, 1966.

Prater, Donald. Thomas Mann: A Life. New York: Oxford UP, 1995.

Prusok, Rudi. "Science in Mann's Zauberberg." PMLA 88 (1973). 52-61.

- - - . "The Use of Science and Technology in the Novels of Thomas Mann." DA 28 (1967-68): 2691A.

Reed, T. J. Thomas Mann: The Uses of Tradition. New York: Oxford UP, 1974.

Richter, Karl, Jörg Schönert, Michael Titzmann, eds. Die Literatur und die Wissenschaften, 1770-1930. Stuttgart: M & P Verglag für Wissenschaft und Forschung, 1997.

Ryan, Judith. Rilke, Modernism and Poetic Tradition. Cambridge, UK: Cambridge UP, 1999.

- - - . "Kafka's Narrative Breakthrough. "A New History of German Literature. Ed. D. E. Wellbery. Cambridge, MA: The Belknap Press of Harvard UP, 2004). 693-98.

- - - . "'Hypothetisches Erzählen': Zur Funktion von Phantasie und Einbildung in Rilke's *Malte Laurids Brigge*." Hartmut Engelhardt 244-79.

Saalmann, Dieter. Rainer Maria Rilkes "Die Aufzeichnungen des Malte Laurids Brigge. Ein Würfelwurf nach dem Absoluten: Poetologische Aspekte. Bonn: Bouvier, 1975.

Saussure, Ferdinand de. Writings in General Linguistics. New York: Oxford UP, 2006.

Shapere, Dudley. "The Concept of Observation in Science and Philosophy." Philosophy of Science (1982). 28-59.

Schatzberg, Walter, et al., eds. The Relations of Literature and Science: An Annotated Bibliography 1880-1980. New York: The Modern Languages Association of America, 1987.

Schorske, Carl. Fin-de-Siècle Vienna: Politics and Culture. New York: Vintage Books, 1981.

Sebastian, Thomas. The Intersection of Science and Literature in Musil's *The Man Without Qualities*. Rochester, NY: Camden House, 2005.

Seifert, Walter. Das Epische Werk Rainer Maria Rilkes. Bonn: Bouvier, 1969.

Shanks, Niall. Animals and Science: A Guide to the Debates. Santa Barbara, CA: ABC Clio, 2002.

Shaw, Priscilla W. Rilke, Valéry and Yeats. The Domain of the Self. New Brunswick: Rutgers UP, 1964.

Shlain, Leonard. Art and Physics: Parallel Visions in Space, Time and Light. New York: William Morrow and Co, 1991.

Slade, Joseph W. and Judith Yaross Lee, eds. Beyond the Two Cultures: Essays on Science, Technology, and Literature. Ames, IA: Iowa State UP, 1990.

Small, William. Rilke-Kommentar zu den Aufzeichnungen des Malte Laurids Brigge. Chapel Hill: U of North Caroline P, 1983.

Smith, Peter D. Metaphor and Materiality: German Literature and the World-View of Science. Oxford: Legenda, 2000.

Smolin, Lee. „The Beauty Myth.“ The Trouble with Physics. Boston: Houghton Mifflin Company, 2006. 18-37

Soergel, Albert and Curt Hohoff. Dichtung und Dichter der Zeit: vom Naturalismus bis zur Gegenwart. V. 1. Düsseldorf: August Bagel, 1964.

Sokel, Walter. “The Devolution of the Self in *The Notebooks of Malte Laurids Brigge*.” Rilke: The Alchemy of Alienation. Ed. Baron, Frank, Ernst S. Dick, and Warren R. Mauer. Lawrence: The Regents P of Kansas, 1980. 171-90.

Stine, Peter. “Kafka and Animals,” Contemporary Literature, Vol. 22, No. 1 (Winter, 1981), 58-80.

Teich, Mikulàš and Roy Porter, eds. Fin de Siècle and Its Legacy. Cambridge: Cambridge UP, 1990.

Thiher, Allen. Fiction Refracts Science. Columbia: U of Missouri P, 2005.

Toews, John E. "Refashioning the Masculine Subject in Early Modernism: Narratives of Self-Dissolution and Self-Construction in Psychoanalysis and Literature, 1900-1914." In The Mind of Modernism. Ed. Mark S. Micale, Stanford: Standford UP, 2004. 298-335.

Van Abbe, Derek Maurice. Image of A People: The Germans and Their Creative Writing Under and Since Bismarck. New York: Barnes & Noble, 1964.

Wagner-Egelhaaf, Martina. Mystik der Moderne. Die visionäre Ästhetik der deutschen Literatur im 20. Jahrhundert. Stuttgart: Metzler, 1989.

Weigand, Hermann. The Magic Mountain: A Study of Thomas Mann's Novel *Der Zauberberg*. Chapel Hill: U of North Carolina P, 1965.

Wilson, David L., and Zack Bowen. Science and Literature: Bridging the Two Cultures. Gainesville: UP of Florida, 2001.

Wilson, Edward, ed. From So Simple A Beginning: The Four Great Books of Charles Darwin New York: Norton, 2006.

Young, Robert. Darwin's Metaphor: Nature's Place in Victorian Culture. Cambridge: Cambridge UP, 1985.