A SECOND ROUTE TO TRUTH: FEATURE-PLACING, EXISTENCE AND THE INTERPRETATION OF *THERE*-SENTENCES

by

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Abstract

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The existential *there*-sentence has an unusual form and grammatical properties, such as an expletive subject, agreement with the post-verbal noun phrase, definiteness effects and the predicate restriction. These properties are argued to stem from the sentence's logical form, which diverges from function-argument structure. The hypothesis pursued here is that in a *there*-sentence, feature-placing, a term originally coined by Strawson (1959), not predication, is the mechanism that forms a truth-bearing unit. Feature-placing is formalized as the satisfying of a characteristic function at a location. The construction's notable properties are shown to stem from its feature-placing form. Notably, its locative content, expletive subject, the definiteness effects and the predicate restriction all receive a holistic explanation on the feature-placing account. The logical form and truth conditions of the feature-placing sentence, which include neither existential quantification nor an existential predicate, are non-objectual: They contain no individual or individual variable. Nonetheless, an existential assertion results, and its truth

conditions are shown to be an equivalent translation of their standard objectual counterparts.

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Part One: Feature-placing, existence, and the interpretation of *there*-sentences

Introduction

Sentences like *there is a cat on the mat* and *there is a Zeus* are unusual in a number of ways. Unlike other sentences whose meaning involves existence, such as, for example, sentences containing referential definite descriptions like *the president of the Audubon Society*, existential sentences do not presuppose the existence of an individual—they assert it. Indeed, expressions that carry existence presuppositions are prohibited from the postverbal position of existential sentences of the *there*-form. *There*-sentences are also peculiar in their syntactic and semantic form: the expression in syntactic subject position, an expletive, *there*, does not seem to be a subject in the usual sense. It does not determine agreement on the finite verb; it is also not the item about which the rest of the sentence predicates some property.

This last characteristic of *there*-sentences separates them from another kind of sentence that might also be called existential. A sentence like *John exists*, for example, *does* appear to predicate the property existence of some individual, John, and appears to be subject-predicate in form. But then what about the sentence *John does not exist*? Does it mean that John has the property of not-existing? And what then of *Pegasus does not exist*? Is it predicating not-existence of a non-existent?

At least since Kant, philosophers and logicians have recognized the unique contribution of existential sentences and have debated whether they should be represented as "normal" predications or deserve some other form. This research belongs to the latter tradition, the chief claim being that the alternative form of the existential explains its most fundamental characteristics—the restrictions on the kinds of constituents it may contain, the expression of existence, the primacy of place or location, and the absence of an ordinary subject or subject-predicate relationship.

The thesis developed here argues that there is a second way of arriving at a truth-bearing unit in natural language—that is, in addition to predication. I call this route *satisfying*. Satisfying, unlike predication, does not involve the combination of two elements via the saturation of a predicate. It requires the successful satisfying of a characteristic function of a set at a location.

In order to clarify the motivation behind this proposal, which challenges the view that every truth-bearing unit in natural language participates in function-argument structure, let me begin with data that I believe shows convincingly that *there*-sentences make a different contribution than their related copular counterparts—which are, presumably, of function-argument form. I will discuss them in more detail in the second part of the thesis, but for now notice that contrary to what would be expected from the traditional transformational analysis of *there*-insertion, the following sentences are not all possible variants of one another:

1. There is a cat on the mat.
2. A cat is on the mat.
3. There is wisdom in what you say.
4. #Wisdom is in what you say
5. There is space in the closet.
6. #Space is in the closet.
7. There are flaws in the argument.
8. #Flaws are in the argument.

The examples above in 3-8show that there are certain expressions, like *flaws*, *wisdom* and *space*, which stand perfectly well in the postverbal postion of a *there*-sentence but are infelicitous as subjects of the related copular sentence. Why should this be? Although such examples have been discussed in the literature in various contexts (cf. Chomsky, 1981; Higginbotham, 1981; Milsark, 1974), I believe it has not been fully appreciated what the behavior of these expressions in the *there*-insertion context tells us about the interpretation of the associate NP and the relationship between the associate noun phrase and the coda prepositional phrase in the *there*-sentence. As the analysis unfolds, the relevance of these examples to the analysis of *there*-sentences as feature-placing, and not subject-predicate sentences will become clear.

There-sentences: a subset of existential sentences

The sentences that I will be analyzing are a subset of the sentences that might be called ‘existential sentences’. An obvious feature of the sentences I focus on is that they begin

with the word *there*, an expletive homophonic with the deictic adverbial. I will therefore call these sentences existential *there*-sentences, or *there*-sentences for short. Some examples of this sentence type are given below:

9. There is a god.
10. There is a cat on the windowsill.
11. There exist blue-winged warblers.
12. There stands in the garden a statue of Venus[1].

Nomenclature

In a sentence such as *there is a cat in the kitchen*, I will call *there* an expletive, *is* either BE or V, *a cat* either the associate NP or the postverbal NP and *in the kitchen* the coda, as seen below:

13. There$_{\textbf{expletive}}$ is$_{\textbf{BE or V}}$ a cat$_{\textbf{associate NP or postverbal NP}}$ in the kitchen$_{\textbf{coda}}$.

Other 'existential' sentences

The following sentences, although they may be existential in various ways, are not the focus of the current work:

[1] Notice that I suggest that *there*-sentences with BE as well as *there*-sentences with other verbs as a single class. These sentences are not usually analyzed together. They are generally seen as instances of different constructions, with the last two being examples of the presentational-*there* construction. In this thesis I will concentrate primarily on *there*-BE sentences, but hope to develop a unified analysis encompassing both the existential and presentational sentences in future research. For now, notice the locative content of the verb stands; in what follows the relevance of this fact to an analysis that unifies the two constructions will become clearer.

14. John exists. (*exist*-sentence)

15. John is. (BE of existence)

16. A man is in the garden. (copular sentence)

Importantly, I am not extending my analysis to all existential sentences, only this particular variety, the *there*-sentence.

Some well-known grammatical properties of *there*-sentences

Expletive subject

An expletive, pronounced *there* in (standard) English, differently in other languages, stands in syntactic subject position. In many languages the expletive is related to a locative form (cf. Clark, 1978; Freeze, 1992).

17. <u>There</u> is a man in the garden.

18. <u>They</u> is something bad wrong with her. (Appalachian English[2])
    'There is something bad wrong with her.'

19. <u>Es</u> gibt eine Katze auf dem Baum. (German)
    It gives a cat on the tree.
    'There is a cat on the tree.'

20. <u>Es</u> war ein Geist im Schloss.
    It was a ghost in the castle.
    'There was a ghost in the castle.'

21. <u>Il</u> <u>y</u> a un chat dans la voiture. (French)

[2] Cited in Tortora (2006) following Montgomery & Hall (2004).

He LOC have a cat in the car.

'There is a cat in the car.'

22. Ci sono gatti nell'auto. (Italian)
    LOC are cats in the car.
    'There are cats in the car.'

Definiteness effects

Proper names, pronouns, and certain (so-called strong) quantifiers are disallowed from the post-verbal position in *there*-sentences. These are the so-called *definiteness effects* associated with the construction[3].

23. *There is John in the garden.
24. *There is you in the garden.
25. *There are most men in the garden.
26. *There is the dog in the garden.

[3] There are situations where the definiteness effects seem to be lifted. For example:

i. A: What is there for breakfast?
   B: There's the pizza from last night.

ii. A: Who can we get to cat-sit while we're away?
    B: There's always Joe.

These are examples of what has been called the *list-existential* (cf. Rando & Napoli, 1978; Gregory Ward & Birner, 1995). I believe, and it is generally agreed, that while these sentences require further explanation (many have been explored), they are not counterexamples to the existence of definiteness effects as seen above. I discuss the list-existential in Part II of the thesis.

The predicate restriction

While the coda position may be empty (e.g. *There is a god*), there are restrictions on what kind of expressions may occur there (cf. Milsark, 1974). These restrictions have also been associated with the stage-level / individual-level distinction (cf. Gennaro Chierchia, 1995; Kratzer, 1995). By far the most common coda expressions, however, are locative prepositional phrases.

27. *There is a man tall.
28. There is a man sick.
29. There is a man in the garden.

Verbs

There are also restrictions on what verbs are allowed in a *there*-sentence. Although by far the most common verb in a *there*-existential is BE, other verbs are allowed, such as *arrive* or *stand*. Likewise, other verbs are disallowed, such as (virtually all) transitive verbs, like *hit*. Levin (1993, pp. 88-94) provides a list of the verb classes that are allowed in the *there*-existential in English.

30. There is a cat on the mat.
31. There arrived three men.
32. *There hit a boy a girl.

Non-canonical word order

Unlike other sentences in English, the verb in the *there*-sentence agrees with the noun phrase following the verb, and not the expletive in subject position[4].

33. There *is/are men in the garden.

Roadmap

An important goal of this research is to provide an explanation of these grammatical properties that is related to the semantic contribution of the *there*-sentence. In the following sections I will begin by looking at the significance of the expletive in subject position, and with a general discussion of the subject-predicate form, or function-argument structure. I then move on to introduce another form, the feature-placing form, and relate this alternative form to the structure and interpretation of *there*-sentences. Next, I move to the connection between location and existence, and here the locative content of the *there*-sentence is examined, along with an account of the predicate restriction, which I argue is related to the construction's requirement for locative content. Finally, the discussion moves to the representation of the existential import of the *there*-sentence and the interpretation of the post-verbal noun phrase.

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[4] More needs to be said here, however, as agreement is not always accomplished in *there*-sentences:

iii. %There's several reasons to doubt his sincerity.

This phenomenon will be discussed briefly in an upcoming section.

There-sentences and the subject-predicate form

On the terms 'subject', 'predicate', 'subject-predicate'

An account of existential sentences must address the significance of the expletive *there* in syntactic subject position. Does this fact indicate something special is going on with the expression in subject position in the *there*-sentence, or can it be made to fit into a standard, subject-predicate configuration? And, if something special is going on, what is it, exactly? By and large, researchers have insisted that the analysis of the *there*-existential can proceed like that of any other sentence—so long as you are willing to do some extra work. This research will ultimately reject this idea, and the idea that the *there*-sentence is subject-predicate in form. To understand what this position entails, I must first explain what I mean—and do not mean—by the terms 'subject', 'predicate' and 'subject-predicate sentence', as these notions will each play an important role in what follows.

First, it is necessary to tease apart a number of uses of the term 'subject'. In layman's terms, 'subject' is often used in the sense of topic, to refer to 'what the sentence is about'. The term subject is also used to refer to the expression in a certain syntactic position in the sentence, say, the expression in the specifier of IP or TP. Thus there is a notion of syntactic subject. The term subject may also be used in a semantic or logical sense to designate one participant in the relationship of predication, the (external) argument of syntacticians. Finally, among philosophers of language, the term subject can have the

special meaning ‘individual-referring term’. It is in this sense that Russell (1905) denies that definite descriptions are capable of being subjects: they are quantificational, not referential.

In this thesis I will attempt to replace the notion of subject and predicate with that of argument and function, following Frege (1879). He says: "In particular, I believe that the replacement of the concepts subject and predicate by argument and function, respectively, will stand the test of time." In Fregean terms, then, what is commonly called ‘subject’ is an argument of the function denoted by what is commonly called the ‘predicate’. Frege’s (1879) formulation of the subject-predicate distinction as function argument structure accounts for the unity of the proposition and the asymmetry between subject and predicate, ensuring that that while subjects may pick out individuals, predicates never do: they always pick out functions (or sets). In that sense, ‘predicate’ is a term that can, in fact *must*, be defined in relation to the term subject: it is the other necessary part of a subject-predicate proposition. What in traditional grammar is termed a subject-predicate sentence, then, corresponds to a two-term function-argument structure where the argument saturates the predicate, yielding a complete proposition that may be judged true or false. I will attempt in what follows to refer to expressions not as subjects and predicates, but as ‘arguments’ and ‘functions’, in an attempt to avoid confusion with the many other notions of subject and predicate in circulation.

Are *there*-sentences *subjectless*?

The fact that the *there*-sentence has an expletive in syntactic subject position has led many to propose that it is subjectless. What does this term mean, exactly? Let’s look at

the facts about the expressions argued to be the subject, in various senses, of the *there*-sentence and then examine some prevalent accounts of them. Syntactically speaking, the expletive *there* is in subject position at the end of the overt syntactic derivation as is required of a non-pro-drop language like English. *There* is, therefore, the syntactic subject by the end of the derivation. The more interesting question from a syntactic point of view is whether *there* originates in the same place as other subjects, say in the specifier of VP or the specifier of a small clause structure, or moves to subject position from elsewhere and through some other process, such as predicate inversion (as has been claimed by Moro, 1997). Also interesting from a syntactic point of view is whether or not *there* is replaced at logical form (LF) by the associate NP (Chomsky, 1986, 1993, 1995). Unlike the expletive *there*, the associate NP is an expression that carries the features necessary to accomplish subject-verb agreement. Such questions, however, lead directly to a question that is not strictly syntactic but lies at the interface between syntax and semantics: In what sense does the expletive, the associate, or some amalgamation of the two, enter into a predication relationship with another constituent of the existential sentence? The question is instructive: It is immediately clear that in a predication relationship you cannot have an argument without a function and vice versa. Indeed, authors have proposed a variety of different combinatorial possibilities to map the expressions that constitute the *there*-sentence onto a predicational structure, and have at the same time claimed it to be subjectless in various senses of the term.

Some take the expression in subject position to also be the semantic, or logical, subject. Williams (1996), for example, claims that *there* is a subject in both the semantic and

syntactic sense of the term and the associate NP is a predicate—that is, *there* is the argument of the function denoted by the associate NP. Moro (1997) argues that *there* is the predicate of a small clause and the associate NP is its subject, with the expletive predicate later in the derivation moving to sentential subject position via the operation of *predicate inversion*. McNally (1998a) and van Geenhoven (1998) take *there-be* to be a second-order predicate, or function, whose argument is the associate NP, which they analyze as a property. And, as noted above, Chomsky has claimed that the expletive *there* is truly vacuous: He argues that the associate NP is the semantic subject, the argument of the function denoted by the coda. It moves, replacing the expletive *there* at LF (Chomsky, 1986, et alia). This is the traditional view, expressed in the *there*-insertion analysis. Under that view the associate originates as the syntactic subject of a small clause of which the coda is the predicate.

The above résumé of approaches illustrates that there is by no means agreement on the basic issue of which constituent is the logical subject of an existential *there*-sentence, nor even on how the expletive comes to occupy syntactic subject position or for how long it does so. Also, none of the approaches discussed above claims that the existential *there*-sentence is subjectless in the logical sense, that function-argument structure is not instantiated in that sentence type. That is, all the approaches mentioned so far take the existential to instantiate the subject-predicate, or function-argument, relation at some level of representation, whether or not they take *there* to be vacuous. I think there are reasons to believe, with Chomsky and others, that the expletive does not have semantic content, in spite of its being in syntactic subject position, though I do not therefore take

the associate to be argument of any function. *There* is also not an argument of any function on my view. As for the view that the expletive does have content, then why is the related copular sentence truth-conditionally equivalent? Furthermore, if it isn't vacuous, and has, as has been suggested, locative content, why is it impossible to ask a question that targets the expletive? For example:

34. A: Where is a cat in the garden?

    B: #There is a cat in the garden.

In addition, *there* does not trigger agreement, and although this does not mean it has no content it suggests minimally that it does not have the content of other arguments, and in dialects of American English such as Appalachian or African American, other expletives surface, but the locative content of the construction remains (e.g. *They is something bad wrong with her* (Montgomery & Hall, 2004), *It ain't nothing you can do* (Green, 2002). For these and other reasons that will be discussed below, I take the expletive to be vacuous, and not to participate in a function-argument structure but do not therefore suggest that another constituent in the sentence plays the role of argument. That is, this thesis makes the claim that the existential *there*-sentence is subjectless in the logical sense, and that it therefore also has no predicate, or function, that takes another constituent as an argument. Before moving to my account of the *there*-sentence, however, I will examine some approaches to "unusual" sentence forms (such as the *there*-sentence) from the literature, most notably the literature on thetic and categorical judgments (cf.

Brentano, 1874; Fintel, 1989; Kuno, 1972; Kuroda, 1972; Ladusaw, 1994; Marty, 1908; McNally, 1998b).

Are *there*-sentences *thetic*?

In his Critique of Pure Reason (1878), Kant recognized that the contribution of the existential sentence was different from that of ordinary predications. In his discussion of the ontological argument, the argument for the existence of god, he made the widely influential claim that "existence is not a genuine predicate". According to Martin (2006, pp. 42-53), he also suggested that the nature of the difference between existential sentences and normal predications has to do with the fact that while predication is a synthesis, or combination, the existential sentences is not: It is more, he says, a *thesis* than a synthesis. That is, it is not a combination of two parts, but a *positing* of a single entity, which nonetheless results in a complete assertion.

About a generation after Kant, logicians such as Franz Brentano began to formalize a logic that would accommodate what they would call the thetic, or singular, judgment. Brentano, although he took judgments to be psychological entities and not purely logical ones, contributed a logic that included the thetic judgment. According to Brentano, the thetic judgment, which contrasts with the categorical judgment, is simpler than the categorical judgment in that it does not involve the "recognition"—a consciously psychological term—of a subject, only the acceptance or rejection of the whole statement, or *material*. The logical form of an existential sentence was, in Brentano's logic, "A+" or "A-", meaning roughly "A is" or "A is not", where *is* is the BE of existence and means *exists*. Brentano's student Anton Marty explicitly translates

Brentano's ideas about cognitive acts or judgments into a grammatical arena. From the standpoint of Brentano and Marty, as paraphrased in von Fintel (1989), the thetic sentence is not subject-predicate in form, and does not predicate anything of any other thing. Indeed, "Brentano and Marty argued that Western logic is only adequate for categorical judgments which have the subject-predicate structure…thetic judgments do not have the usual articulation into subject and predicate" (Fintel, 1989, p. 85).

Following work by Brentano (1874) and Marty (1908), Kuno (1972), Kuroda (1972), von Fintel (1989), McNally (1998b) and Ladusaw (1994), among others, have argued that the existential there-sentence has this special form, the thetic form, and that this fact accounts for a variety of its unusual properties. However, among the large number of researchers that have adopted or adapted the thetic-categorical distinction in the linguistic literature, I know of none that have taken seriously Brentano and Marty's most fundamental—and most radical—claim: that the thetic sentence is not subject-predicate in form. After the description of the Brentano-Marty thetic-categorical distinction cited above, for example, von Fintel goes on to conclude: "In this light, restrictions on the predicate in thetic constructions will be investigated, establishing that they only allow predicates that have internal subjects" (Fintel, 1989, p. 86). Similarly, Kuroda (1972), in his influential paper on the thetic and categorical judgment in Japanese, simultaneously claims that thetic sentences are logically subjectless and that the item in subject position is semantically interpreted in that position. Kuroda spends a great deal of time discussing the terms subject and predicate, their use in various eras and spheres, the psychological, syntactic and logical, and their relevance to the thetic and categorical distinction, explaining why

the terms theme-rheme, topic-comment, focus- presupposition and given-new are not being brought into the discussion. Despite this, an abundant terminology persists (the specific-generic, referential-non-referential and definite-indefinite distinctions are all necessary to his classification) as well as some confusion: What exactly is the nature of judgment on this theory? Is it to be taken as a psychological or logical-semantic form? In practice, the terms thetic sentence and thetic judgment are used interchangeably, both to talk about the structure of sentences and the "attitudes" of speakers using them. Perhaps on this account, Kuroda ultimately makes a somewhat awkward claim about the thetic sentence: It is subjectless in the logical sense; it nonetheless has a semantically contentful syntactic subject. One must conjecture about the relation between the two representations.

Unlike Kuroda, however, most authors *do* explicity argue that the thetic sentence has a logical subject, even if it is argued to participate in a different variety of predication than it would in the categorical sentence. Thus, as mentioned above, there is no extant formalization of the most important part of the Brentano/Marty claim about thetic sentences: that they are singular, and not subject-predicate in form. In this light, the thetic-categorical distinction thus provides a framework to distinguish thetic sentences from "plain" declaratives while still incorporating them into a standard predicate-argument structure account. Some argue that the thetic-categorical distinction corresponds to the difference between sentences whose Logical Form (LF) contains a restrictive clause and a nuclear scope, and those whose LF contains only a nuclear scope (Fintel, 1989). That is, according to von Fintel (1989), the thetic sentence is syntactically

smaller than the categorical sentence and this has interpretational consequences given the mapping he assumes between syntax and semantics (essentially that of Diesing, 1992). Others see the thetic form as *sortally* different from the categorical form of ordinary subject-predicate sentences (Ladusaw, 1994; McNally, 1998b): The thetic sentence allows predicates that can take descriptions of individuals as arguments, whereas categorical sentences do not (see Ladusaw, 1994 for further clarification). This view is further elaborated in Chung & Ladusaw (2004), where, in addition to the operation *saturate*, which saturates the predicate in a normal subject-predicate sentence and triggers function application, the operation *restrict* may apply to predicates taking a property-denoting NP argument (as is the case in a thetic sentence, according to Chung & Ladusaw). Restrict, unlike saturate, does not trigger functional application. Instead, it allows the structure to remain unsaturated—until existential closure applies at the event level, saturating any open positions. At that point functional application applies to yield a "complete" sentence in the Fregean sense.

The idea that there are sentences that do not participate in function-argument structure and which are, in a sense to be made precise, less complex, is similar to the claim I will make here about the *there*-sentence. Lyons (1975) also accords the *there*-sentence a more basic status than sentences of other types. He says that the function of the existential sentence could be described as "quasi-referential" or "quasi-predicative"; functions that he says are "perhaps ontogenetically more basic than either reference or predication" (1975, p. 65). I wish, however, to differentiate the current research from the literature on thetic and categorical sentences on a number of accounts. First, existential *there*-

sentences are only a small subset of the sentences that have been argued to be thetic (which include universal sentences like *All unicorns have one horn* as well as sentences like *God exists*). Secondly, and as mentioned above, unlike extant formalizations of the Brentano/Marty theory in the literature, my claim is that the existential *there*-sentence does not involve predication or yield a saturated sentence in the Fregean sense. They have an altogether different form, whose mechanism relies on *satisfyings*, not saturation. Therefore, although I take the original Brentano/Marty distinction between thetic and categorical sentences to be a precursor to many of the ideas that I will be exploring in this research, I will not use this terminology. I will nonetheless pursue Brentano and Marty's more radical claim about sentences that involve neither functions nor arguments but are nonetheless complete, truth-bearing units.

The *there*-sentence is not subject-predicate in form

In this research I pursue the idea that the *there*-sentence is subjectless precisely because it is not translated by a function-argument structure: in the *there*-sentence, no two constituents instantiate a function-argument structure. The existential *there*-sentence, on this view, exemplifies an alternative sentence form, and an alternative route (besides predication) to truth: that of feature-placing. The following sections provide a background against which I will develop this approach.

There-sentences and the feature-placing form

Strawson (1959): Feature-placing

Strawson (1959) coined the term *feature-placing* in the context of an exploration of the idea that there are sentences whose contribution to the discourse is simpler than that of ordinary subject-predicate sentences. Unlike a subject-predicate sentence, says Strawson, a feature-placing sentence does not predicate a property of an individual. It merely makes possible the introduction of a particular into the discourse. A *feature*, or *feature-concept*, according to Strawson, is not an expression that refers to or quantifies over individuals. (It is also not, Strawson claims, a sortal or characterizing universal.) A *placer* is an expression that locates these features. One example of a feature-placing sentence in our language, says Strawson, is *there is gold here*, a *there*-sentence.

It is from the starting point of this connection—between the idea of feature-placing and the suggestion that *there*-sentences are an instance of this type—that I begin my research. Taking Strawson's suggestion seriously, it is no coincidence that the broad characterization he provides of features and placers matches up nicely with what we know about the grammatical properties of *there*-sentences: We know, for example, that *there*-sentences exhibit definiteness effects and cannot contain referential expressions in the associate NP position. The expressions that can stand in that position, indefinites and weak quantificational NPs[5], are well described by the term *feature*, in a way that will

[5] (cf. Edward L. Keenan, 2003; Edward L. Keenan & Stavi, 1986; Milsark, 1974) for a discussion of the weak-strong distinction. One version says that if a quantifier is symmetric/intersective it is weak, and if not, it is strong.

become more precise below and in Part II of this thesis, which is devoted to the associate NP. Similarly, the expressions that are possible in coda position are by and large locative prepositional phrases, aptly described by the term *placer*.

Strawson's characterization of feature-placing also corresponds nicely to the contribution of *there*-sentences to the discourse: generally, *there*-sentences are used to introduce something new—to draw attention to something new to the discourse or to make someone become aware of the existence of an object of a particular kind. There are, of course, many ways in which we become aware of the existence of an object. One simple way is via demonstrative identification: via the use of sentences like *that is a bee*, *this is a flower*, etc., with ostension (pointing). Strawson and later Lyons (1967; Lyons, 1975) argue that in fact demonstrative identification of particulars underlies non-demonstrative identification of particulars, such as that which occurs in *there*-sentences. On Strawson's view, this is because we possess a conceptual scheme that has as its organizing principle the spatiotemporal location of particulars relative to us[6]. This conceptual structure,

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[6] Of course, many authors besides Strawson have observed the relationship between location and existence in terms of the way we conceive of the objects world around us. Common sense says that if something exists, it can be found *somewhere*. This connection is discussed as far back as Plato and Aristotle, and in more contemporary times Lyons. Some illustrative passages:

> We look at it as in a dream and say that it is necessary that everything that is is somewhere in some place and occupying a space, but what is neither on earth nor somewhere in heaven is nothing. (Plato & Cornford, 2000)

> For everyone supposes that things that are are somewhere, because what is not is nowhere—where for instance is a goat-stag or a sphinx? (Aristotle, Bostock, & Waterfield, 1999)

according to Strawson, holds equally for things we can locate spatiotemporally and those things that we cannot (such as abstract objects), by extrapolation from the simplest cases—again, those of demonstrative identification. By further extension, this spatiotemporal framework underlies the *language* we use to talk about entities, to indicate their existence to introduce them into the discourse. On this view, an instance of this conceptual scheme in natural language is the *there*-sentence.

The introduction of particulars and existence

The introduction of particulars and the assertion of existence have mostly been regarded as separate phenomena. The *there*-sentence shows, however, that from the point of view of natural language these two concepts overlap, and as I argue here, *there*-sentences have a different form than an ordinary predication. The similarity, from a conceptual point of view, between the introduction of entities into the discourse and becoming aware of the existence of objects is already observed in Strawson (1959). As discussed in the previous section, he argued that our underlying conceptual scheme for objects is that of spatiotemporal location relative to us. If we take this on board, the fact that *there*-sentences have locative content and are used to assert existence or introduce objects into

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> If something has a spatiotemporal location, it must exist; and it is arguable that any notion of 'existence' that we can operate with is based upon our intuitive understanding of physical existence as spatiotemporal location. (Lyons, 1975, p. 79)

This intuitive understanding about the way we organize our thoughts about objects, namely by relating them to spatiotemporal locations is, according to many, foundational to the way we conceive of the world. As discussed above, Strawson and Lyons take this further and claim that in addition to being foundational to our conceptual scheme, the connection between location and existence plays a role in natural language.

the discourse finds an explanation: Becoming aware of the existence of an entity and an entity's introduction into the discourse are both accomplished by specifying a location.

Feature-placing vs. predication

Strawson also argued that the introduction of particulars constitutes a more basic function than predication, and that the sentences that we use to do this, feature-placing sentences like *there is snow here*, are simpler than normal subject-predicate sentences. Whereas predication requires for truth both the identification of an entity and the verification of a property predicated of it, the introduction of particulars requires for truth a means of verifying an entity's location. In the sense that a subject-predicate sentence requires both the identification of a particular and the verification of a property holding of it, and the feature-placing sentence requires only the verification of the location of an entity that has certain features, the feature-placing sentence is simpler, or more basic than the subject-predicate sentence.

Semantic foundationalism and basic statements

It is necessary to contextualize the discussion of feature-placing sentences as "basic" within the larger literature of so-called basic sentences. The position that all sentences can be reduced to a basic form that is logically prior to other kinds of statements is called *semantic foundationalism* and is related, often, to phenomenology and logical positivism—which holds, among other things, that sense data provide a foundation of other, higher forms of knowledge. Thus, sense data and sensible properties, on this view, provide a foundation for more abstract modes of thought, which themselves can be ultimately reduced to, or shown to be equivalent in meaning to some group of

observational sentences. It seems that Strawson, whether or not he explicitly endorses the view of semantic foundationalism, is making a similar claim about feature-placing—that it is logically prior to other sentences and ultimately derivable from demonstration.

Elaborating on Strawson's original idea of feature-placing, I suggest the feature-placing sentence is made true by different means than a sentence having a function-argument structure and whose statement whose truth, in the simplest cases, depends on the denotation of the argument expression being a member of the denotation of the function expression. In a feature-placing sentence, in place of predication there is a *satisfying*. A locative element, a placer, and a nominal element, a feature, combine and yield a truth-bearing unit if and only the characteristic function denoted by the associate is satisfied at the location denoted by the placer. That is, the truth conditions of a statement of the form feature-placer require that something satisfying the features denoted by the associate NP[7] exist (or be found) at the location (or coordinates) denoted by the placer. In an existential sentence like *there is a man in the garden*, I take the associate NP, *a man*, to be the feature and the coda, *in the garden*, to be the placer. Note that although the coda is sometimes (syntactically) unrealized in an existential sentence, I believe that there is nonetheless always locative content in a feature-placing sentence. The source of the locative content in a coda-less existential will be explained further on in the chapter. The resulting picture of the existential *there*-sentence outlined previously in 13 can now be superimposed to that in 35 to show the structure of the feature-placing sentence:

[7] I formalize the idea of 'having features' by assigning the associate NP the denotation of the characteristic function of a set, for reasons that are explained further detail in upcoming sections.

35. There$_{\text{expletive}}$ is a man$_{\text{feature/associate NP}}$ in the garden$_{\text{placer/coda}}$

The ways in which a feature-placing sentence is unlike a sentence having a function-argument structure will become clearer as the interpretation of each constituent is defined. Suffice it to say for the time being that the feature is not the argument or function of the placer, and vice versa.

Location and existence in grammar

Certain grammars accord basic status to location, putting it on a par with entities and properties in their ontology. The 13th century Indian *Navya-Nyaya Logic* is one example, and so are *Localism* (Anderson, 1971), and more recently, Partee and Borschev's *Perspectival Structure* (B. Partee & Borschev, 2007). Beyond the recognition of location as a fundamental part of the grammar of natural language, several authors have to various degrees formalized the connection between location and existence. Let us look at one that is illuminating from the point of view of the present feature-placing analysis.

The language games of *seeking* and *finding*

In *Language Games for Quantifiers* (1968), for example, Hintikka explores the idea that the meaning of the existential quantifier, which is the translation he assigns to the natural language expression *there-is*, is bound up with the language games of *seeking* and *finding*. In order for a sentence containing *there-is* to be true, according to Hintikka, an item satisfying the requirements of a search procedure must be *located*. In its incorporation of the spatial into the truth conditions of the existential sentence, Hintikka's (1968) analysis is similar to Strawson's feature-placing and significant to the present

formalization of those ideas. Hintikka (1968) discusses the use of quantificational expressions among which he includes *there is*: Although quantificational expressions have been studied from the point of view of logic, he says, there is much more to be said about their use in language. Hintikka gets at the use (which is from his point of view also the meaning) of the expression *there is* by invoking Wittgenstein's notion of the language-game.

Without spending too much time explicating the idea of language-game, an extremely influential concept introduced by Wittgenstein (1953) and later developed into use-theory, let us say that the metaphor of the language game is a means of representing how language connects to the activities and situations in which it is used. I would like to highlight a number of points made by Hintikka (1968) in the framework of language games that are germane to my exposition of the idea of feature-placing. It should be noted that I do not follow Hintikka in translating *there-is* by the existential quantifier for reasons that will be discussed shortly. The points he makes are nonetheless relevant to the present analysis.

The game that Hintikka associates with the existential quantifier is the game of seeking (or looking for) and finding (or producing). His thesis is that becoming aware of the existence of individuals involves both looking for and finding an object with the requisite properties. From the point of view of this thesis, it is useful to look at the game he proposes, a search procedure, as a stand-in for the verification of the truth of an existential sentence, for its truth conditions. The details of the game are as follows: Given

the game-theoretic notion of *winning*, which is akin to the standard Tarskian semantic notion of *satisfaction*, a game of seeking and finding proceeds as follows: A player looks for an object with the required properties; if he finds the object of search, he wins the game, and has a true sentence. If not, the opponent wins and the sentence is false. As applied here, in other words, verification of an existential sentence consists of a search procedure the successful completion of which ends with finding or producing an object with the required properties at a given location (or equivalently, finding a location in which the required property is instantiated). This scenario thus fits nicely into our conception of a feature-placing sentence.

In his discussion of the seeking and finding game, Hintikka also discusses the importance of "restricting the search space." That is, the fact that the sentence *there are men* is odd in most circumstances without further specification: One would say *there are men in the garden*, or *in the kitchen*, etc. When placers are discussed in further detail below it will become clear how the coda serves to restrict the search space. Finally, it is interesting to note that one verb that Hintikka associates with the existential quantifier, *seek* is intensional. This fact will become important to the discussion when the denotation of the associate NP and the copula is discussed below.

The locative content of *there*-sentences

The locative content of *there*-sentences has been widely discussed, especially in relation to a transformational account between *there*-existential sentences and related sentences such as copular and possessive sentences (cf. Clark, 1978; Freeze, 1992 et alia). Many, if not most authors take the locative content of the existential to be a product of, or

derivable from, the expletive *there*, noting that *there* serves elsewhere in English as a locative adverbial and that cross-linguistically the expletive that surfaces is often a locative pro-form.

Not all authors agree with this view. Milsark (1974) and Chomsky (1986; Chomsky, 1993, 1995), for example, both contend that although it stands in syntactic subject position, the expletive *there* is semantically vacuous. These authors, however, do not (as far as I am aware) relate this view about *there* to a discussion of the construction's locative content. Like Milsark and Chomsky, I take the expletive *there* to be vacuous, and I suggest that there is an alternate source for the locative content of the *there*-sentence. In most cases, the coda is an overtly locative item that plays this role, the role of the placer. Other authors, including Lyons (1975) and Clark (1978) have acknowledged the coda as a locative element in the *there*-sentence but have not thereby denied the locative contribution of the pro-form *there*, which I do here.

To locate is not to predicate: An account of the predicate restriction in feature-placing terms

The claim that the coda, when present, is the source of the locative content of the *there*-sentence is supported by the fact that most of the expressions that are found there are obviously locative, and serve as placers. A majority are locative prepositional phrases, as in *there is a cat* <u>*on the mat*</u>, *there are flowers* <u>*in the garden*</u>, etc. However, for a number of speakers certain adjectives are also licensed in *there*-sentences, in sentences like *there is a man* <u>*sick*</u>, *there is a baby* <u>*asleep*</u> or *there are firemen* <u>*available*</u>. Speakers that do not accept these sentences do allow them if a prepositional coda is added, e.g. *there is a man*

sick in the next room. This suggests that the adjectival phrases and locative prepositional codas have a different status in the *there*-sentence. Specifically, while the prepositional phrases clearly function as placers, it seems that the adjectival codas, though they must be compatible with a locative interpretation, do not do the same work as the coda. Instead, these sentences are interpreted as coda-less *there*-sentences with respect to the default location. One piece of evidence in favor of the idea that adjectival and prepositional phrases play different roles in the construction is the fact that, as mentioned above, a number of speakers dislike *there*-sentences with overt adjectival phrases and no coda. Secondly, notice that prepositional phrases, unlike adjectival phrases, are easily dislocatable:

36. In the garden there is a man.
37. *Sick, there is a man.
38. In the garden there is a man sick.

Notice also that in addition to the subset of adjective phrases allowed here, a variety of phrases in the progressive are licensed: *there is a man hitting Fred*, *there is a man sitting in the garden*, etc. Among these, however, it is useful to note again a distinction between those that may be easily pre-posed and those that may not, along the lines of the adjectival versus prepositional cases above:

39. There is a man hitting Fred.
40. #Hitting Fred there is a man.

41. ?Hitting Fred, there is a man with dark hair and glasses.

42. #Hitting Fred there is a man in the garden.

43. There is a man sitting in the garden.

44. Sitting in the garden there is a man.

With regard to the progressive cases, it is interesting to note that unlike the adjectival cases, adding another locative does not remedy the infelicitous cases such as that in 40. Furthermore, notice that those that may be preposed are those containing verbal elements that are themselves licensed in the *there*-sentences:

45. There sits a man in the garden.

46. *There hits a man Fred.

The varying ability to prepose extends to the copular case as well. As in the *there*-sentence, positional or locative verbs such as *sit* and *stand* are more easily preposed, though the others like *hit*, when made heavy, are allowable:

47. Hitting Fred was a man with dark hair and glasses.

48. Sitting in the garden was a man.

Returning to the adjectival cases, as mentioned above only a subset of adjectives is licensed here; this restriction is called the predicate restriction. (It has also been called the

stage-level/individual-level distinction). How can we distinguish among adjectives that are licensed in the coda from those that are not? As mentioned above, I suggest that only adjectives that are compatible with a locative interpretation, and therefore compatible with placing, are licensed in this position. How can this distinction be formalized?

First, observe some of the differences between feature-placing and predication. For example, if you say *there is dirt on the wall*, you do not mean the wall is dirty, but that a patch of wall is dirty. You are not predicating dirtiness of the wall by saying *there is dirt on the wall*, and you are not predicating on-the-wall-ness of dirt. Instead, you are *locating* (or *placing*) dirtiness; the result is an assertion that a dirty patch or area of the wall exists at that location. Because we are not predicating a property of an object in a *there*-sentence, but locating a satisfying of a characteristic function, only adjectives that denote properties that can change on the basis of the location in time or space of the individual that have them are compatible with placing and therefore possible in *there*-sentences. What kinds of properties are these? These are, somewhat unsurprisingly, the so-called stage-level properties. Whenever and wherever an individual is, it retains its individual-level properties, those properties that define it and are (relatively) unchanging. These are not compatible with feature-placing; they are not informative in this context. Certain properties of the individual, however, will change with respect to location and time. Only these properties can help locate an individual: An individual will invariably have all its individual-level properties, but its stage-level properties vary. That is, placing makes sense with one of these adjectives only if the property is one that the truth-making individual does not *always* have.

For example, take the sentence *there is a man in the garden*. The placer *in the garden* can locate the features of *a man*, thus leading to the verification of the existence of a man in that location: Of a man's properties, being in the garden is one that changes over time and space, and there are gardens where a man can be found at a time, and gardens and times where a man is not to be found. What about *there is a man sick*? Well, there are certainly places where sickness can be found, manifested in organisms, and it is even possible to say something like *there is sickness in Paris*, and so the predicate *sick* is, according to our diagnostics, compatible with placing. But the crucial point here is that an individual's status with regard to *being sick* can change *with respect to time and space*. John might be sick in one place and time and not in another. What about *tall*? Are there places where things are tall and where they are not? No. If something is tall, it is tall everywhere—height does not change with respect to location. Even if we picture a world where height *does* change over time and space, an Alice in Wonderland kind of situation, for example, the fact is we are still using the English that we use in this world to describe it, and in this world, and in this English, *tall* is not an adjective that is variable along these parameters. (Of course *tall* is an adjective that is relative, so that also has to be taken into account.[8])

[8] *Tall* can be taken as relative to one context or relative to different contexts, as the standard of comparison changes, i.e., as the reference class changes, it is possible to be tall in one place, and short in another. Say the population in one place is rather short, and you are considered tall there, but short somewhere else, where the population is tall. Either way your actual height doesn't change. Cf. also tall *for a three-year old*, tall *for a basketball player*, etc.

The coda and the predicate restriction: *localizability*

Thus, there are adjectives that are compatible with location in the sense that they may be used to help locate or place objects, and are locatable with respect to other objects, and those that are not. I call predicates that can be used to help locate objects and can themselves be located, *localizable.* The adjective *sick*, for example, can be used to help locate, whereas an adjective like *fat*, cannot. This has to do with *fat* denoting a property of individuals that does not change with respect to time and space, whereas *sick* does. Thus, the proposal concerning the predicate restriction is that if a predicate cannot be localized, it is not compatible with feature-placing and is thus not licensed in a *there*-sentence.

There are a number of ways to bring out the distinction between predicates that are and are not localizable. A predicate's compatibility with a locative prepositional phrase is one way.

49. #John is tall in the kitchen.
50. *There is a man tall (in the kitchen).

51. John is sick in the kitchen.
52. There was a man sick (in the kitchen).

However, although a predicate that is localizable can be modified by a locative, this criterion is not enough, because there are predicates that may be modified by a locative

that are still not licensed in the coda. To make the correct cut among properties that are licensed in the coda position of *there*-sentences and those that are not, there is something else that needs to be added to our formulation of localizability. Here it is important to keep in mind that our elaboration of the predicate restriction tracks whether the property can change on the basis of the location in time and space of the individual that has it.

The fact that the locative content of the existential and its role in feature-placing, as opposed to predication is related to the predicate restriction helps us achieve part of our larger goal, to provide an explanation of the restrictions that are operative in the *there*-sentence that is related to its interpretation, and the feature-placing hypothesis is successful on this count. But what happens when no coda is present in the *there*-sentence? What is the source of the locative content in those cases?

What happens when there is no coda?

Often, an existential *there*-sentence appears with no coda expression. Of course this makes it no less existential—in fact, sometimes the existential import of a coda-less *there*-sentence feels amplified. How does this existential interpretation arise on the account provided above, where a placer is crucial to the interpretation of the *there*-sentence? Some examples of coda-less *there*-sentences:

53. There is a god.

54. There are tame tigers.

In a sentence like *there is a god* the implicit domain of evaluation is this world. If I utter the sentence *there is a god*, it will be true if the current universe, or domain, contains a god. So, without further specification, the *there*-sentence seems to have a very large domain. The sentence *there are tame tigers* shows the same thing with respect to the domain. The effects of such a large "default" domain of evaluation can be seen if we take into consideration sentences like the following, which we considered earlier in the discussion of the language games of seeking and finding:

55. There are men.

This sentence is strange in most circumstances we can imagine, because it asserts the existence of men *in this world*, which isn't news to anyone. Further restricting the domain by specifying a coda makes the sentence more likely to be informative:

56. There are men in the driveway.

In a similar way, we can use the coda to shift the *world* of evaluation. For example, one might judge the sentence *there are unicorns* to be false, but the sentence *there are unicorns in this story* to be true. Therefore it seems that the locative content of the existential *there*-sentence may be shifted or narrowed by the coda, if one is present. If no coda is present, the locative content defaults to the current context (e.g. *there is a problem*) or default domain (the world, universe of discourse).

There-BE vs. *exist*: Domains as locations

Related to the effects of the coda on the domain of evaluation for a *there*-sentence are differences in the domain when *exist* is substituted for BE. It seems that the *there*-sentence is more inclusive than the verb *exist*, which seems to require that the entity exist *in this world*. This observation is illustrated in the following sentences:

57. There are tame tigers that don't exist
58. There exist tame tigers that there aren't (contradiction)
59. There exist tame tigers that don't exist (contradiction)
60. There are tame tigers that there aren't (contradiction)

The first sentence asserts, essentially, the possibility of tame tigers that don't exist in the actual world, and it is grammatical and non-contradictory. The second sentence is a contradiction on account of, I argue, the domain restrictions inherent in the verb *exist*. It seems that when no coda is present in a *there*-sentence, a default location is interpreted but that the verb *exist* introduces its own, more restrictive, domain.

Is the fact that *there* surfaces as the expletive just a coincidence?

Having argued that the locative content of the *there*-sentence is due in part to the contribution of the verb and in part to the expression in coda position, if realized, it remains to be addressed why the expletive *there* surfaces in the *there*-sentence, and not some other element, for example the expletive *it*. Although I cannot provide a clear explanation of this fact, I would at least like to consider some data that call into question the connection between the locative content of the *there*-sentence and the properties of

the expletive. First, in a variety of American English dialects other lexical items surface as the expletive in the *there*-sentence. In some dialects, for example, *it* or *they* surfaces (as in the Appalachian example above). In other dialects, no expletive appears whatsoever (whether absent or deleted[9]). Now, it would be difficult to argue that there is locative content to the pro-forms *they* or *it*, and equally difficult to argue that there is a lack of locative content in *there*-sentence in dialects where one of these or no expletive at all surfaces. Furthermore, as was already noted in Milsark (1974, p. 120) if *there* is related to the locative adverbial *there*, what is it that makes *there* surface as the expletive and not *here* or *where* or *somewhere*? We still need an explanation for why *there* surfaces. What's more, Milsark (1974) notes that in regard to stress, expletive *there* has very different properties than its locative adverbial counterpart, namely, while locative *there* frequently gets stressed, expletive *there* never does.

61. **THERE**'s a penny! (locative adverbial *there*)

62. There's **A PENNY** on the sidewalk. (expletive *there*)

The most convincing argument against the locative adverbial analysis, also from Milsark (1974), is that while expletive *there* behaves in all ways like a NP (can undergo passive, raising, subject-auxiliary inversion, etc.) the locative adverbial *there* does not. I suggest that taken together these facts are an indication that the connection with the homophonic

[9] As in some African American English dialects:

i. Ain't nothing bothering her.
ii. 'There is nothing bothering her.' (cf. Green, 2002)

locative adverbial appealed to by many authors as the source of the locative content of the *there*-sentence may be misguided.

The role of location in *there*-sentences with a note on location in *weather*-sentences

An interesting research direction emerges from the account of location in *there*-sentences presented here. The *weather it*-sentence, sentences like *it's raining* or *it's snowing*, is a sentence-type that like the *there*-sentence has an expletive subject and like the *there*-sentence has been observed to have locative content. Many authors have argued (cf. Neale 2007; Perry 1986, inter alia) as I have here for the *there*-sentence, that a weather-sentence has as part of its interpretation a (sometimes unrealized) locative element. The *weather it*-sentence has received quite a bit of attention in the literature with respect to the possibility of this element being unarticulated (cf. Neale, 2007; Perry, 1986; Stanley, 2002 inter alia). An example of a sentence that might be claimed to have an unrealized or unarticulated locative element would be *it's raining*. Of course, if you are in New York, that sentence and the sentence *it's raining in New York* express the same proposition.

There seem to be interesting differences, however, to be observed concerning the role of location in the two constructions. First, notice that the "default" domain for the *weather it*-sentence is the current location, not the current world, as we saw with *there*-sentences:

63. It's raining. (The implication is that it is raining *here*.)
64. There are tame tigers. (True if there are tame tigers *in this world*.)

There are situations, however, in which the more restricted domain of evaluation that is default in the *weather it*-sentence becomes available in a *there*-sentence.

65. Situation: Looking over a document.

    A: There are typos.

The speaker of the *there*-sentence above does not mean to say that there exist typos *in this world*[10]. The speaker means *in this document*. How can we explain these differences?

Given the lively discussion in the literature on location as an unarticulated constituent in *weather it*-sentences, my hope is that by widening the empirical domain to include *there*-sentences, further progress towards an account of the role of location in these propositions will be possible, although I do not have more to offer on the topic at this time.

Features and the expression of existence

The existential import of *there*-sentences: previous approaches

Having claimed here that the locative content of the *there*-sentence plays a role in the expression of existence, let us now review some of the extant approaches to the representation of existential import in these sentences to facilitate discussion of the issues surrounding each.

[10] See also Part 2 for a further discussion of *flaws*, *typos* and other so-called trouser words in the *there*-sentence.

- ***There-be* is translated by an existential quantifier**

  On this kind of account, the existential import of the *there*-sentence is contributed by the lexical items *there-be*, which are translated by the existential quantifier. (cf. Hintikka, 1968; Milsark, 1974)

- ***There* is vacuous, BE is vacuous (i.e. is the copula), the indefinite NP contributes an existential quantifier**

  On this kind of account, it is the indefinite NP that contributes the existential import of the *there*-sentence (cf. Russell, 1905).

- ***There* is vacuous, BE is vacuous, the indefinite NP contributes a free variable bound by existential closure**

  On this kind of account, neither *there-be* nor the indefinite NP contributes an existential quantifier to the representation. Instead, it is the operation of existential closure that contributes the existential import of the sentence (cf. Heim, 1982).

- ***There-be* is an existential predicate, the indefinite NP is a property**

  On this kind of account (often called *semantic incorporation*), the existential import is contributed by the lexical entailments associated with the second-order existential predicate *there-be*, which takes the associate NP as its subject (cf. van Geenhoven, 1998; McNally, 1998a).

The approaches above divide into two classes with respect to how they represent the existential import of the *there*-sentence: The first three are all varieties of a *quantificational* approach and the fourth approach is a *lexical* approach. How do we choose among these formulations? In *there*-sentences, is existence best represented as a predicate, or a quantifier? Something else? Some considerations follow.

A challenge to the lexical approach: Is existence a predicate?

The debate about the logical representation of existence has a long history, partly due to its association with the ontological argument, the argument for the existence of god. Certain parts of this debate are relevant to the question of how to represent the existential import of the *there*-sentence. The debate about whether or not existence may be represented as a predicate at all is certainly relevant. Kant (1781), Frege (1884), Russell (1924), Carnap (1932), and Moore (1936) are just a selection of the many authors who have weighed in on this topic.

One argument against the representation of existence as a predicate, more specifically, as a first-order predicate that takes entities as its argument has been called following Quine (1948) *Plato's beard* and it concerns empty names and negative existence. Suppose that the sentence *Pegasus exists* predicates existence of an individual, Pegasus. Intuitively we take that sentence to be false because we know that Pegasus doesn't exist, but there is the additional problem of there being no referent for the name *Pegasus*. That is, the sentence seems to be false not because we found the individual Pegasus and did not find him among the existent things—then he would be an individual and exist—but because we did not find the individual Pegasus at all, so the sentence is not evaluable. Things get

worse when negative existence comes into play. When we use a sentence like *Pegasus does not exist*, are we predicating not-existence of a non-existent? How can *Pegasus* stand as a subject term in a sentence if the name is empty—and the sentence still be judged true?

In response to this problem, Russell went so far as to say that sentences with the predicate *exists* taking a singular subject, like *Mary exists* are *ungrammatical*: "The ontological argument and most of its refutations are found to depend on bad grammar" (Russell, 1924). In a similar vein, Carnap remarks: "The circumstance that our languages express existence by a verb ("to be" or "to exist") is not in itself a logical fault; it is only inappropriate, dangerous" (Carnap, 1959; Kant, 1781).

The problem of negative existence led Frege (1884) to propose that existence is not a property of individuals, i.e., a first-order property, but a second-order property of properties. On this account, a sentence like *Mary exists* means the concept of *being Mary* is instantiated at least once—in other words, the set denoted by the predicate *being Mary* is non-empty. A sentence like *Pegasus exists* is false because the concept of *being Pegasus* is not instantiated, in other words, the set denoted by the predicate *being Pegasus* is empty. Thus, the problem of negative existence and empty names is avoided.

Given the Fregean solution, the problem of negative existence is not really a challenge to the lexical approach after all. That approach says that the existential predicate is second-order, thereby avoiding the problem of negative existence. However, I will raise a

different objection to the lexical approach above further on. For now, let's look at the quantificational approaches, the standard representation of existential import in modern logic. More will be said about *exist* and the question of existence as a predicate in when the verbal element of *there*-sentences is discussed in an upcoming section.

A challenge to quantificational approaches: Definiteness effects, scope

Another discussion looks at the behavior of the post-verbal NP in *there*-sentences and asks whether it behaves like a existentially-bound variable (whether contributed by the NP or by existential closure) or more like a set-denoting, predicative expression. I will present two of the reasons why authors have argued for the interpretation of the associate as a set, against the quantificational view.

The first reason is that the similarities of the restrictions on expressions in the position following BE in both copular sentences and *there*-sentences are similar, suggesting 1) that the BE we find in *there*-sentences is the copula and 2) the post-verbal NP in the *there*-sentence is interpreted as a predicate expression, as in the copular sentence, and not as a quantified NP. For example, strong quantifiers such as *every*, *most* and *each* are barred from the post-verbal position in both copular and *there*-sentences[11] (cf. Edward L. Keenan, 2003; Edward L. Keenan & Stavi, 1986; Milsark, 1974).

Copular sentences

66. John is a doctor.

[11] One version of the weak-strong distinction says that if a quantifier is symmetric, or intersective it is weak, and if not, it is strong.

67. *John is every doctor.

68. (cf. John is every kind of doctor.)

***There*-sentences**

69. There is a doctor in the house.

70. *There is every doctor in the house.

(cf. There is every kind of doctor in the house.)

The second reason is the associate NP's narrow scope. The associate NP only takes narrow scope with respect to other quantifiers (cf. Milsark, 1974), suggesting that it may be non-quantificational. For example, in 71 the NP *a murderer* in the embedded sentence can be interpreted either *de dicto* or *de re* with respect to the matrix verb *believe*, but in the embedded *there*-sentence in 72 it can only receive a *de dicto* reading, meaning that it cannot get wide scope with respect to the verb *believe*.

71. John believes that a murderer was hiding in a closet.
=John believes that someone who is a murderer was hiding in the closet.
=John believes that a certain murderer was hiding in a closet.

72. John believes that there was a murderer hiding in a closet.
= John believes that someone who is a murderer was hiding in a closet.
≠ John believes a certain murderer was hiding in a closet.

Similarly, the associate NP always takes narrow scope with respect to negation:

73. There wasn't a man in the room.

=It is not the case that a man was in the room.

≠There was a man that wasn't in the room.

For these and other reasons, authors have argued that the associate NP is non-quantificational and argued instead that it is set-denoting[12]. This approach to the interpretation of the post-verbal NP, of course, requires that the existential import of a *there*-sentence be derived from some other source. As seen in the lexical approach, proponents of this kind of interpretation for the associate NP have argued that an existential predicate does this work.

A third option: No existential quantification *and* no existential predicate

I would like to explore a third option: As in the lexical approach above, I claim that *there*-sentences contain no existential quantification, and that the associate is not interpreted as a bound variable. Unlike them, however, I would like to suggest that *there*-sentences also do not contain an existential predicate, for the following reason: It is unnecessary. I will spend some time now arguing that an existential predicate is superfluous to the analysis of *there*-sentence because existential import is entailed by the combination of a locative element with a characteristic function[13]. In other words, the successful placing of a feature—in other words, the satisfying of a characteristic function at a location—entails the existence of something that has feature, i.e., that satisfies the

[12] As above, I believe that the denotation of this noun phrase is non-quantificational but that it is interpreted as the characteristic function of a set, not the set itself, for reasons that are explained in the next chapter.

[13] The existential import of different existential sentence-types may be manifested in different ways. The existential import of an *exist*-sentence such as *John exists*, for example, may have a different source than the existential import of a *there*-sentence. Some types of existential sentence-types' existential import could be lexical, some quantificational, and this could vary cross-linguistically.

characteristic function, at that location. The following sentences illustrate these entailments (where '>' means entails):

74. There is red in the garden. >

    Something is red in the garden.
    NOT: The garden is red.
    (cf. *Red is in the garden.)

75. There is a child in the garden. >

    Something is a child in the garden.

One question that immediately arises on this view is: What kind of entailment? I believe that these entailments reveal a logical inference that is, however, not a part of the grammar. Instead, the idea is that the truth conditions of the feature-placing sentence are logically equivalent translations of objectual truth conditions such as the standard *there is an x such that…*

Positing this logical equivalence makes it possible to say that a structure that contains neither an existential quantifier nor an existential predicate, which does not invoke the operation of existential closure, and which contains no expression that refers to an individual or introduces a free variable into the representation still makes a unit that is able to be judged true or false and which may be used to make an assertion of existence.

Unlike the lexical approach, which appeals to an explicit existence predicate, and despite the fact that I appeal to an entailment associated with the *there*-construction, namely with the combination of a non-quantificational NP and a locative element in the presence of *there-be*, this entailment is not part of the grammar, but reveals a logical equivalence in the metalanguage. The satisfying of a characteristic function at a location has entailments that allow us to capture the existential import of the *there*-sentence without existential quantification or an existential predicate.

The verbal element in there-sentences

In previous sections I argued that the feature-placing sentence combines a locative element and a characteristic function to yield an assertion of existence. In this section it will be claimed that the BE found in the *there*-sentence is the copula and therefore contributes no additional meaning to the sentence. It nonetheless plays the important function of setting the default domain of evaluation if no coda is present. The situation is clearly different in the case of the predicate *exist*, whose existential meaning is not derived (as I claim the existential meaning of the *there*-sentence is) but inherent in its lexical meaning. The role of *exist* in the *there*-sentence and the relationship between existential statements with *exist* and with BE will also be addressed in this chapter.

The different domain of *there*-sentences with *exist*

Feature-placing sentences—both with and without a coda—place features in the currently relevant world, usually this one. That is, when one says *there is a man in the garden*, it

means in the relevant garden *in the world under consideration*. When one says *there are unicorns*, the statement is false because there are none in this world. This default specification of the domain as our world can be overridden, however, by explicitly shifting the domain using the coda XP. For example, you might say that the sentence *there are unicorns* is false but that the sentence *there are unicorns in fairytales* is true. As mentioned above, the verb *exist* has as part of its default meaning that its argument exists in this world. This specification, too, can be overridden with explicit changing of the world of evaluation, as seen in (2). In general, however, sentences with *exist* differ from feature-placing sentences in that *exist* is not localizable; it disallows a coda XP unless it changes the world that is being specified. This makes sense when one considers that the existence predicated of things using the verb *exist* is relevant to worlds, not locations within them. Compare 76 and 77:

76. #John exists in Paris. (i.e., and not elsewhere)
77. Unicorns exist in fairytales.

In other *there*-sentences, such as 78, no coda is present yet a default domain is interpreted. Although there is no coda XP present in 78, for example, a default location within this world is understood to be relevant, not the entire world. A sentence like 78 would be used in a context where the location of the problem is assumed to be part of the common ground and may therefore be left unexpressed (and not in a context where one wants to assert the existence of problem(s) more generally).

78. There is a problem/typo/error (here/with my carburetor).

Although both of the sentences below—seen in Chapter 1 and due to Moore (1936)—have existential import, it appears to be contributed to the sentence in different ways. Is the contribution of *exist* to the sentence in 80 the same as that of BE in 79? It seems that it is not. Notice, for example, that while the sentence in 82 is contradictory, the sentence in 82 is not:

79. There are tame tigers.

80. There exist tame tigers.

81. There are tame tigers that do not exist.

82. #There exist tame tigers that do not exist.

In order to understand the difference between 81 and 82 it is necessary to make room for two notions of existence: that of things in the world and that of things *not* in the world, i.e., distinguishing *actuality*, a property of things in this world, from *being*, attributable to objects in any possible world. That is, it is possible, on this view, that there are entities that don't exist in our world, like unicorns, but which nonetheless have existence of a different sort, in a different 'world'. The example in 82 makes it clear that without further specification, the verb *exist* requires the existence *in this world* of the denotation of its argument. It seems the *there*-sentence is more lenient in this respect, allowing in certain contexts for the existence of entities that do not exist in our world, such as unicorns. This

explains the fact that 81 is informative and non-contradictory: it expresses the difference between entities that exist in a broader sense (in a book or picture, for example) and those things that exist in the reality of the world under evaluation.

In addition to this distinction between the domains of the *there*-sentence with and without *exist*, remember that while *there*-sentences exhibit definiteness effects, ordinary sentences with *exist* do not (cf. *Santa Claus exists*), and in fact seem to require an individual denoting NP subject (even if that happens to be a kind). Finally, it will be necessary to look at what each of these elements contributes to the *there*-sentence. It will be argued below that although both *there*-sentences and *exist*-sentences can be used to make existential assertions, they do so differently.

How is BE interpreted in the there*-sentence?*

The debate about whether or not the verb BE has multiple interpretations has a long history, going back to Plato and Aristotle, through to Frege and Russell and up to the present day (B. H. Partee, 1987). Some authors have claimed that there are at least three interpretations of BE, and I will with them claim that BE is ambiguous. There is (at least) the BE of predication (the copula), BE of identity and BE of existence. English examples are given below:

83. John is a doctor.	BE of predication (the copula)
84. Cicero is Tully.	BE of identity

85. God is. BE of existence

86. I think therefore I am.

87. To be or not to be, that is the question.

The BE of predication stands between an argument and its predicate. The BE of identity stands between two arguments. The BE of existence takes a subject argument only. The examples in 83-87 are archaic sounding in English, but they nonetheless receive the intended interpretation.

The idea that there are multiple NP interpretations is less contentious than the idea of an ambiguous BE: Linguists generally agree that NPs may have interpretations as individuals, properties and as quantifiers. For example:

88. Every man is sick. Quantifier

89. Cicero is Tully. Individual

90. I consider that an island. Property

One way of looking at the ambiguity of NP and BE interpretations is to posit that they co-vary. Such an approach has been argued for in Fiengo & May (1994), for example, with respect to copular sentences and identity statements. Following this assumption, you might argue that the copula, as seen in 88, selects an individual- or quantifier-denoting subject and a property-denoting predicate, the BE of identity, as seen in 89, selects two

individuals as arguments, and the BE of existence, as seen in 85-87, selects only one NP, and this must be individual-denoting.

In this section I will attempt to characterize the BE that appears in the existential and its relationship to the interpretation of the associate NP.

The BE of existence: Is it a productive verb in ordinary English?

> "In 'The Chain', a chirpy British film comedy from 1984 about moving house, the foreman of a team of movers is taking evening classes in philosophy, and is prone to metaphysical musings while lugging heavy pieces of furniture. On the way to his first job of the day, he recites what he has learned to his workmates: 'What Descartes is saying is 'I think, therefore I am.''
>
> 'Am what?' someone asks.
>
> 'Just am.'
>
> 'Can't just be am. You gotta be am something.'"
>
> - Anthony Gottlieb, November 2006 issue of the *New Yorker*

As the exchange above suggests, instances of the BE of existence in modern English tend to be fixed locutions with an archaic quality, brought to us from Descartes, the Bible, Shakespeare and John Lennon. It seems reasonable to assume that this BE is not entirely productive in modern English, and this is one reason to assume that the BE of existence is not what we find in the existential construction, apart, perhaps, from fixed locutions like *let there be light*.

Another reason to doubt that in garden-variety *there*-sentences the BE of existence is present is the fact that in cases with a coda, the verb *exist* may not be substituted for BE. (I realize that these judgments may be somewhat controversial. Pending discussion below of sentences such as *there exist wombats*, let me note that I am not denying that *exist* may be a verb in existential there-sentences *when there is no coda*, just that the sentences with *exist* below are ungrammatical.)

91. There is a man in the garden.

92. *There exists a man in the garden.

93. There is a fly on the wall.

94. *There exists a fly on the wall.

95. There is a party this weekend.

96. *There exists a party this weekend.

97. There are 9 men on a baseball team.

98. *There exist 9 men on a baseball team.

If the BE of the *there*-sentence and *exist* had the same interpretation, namely, predicating existence of their subject, one expects that they would be interchangeable, but they are not. To the extent that we can interpret the now archaic use of the BE of existence in the sentence below, it seems to have the same meaning as the sentence with *exist*:

99. God is.

100. God exists.

The BE of identity

It is fairly straightforward to rule out the BE of identity in the *there*-sentence. This seems reasonable both because of the observed definiteness effects on the post-verbal NP and the fact that the syntax of the there-sentence (in English, anyway) prohibits multiple NPs. As seen above, the syntax of the BE of identity requires two arguments that denote individuals. Syntax aside, it is also not the case that one could use a *there*-sentence to express an identity statement (cf. 101-104).

101. *There is the best cook in town.

102. *There is John (in the garden).

103. *There is John the best cook in town.

104. *There is an even number a number divisible by 2.

The copula

We are therefore led to conclude that the BE found in *there*-sentences is the copula, and that in these sentences BE does not contribute anything to the semantics of the construction, whose meaning is dependent only on the semantics of the feature and placer. Furthermore, since I deny that the associate NP is set or predicate denoting, I also deny that the position following the copula is a predicate position. To be sure, there are definiteness constraints with associate NP of a feature-placing sentence cannot denote a specific individual, just as there are for the predicate position of a copular sentence. But

this is attributable, perhaps, to their similar interpretations, that of a set denoting expression in a copular sentence and a characteristic function of a set-denoting expression in the case of a *there*-sentence.

BE and *exist*

Above it was conceded that there were indeed instances where the verb *exist* could be substituted for BE in an existential statement. It is true, for example, that without a coda it is possible to substitute *exist* for *is* in a way that was not possible in the sentences above (cf. 91-98). Remember, above it was claimed that the verb *exist* selects individual-denoting NPs as its argument, and individual-denoting NPs are normally disallowed from associate position in an existential sentence. How can we account for this fact?

105. There are tame tigers.
106. There exist tame tigers.
107. Tame tigers exist.

It seems that the sentences in 105-107 are synonymous—apart from the possible difference in domain that accompanies the appearance of *exist*. All three sentences assert the existence of tame tigers. I would like to suggest that, however, while 105 and 107 exemplify different ways of asserting existence, 106 is an amalgamation of these forms that piggybacks on their synonymy. A sentence like 105 accomplishes an assertion of existence via the feature-placing form: a characteristic function satisfied at a given location. In 107 the assertion of existence is accomplished by a lexical predicate that

takes arguments and asserts of their referents that they exist. What of 106? Well, it seems to combine the restrictions of both, but in a much less productive way. (The fact is that sentences with *there exist* are somewhat stilted for most speakers.) Notice that the only *there*-sentences in which *exist* can appear grammatically are those that conform to both its own restrictions against explicit localization (i.e., *exist* may only appear in *there*-sentences with no coda) *and* those that would make grammatical sentences of the form *x exists*. In addition to these restrictions, which come from the verb itself, the *there*-sentence adds its own restrictions against definite NPs which persist when *exist* is the verbal element in the construction (e.g. **There exists Santa Claus*). I'd like to claim, therefore, that the constelation of facts we've seen with *exist* in *there*-sentences suggests that it is only possible as a verbal element as long as there is a synonymy between sentences of the form *NP exists* and *there are NP*.

Conclusion

This research is based on the idea that the form of the existential *there*-sentence is not function-argument but feature-placer and that this fact accounts for its well-known properties: its expletive subject, definiteness effects and the predicate restriction. I have also argued that there are reasons to believe that the expletive *there* is vacuous, and that the source of the construction's locative content is the verbal element or the coda. I have shown that there are good reasons to believe that the NP following V is non-quantificational, and that the expression of existence in the existential *there*-sentence proceeds by other means, viz. via the lexical entailments triggered by the combination of

a location and a characteristic function of a set, i.e., the combination of the associate NP and the coda.

A note on the non-canonical word order of the *there*-sentence

Finally, a complete account of the existential *there*-sentence should have something to say about its non-canonical word order. Some authors have given the word order of the existential a historical explanation, treating it as a remnant surviving from an older form of the language that allowed a V1 word order in certain contexts and achieved emphasis by placing elements in the first position of the sentence (cf. Curme, 1931). In addition to this historical explanation for the non-canonical word order, Curme (1931) also appeals to a discourse principle that holds that by using the existential *there*-sentence the speaker achieves a "feeling of suspense" by "withholding" the subject until later in the sentence. He thus calls *there* an *anticipatory subject*. Subsequently, many authors (if not most) have claimed that the special word order that obtains in the existential *there*-sentence tracks a discourse-structural distinction between existential *there*-sentences and other declaratives (cf. Gregory Ward & Birner, 1998). From the point of view of the current research, however, the special word order of the *there*-sentence, whatever discourse properties it may have as a result, is attributable to its special status as a feature-placing sentence and does not have a function-argument structure: In short, the associate NP is not an argument of any function and therefore it is unsurprising that at the end of the derivation it does not end up in syntactic subject position.

Part Two: The Associate NP

Introduction

The framework for what Strawson called feature-placing sentences that was introduced in the last chapter specifies the interpretation of the associate NP as the characteristic function of a set. In brief, the formalism works as follows: This characteristic function will output one just in case *there is* an item that satisfies the characteristic function at the location denoted by the placer, and zero otherwise. Thus, the output of the characteristic function is not the end of the story as far as the feature-placing sentence is concerned, as discussed in the previous chapter. For truth, in addition to the characteristic function yielding one, there is a specification that this output hold *at the location denoted by the placer*. How does this formalism square with what we know about the associate NP?

The associate NP of an existential *there*-sentence cannot refer to an individual. It is for this reason that proper names, pronouns and demonstratives are excluded from the associate position, on their normal interpretations. Definite descriptions and what have been called strong quantificational NPs are also disallowed there. An account of these restrictions—the so-called *definiteness effects*—and the contribution of the associate NP to the interpretation of the existential *there*-sentence and to the discourses they occur in are the topics of the present chapter.

The truth conditions of the *there*-sentence do not require of a particular individual that *it* is in existence at a particular location. Instead, they require that a satisfying of the

characteristic function take place there. The semantics of the associate NP are thus bound up with the semantics of indefinite noun phrases more generally, and as I claim, also with the semantics of feature-placing. The indefiniteness of the associate—in addition to the existential import of the *there*-sentence—is undoubtedly part of the reason that many authors have assumed an existential quantifier to be present in the semantics of the existential. Indeed, before Heim's (1982) work on the interpretation of indefinites, and the simultaneous development of Discourse Representation Theory, an indefinite NP was typically represented as introducing an existential quantifier into the semantic representation (cf. Russell, 1905). The existential import of the existential sentence and its restriction to indefinite NPs were directly related in such a theory.

This relationship between the interpretation of the nominal element and the expression of existence is accounted for in a different way in the feature-placing account of *there*-sentences. Clearly, the primary function of the *there*-sentence in the discourse is to assert the existence of entities not already assumed to exist. In the grammar of *there*-sentences, existence and discourse status—being new to the discourse versus being part of the discourse—are linked via location, that is, via feature-placing. The location—which is either supplied by the verb, the context, or by the locative prepositional phrase—can specify whether the assertion of existence is to be taken as relative to this world, to the situation at hand, to a salient location or situation. Thus an entity can exist in the universe, in a particular location or discourse situation.

Keeping this in mind, the prohibition against certain definite expressions in *there*-sentences, namely those that carry presuppositions of existence, makes intuitive sense: Why would a speaker assert the existence of something, or introduce something to the discourse, which must already be presupposed to exist or be taken for granted? One question that the present chapter takes up, however, is whether a pragmatic account of the definiteness effects in *there*-sentences that focuses on presupposition is enough. That is, are the definiteness effects attributable in full to a pragmatic requirement against presuppositional noun phrases in associate position, as proposed by Zucchi (1995), among others? Or is the pragmatic restriction a byproduct of the semantic requirements the construction imposes on the associate NP?

Zucchi (1995) points out that the class of NPs that is banned from the associate position in existential sentences coincides with the class of NPs that are presuppositional. Therefore, the definiteness effect in existential sentences can be captured by positing a felicity condition that requires the NP associate to be non-presuppositional. This ban on presuppositional NPs is also in line with the fact that the existential sentence is an assertion of existence and hence incompatible with a presupposition of existence.

This approach is in line with the semantics of the associate NP that I will propose here, in that the class of NPs that denote the characteristic function of a set seems to coincide with the class that is not presuppositional. One problem for a purely presuppositional approach to the strong-weak distinction in existential sentences, however, is the existence of cases, like 108, in which a "presuppositional" determiner is felicitous in this context. For this

reason, an approach that takes the definiteness effect to be a result not of a pragmatic condition on the presuppositional qualities of NP directly but which is derived from restrictions that exist on its semantic form may be preferred. Such cases will be discussed later on in this chapter.

108. There is every kind of wine at this shop.

Returning to the representation of the existential import of the *there*-sentence, the feature-placing account does not posit an existential quantifier at any stage of the derivation to account for its existential import. This differentiates the feature-placing account of the indefinite NP in an existential there-sentence from Heim's (1982) account of indefinites. She argues there that indefinites lack quantificational force. Instead, she argues that they introduce a free variable into the semantic representation that is then either bound by higher quantifiers, choice functions or by the operation of Existential Closure, which would then constitute the source of the existential interpretation of the existential sentence. Nevertheless, by the end of the derivation, on Heim's account, an existential quantifier binds the variable contributed by the indefinite.

The property theory of indefinites

Alongside Heim's view of indefinites, a number of other researchers have investigated the possibility that indefinites are ambiguous. Some, notably Partee (1987), argue that indefinites have both quantificational and non-quantificational (i.e. set) denotations. Other proposals concerning the denotation of indefinites are to be found in the literature:

Carlson (1977), for example, thought that the bare plural was unambiguously kind-denoting, and that its existential interpretation was derived. Of course, he required another interpretation for singular indefinites.

Chierchia & Turner (1988) introduced the property theory of indefinites, and in recent years a number of researchers have assigned the associate NP a property-, or set-denoting interpretation (cf. van Geenhoven, 1998; Landmann, 2004; McNally, 1998a). As discussed in Part One, there are good reasons to take the associate NP to be non-quantificational, and the feature-placing approach assumes it is such. That said, which non-quantificational interpretation should be assigned to this nominal? Does it denote a kind, a set, or something else entirely?

One factor that needs to be taken into account here is that the definiteness effects in *there*-sentences preclude not only definite NPs, but also strong quantificational NPs such as *most* and *every*. Is it possible to have a single condition that accounts for both the restriction to non-referential NPs and the restriction against strong-quantificational NPs? According to many proponents of the property-theory of indefinites, the answer is: No. However, I believe that a unified account of the definiteness effects in *there*-sentences is possible under the feature-placing analysis, with the restriction against both definite and strong quantificational NPs boiling down ultimately to the consequences of the associate's denotation, that of the characteristic function of a set.

What interpretation we should assign to the associate NP in a *there*-sentence? The answer to this question depends in part on what you assume to be the sentence type's basic structure: If you assume the *there*-sentence is subject-predicate in form and the associate is the predicate, then you have to identify a subject. If you assume it is a free variable, what is its predicate? The approach that will be outlined here, of course, does not take the *there*-sentence to be subject-predicate in form, and for this reason the problem above does not arise—though others do. In the account proposed here, the associate is a *feature* in a feature-placing sentence, and the claim is that its denotation is the characteristic function of a set. In the following section I provide the background against which this claim was derived.

The Interpretation of the Associate NP

Strawson (1959): Features and the naming game

In his discussion of feature-placing, Strawson (1959) argues that there is a difference between features and what he calls 'basic particulars', the usual items picked out by an indefinite noun phrase. He gets at this difference by describing a language game that feature-placing sentences are particularly well suited for, the naming game:

> Playing the naming game may be compared with one of the earliest things which children do with language – when they utter the general name for a kind of thing in the presence of a thing of that kind, saying 'duck' when there is a duck, 'ball' when there is a ball, etc . . . But now what of the criteria of reidentification? Does the concept of the cat-feature include a basis for this? If so, what is the substance of the phrase 'a basis for criteria'? Is it not merely an

> attempt to persuade us that there is a difference, where there is none, between the concept of the cat-feature and the sortal universal, cat? This is the crucial question. I think the answer to it is as follows. The concept of cat-feature does indeed provide a basis for the idea of reidentification of particular cats. For that concept includes the idea of a characteristic shape, of a characteristic pattern for the occupation of space; and this idea leads naturally enough to that of a continuous path traced through space and time by such a characteristic pattern; and this idea in its turn provides the core of the idea of particular-identity for basic particulars. But this is not to say that the possession of the concept of the cat-feature entails the possession of this idea. Operating with the idea of reidentifiable particular cats, we distinguish between the case in which a particular cat appears, departs and reappears, and the case in which a particular cat appears and departs and a different cat appears. But one could play the naming game without making this distinction. Someone playing the naming game can correctly say 'More cat' or 'Cat again' in both cases; but someone operating with the idea of particular cats would be in error if he said 'Another cat' in the first case or 'The same cat again' in the second. The decisive conceptual step to cat-particulars is taken when the case of 'more cat' or 'cat again' is subdivided into the case of 'another cat' and the case of 'the same cat again' (Strawson, 1959, pp. 206-208).

I include the lengthy quote above in part because it highlights the kind-like interpretation of features that I will return to presently. In addition, in the passage Strawson advocates a distinction between feature-denoting NPs and "ordinary" indefinites, something that is fundamental to the feature-placing account I am formalizing in this research.

When we use a *there*-sentence like *there is a virus that causes aids*, for example, it is not in point *which* virus it is that makes a truthful substitution, as in an ordinary non-specific

indefinite. In this example it is also *unknown* which virus or viruses cause the disease—only that the disease has the characteristic behavior of a viral infection or that the patient manifests its symptoms. Feature NPs, if we take Strawson's description above as a starting point, encapsulate the characteristic features of an entity that, once added to the discourse, provides the basis for future identification or reidentification of individuals of that kind.

That the characteristic function of a set is the best formalization of the interpretation for features described in this passage is argued for in the next sections. Let us begin by ruling out some related interpretations—a kind interpretation and a property, or set-denoting interpretation.

Does the Associate Denote a Kind?

One possible way to formalize the notion of feature is as a kind-denoting expression. As suggested in the passage above, like kinds, features need to be more general than particulars, that is, they don't refer to particular individuals, yet include the characteristic qualities of any item of that kind. Carlson (1977), in his work on the interpretation of bare plurals, spends a great deal of time discussing what the proper denotation of kind words might be, and concludes that kinds are best represented as individuals. In order to advance his thesis about kinds as individuals, which rests upon the similarity of bare plurals to proper names, he invokes the following scenario. I include it as a fruitful juxtaposition with the Strawson passage quoted above:

> You are on a picnic and have begun to eat. Out of the bushes pops a ground squirrel, which you throw a scrap of food to. It eats and disappears into the bushes. A few moments later, from another direction, a ground squirrel pops out of the bushes. Since all ground squirrels look pretty much alike (at least to me), there is no way of telling whether or not this second appearance of a ground squirrel is another one, or the same as before. In any event, you feed the second one (the first one?), and it scampers off into the bushes. This process is repeated several times, with only one ground squirrel appearing at a given time, and all appearances seeming quite alike. At this point, you might become curious as to whether or not you have been witnessing appearances of the same ground squirrel or of several. (At this point, I was visited simultaneously by three ground squirrels which, for some odd reason, I found to be quite relieving.) But continued appearances, all looking alike, and only one appearance of a ground squirrel being seen at a given time, would eventually lead one to think of these appearances as being appearances of the same animal. One might even name the animal *Dale*. And whenever you return to that spot to picnic, you are visited by what appears to be the same ground squirrel. Should this go on for a long enough period of time, certainly all doubt would disappear about the relative continuity of these appearances, and one would think of this one particular animal, which lives in that area and visits you whenever you visit the area, as being and individual, Dale. Now WHAT was it that was named Dale? Clearly it is not any particular appearance that bears that name; it is something instead that 'stands behind' these different appearances of the SAME THING. (Carlson, 1977, p. 67)

Notice the similarity of the two passages. Carlson asks, are these two appearances of the same squirrel (or cat, in Strawson's case) or of different ones? It's hard to say. Carlson supposes that there are situations where you have seen multiple *different* animals and in which you might say you saw *squirrels*—that is, there are appearances of individuals

(which might go by the names *Dale*, or *Merle*)—but also that there are appearances of kinds, which according to Carlson, go by the name *squirrels*. Interestingly, the Strawson passage concentrates on a situation, playing the naming game, where a bare plural is not necessary for invoking a similar interpretation. In the context of the naming game, a speaker in the presence of a squirrel might simply say *squirrel* in that case, and for subsequent cases, instead of *squirrels*. This kind of naming-game is accomplished by a feature-denoting expression, I argue, which requires a different interpretation from that proposed for the bare plural in Carlson (1977). Namely, we do not want the associate to denote an individual—even if this individual is a kind. Some reasons for this are given in the next section.

Heim (1987): Questions from existential *there*-sentences

Based on the ungrammaticality of personal pronouns in existential *there*-sentences, as exemplified in 109, Heim (1987) proposes that individual variables count as strong NPs (i.e. they trigger the definiteness effect) and proposes that the constraint in 110 is operative in existential sentences (where she represents pronouns as bound variables):

109. *There is you in the garden.

110. *There-be x, when x is an individual variable.

The constraint proposed by Heim is compatible in gross with the account of features that has been developed here, in that features are expressions that may not denote individuals (or individual variables). Her supporting evidence therefore is also relevant to the current account. This evidence concerns *wh*-questions, constructions that involve movement of

the *wh*-operator or entire *wh*-phrase; this movement has been held to leave behind a variable in the position of the moved element at some level of representation. Assuming that individual variables are excluded from *there*-contexts, how can we explain the grammaticality of the following example? (Heim discusses the full range of *wh*-phrases; I will limit my discussion to *what* for brevity.)

111. What is there in Austin?

Of the *wh*-phrases one might consider, *what* is certainly likely to involve an individual variable in the position of the moved element. After all, this is the case in other *what*-questions, like *what are you holding?* The content of such a question might be represented as asking for the *x* such that *you are holding x*. Is this the case for the *what*-question in the existential case above? Heim suggests that it is not, and I agree. There are, I think, two ways one might take the question in 111. On one interpretation, which I will call the feature-placing interpretation, a suitable answer might be that given in 112:

112. There are lots of restaurants and places to hear live music.

That is, a person using the question above need not be looking for a particular item(s). After all, there are many things in Austin, so the person using 111 is probably not looking for *the thing that there is in Austin*, or even *all the things there are in Austin*. Instead, one way of taking 111 is that the questioner is interested in the *kinds of things* that there are in Austin. For this reason, Heim argues that in sentences like 111 *what* should not be

analyzed as *which x* but as *such an x*, that is, the variable left behind would not be ranging over individuals but over kinds. Following the treatment of *such* by Carlson (1977), she suggests that *such an N* is interpreted in *wh*-questions in there-sentences as *of kind x*. That is, the existential sentence *what is there in Austin* corresponds to something like:

113. There are/is such stuff/such things/such a thing in Austin.

There is another possible way to take the question in 111, however, and that is as a request for specific items that can be found in Austin. I'll call that the list-interpretation. Taken in that way, an answer to the question "*what is there in Austin*?" could be a list: *There's that movie theater where they let you bring in beer, the restaurant where we met your cousin, Bob's Barbeque, etc*. I will discuss the list-reading in detail later in the chapter. For now, notice the following: Unlike the interpretation in 113, the answer that corresponds to a list-reading of the *there*-sentence has as its members definite NPs whose existence in the world of discourse is taken for granted. Thus, in the case of the list-interpretation of *what*-question from *there*-sentences, strong NPs are licensed. Note, for example, that you can use personal pronouns in the list-answer: A: *Who can we get to clean the bathroom?* B: *Well, there's YOU, for example*. On the list-interpretation of the question *what is there in Austin*, the hearer takes *what* to have its usual interpretation—it ranges over individuals, in this case over individuals that satisfy the characteristic function.

The interpretation of *wh*-questions on the feature-placing interpretation in *there*-sentences provides evidence in support of an analysis that takes the definiteness effect to be explained as a semantic restriction against expressions that introduce individuals in the associate NP position of existential sentences. Importantly, it also highlights the kind-like behavior and interpretation of the associate NP. Of course, the present account does not take the associate to be kind-denoting in the sense of Carlson (1977), but instead attributes the kind-like interpretation to the characteristic function of a set.

One-anaphora

As discussed in Heim (1987), bound variable anaphora is not allowed in existential sentences. One kind of anaphora that is possible in these sentences, however, is *one*-anaphora. As is well known, *one*-anaphora does not connect two co-referential NPs. Instead, *one*-anaphora requires that the restriction on the two noun heads (and optionally their modifiers) be the same while the item that substitutes for the variable it restricts may be different. For example:

114. Mary has a green shirt and Jane has one, too.

Here, *one* substitutes for the NP and not the entire DP, that is, Jane is understood to have a shirt *of the same kind*, namely a green one, and not necessarily *the same shirt* as Mary. As mentioned, unlike bound variable anaphora, *one*-anaphora is possible in existential sentences, as illustrated in the examples below:

115. There is a man asleep and there is one sick, too.

116. *There is a man asleep and there is he/him sick, too.

The fact that *one*-anaphora is available in *there*-sentences while other pronominal anaphora is not provides additional support for the idea that the associate NP must be an expression that does not denote an individual but that nonetheless provides enough information to license one-anaphora, enough to distinguish tokens from non-tokens of a given set. Once again, this fact seems to fit nicely with the proposed interpretation as the characteristic function of a set, precisely the kind of entity that sorts members from non-members of a given set.

Carlson (1977): On other possible denotations for kinds

Although Carlson (1977) ultimately argues that kinds should be represented as individuals, he discusses some other possibilities: Kinds as intensions of sets, and kinds as sets. Both of these are varieties of a non-quantificational interpretation (which he argues for on the basis of the collective interpretation of the bare plural, among other things). A non-quantificational interpretation is also what we are also looking for in an interpretation for the associate NP, as discussed in chapter one.

Carlson argues that while generating the correct interpretation, representing kinds as intensions of sets makes the wrong predictions with respect to the interpretation of bare plurals in extensional contexts. He argues: If the NP *dogs* always denoted the intension of a set, why is the existential interpretation found in a sentence like *dogs are barking* and the universal interpretation in *dogs are mammals*? This question highlights a preoccupation of Carlson's, namely that the bare plural be provided with a unified

interpretation which can be integrated into a Montague-style framework where NPs always denote a set of sets. Although he does not posit a lexical ambiguity in the bare plural, however, the relation R^{14}, which applies to any predicate that takes stages as arguments, simply moves the ambiguity to another location—the predicate itself. That is, there are predicates that take individuals and those that take stages and those that take both. Carlson wants to ward against the predicate *ran* in *dogs ran* being different from the predicate *ran* in *John ran*. However, to distinguish between cases in which the bare plural is in fact ambiguous, he needs two different predicates as well.

In his discussion of the possibility of treating kinds as sets of sets, which he assimilates to an interpretation as a characteristic function of a set. Yet, in his discussion of this interpretation, it is clear that he takes it to denote a set—what the characteristic function generates, and not the function itself (he is concerned about the set being different under different circumstances and at different times). This point is important to the current discussion, of course, because it is precisely the characteristic function of a set that I take to be the denotation of the associate.

What I take away from Carlson's discussion is the following: He acknowledges that there are other ways of capturing the interpretation of the bare plural, but these are not compatible with his aim of providing a unified interpretation within a Montague framework. Given the fact that I take indefinites to be ambiguous anyway, as do many

[14] Cf. Carlson (1977, p. 76): "In order to say what we want here, a relation R is introduced ('realizes'). This two-place, asymmetric, irreflexive transitive relation holds between stages and individuals. A formula like R(a,b) means that a is a stage of b."

authors following Carlson (1977), I see his discussion as support for the idea that there are kind-like NPs whose interpretation is captured by the characteristic function of a set. Certain kinds may denote individuals, but there are related NP-interpretations, such as that which surfaces in the *there*-sentence, that are better characterized as the characteristic function of a set.

The associate NP is not set-denoting—but has a related interpretation

Having claimed that the associate NP denotes the characteristic function of a set, it is necessary to distinguish this view from similar approaches in which it has been considered to be a set-denoting expression, namely to distinguish it from the property-theory of indefinites. Although their analyses differ, Higginbotham (1981), McNally (1998a), and Landman (2004), for example, all make the case for the associate being treated as a set-denoting expression. (They differ as to whether they also take the associate to be a predicate expression.) To show that the NP we are dealing with is different from ordinary set-denoting NPs it is instructive to look at some tests for expression identity. There are a number of such tests that show that the associate NP does not meet the criteria of identity for deletion with a predicate NP.

First, there are identity conditions between the variables bound by the *wh*-operator in a relative clause taking a *wh*-expression as its head. These identity conditions, as shown in the examples below, are not met in the case of a predicate expression and associate NP 117, but which are met if both variables are in the associate NP position of an existential sentence 118 or are both NP predicates 119.

(In the cases below, imagine that suitable answers to these questions/values for the variables could be: *Sleazy lawyers*/*A sleazy lawyer*)

117. *What$_i$ is there x_i in Dallas that Max is x_i?

118. What$_i$ is there x_i in Dallas that there also x_i is in Chicago?

119. What$_i$ is John x_i that Max also is x_i?

A similar point is made with the across the board *wh*-movement examples in 120-122. These also show that the variables bound in by the *wh*-phrase in the case of 120 do not meet the required criterion of identity.

120. *I want to know what$_i$ there is x_i in Dallas and Max is x_i.

121. I want to know what$_i$ John is x_i and Max is x_i.

122. I want to know what$_i$ you think there is x_i in Dallas and you don't think there is x_i in Chicago.

Finally, the interpretation of ellipsis requires expression identity. It seems that here, too, these conditions are not met in the case of a set-denoting NP and the NP associate of an existential sentence.

123. *There's a lawyer in Dallas and Fred isn't.

124. There's a lawyer in Dallas and in Austin.

125. John is a lawyer and Fred isn't.

It is interesting to note that even a noun phrase complement to a perception verb, presumably the subject of a small clause, does not meet the criteria of identity required for ellipsis.

126. John saw a man in the garden but there wasn't *(one).

The data presented above, while they do not prove that the associate NP denotes the characteristic function of a set, do make a strong case for the argument that the associate NP is not interpreted in the same way as ordinary set-denoting NP predicates[15].

Some data in support of the current approach

Abstract, implausible entities and so-called trouser-words

An interesting prediction of the theory proposed here that is borne out is that the interpretation of the NP in *there*-sentences is different from that of the subject in the related copular sentences. This can be seen though examples like the following:

127. There is wisdom in what you say

[15] As an aside, note that as mentioned above *one*-anaphora does not require coreference, just that the restriction of the nominal elements be the same. While it may refer to the same item, one-anaphora allows that the item substituted for by *one* be different. Interestingly the examples below show that *one*-anaphora, while less felicitous in the case of a set-denoting predicate NP and the associate NP in an existential sentence, is possible. This suggests that while the expressions in each case are non-identical, their contribution to the sentence is similar enough to allow *one*-anaphora.

iv. ?There is a lawyer in Dallas and Max is one, too.
v. There is a lawyer in Dallas and there's one in Austin, too.
vi. Max is a lawyer and John is one, too.

128. *Wisdom is in what you say.

129. *There is four between 3 and 5.

130. Four is between three and five.

What are the differences in the interpretations of the NPs in 127-130 such that a) an abstract noun phrase cannot stand in the subject position of a copular sentence with a locative PP predicate but it can in the *there*-sentence with a locative PP placer and b) a noun phrase denoting a number cannot stand in the associate position of a *there*-sentence but it can stand as the subject of a copular sentence with a locative PP predicate?

Given the feature-placing framework outlined above for the interpretation of *there*-sentences, an explanation is available for these data. In 127, the NP *wisdom* denotes the characteristic function of a set—a property-like interpretation—and it does not have a predication relationship with another expression in the sentence. In the copular sentence in 128, the NP *wisdom* denotes a variable (or whatever you take indefinite NPs normally to denote), and there *is* a predication relationship between the locative PP *in what you say* and the NP *wisdom*. Why is the copular sentence ungrammatical while the *there*-sentence is not? Well, for one thing, the subject position in a copular sentence and the associate position in an existential sentence are being argued to require different kinds of expressions. But this is not enough. Wisdom can clearly have an interpretation that is compatible with the requirements of the subject position in a copular sentence (cf. *Wisdom is hard to come by these days*). The problem seems to be that whatever wisdom denotes, it cannot literally *be* in what you say. That is, there is a semantic violation

against using *wisdom* to denote an entity that has location. But then what about the feature-placing sentence with *wisdom* as the associate? Why does that sentence work?

The statement of the two sentences' truth conditions can help explain their differing status. In the copular sentence, we get truth just in case the thing denoted by the NP *wisdom* is a member of the set denoted by the PP *in what you say*. The nature of the ungrammaticality of a sentence like *wisdom is in what you say* could be stated as follows: an abstract concept like wisdom does not manifest itself as an individual in any situation, but only as a property of other things, and is thus unlikely to itself be found anywhere. On the feature-placing approach to *there*-sentences, on the other hand, the truth conditions do not mention wisdom as an individual. An as mentioned above, no predication relationship is instantiated between the two expressions *wisdom* and *in what you say* in the sentence *there is wisdom in what you say*. The truth conditions of the sentence *there is wisdom in what you say* are that the sentence is true just in case there is a successful satisfying of the characteristic function of the property *wisdom* at the location denoted by the placer, *in what you say*. The fact that no individual corresponding to the NP wisdom is mentioned, only that a successful satisfying has occurred, succeeds in distinguishing between the sentences in 127 and 128.

What about sentences 129-130? If we take the expression *four* to function like a proper name (cf. Carnap, 1950; Frege, 1884), it will be barred from the *there*-sentence for the same reason that proper names are—recall the definiteness effects discussed above. This

is not the case in the copular sentence, which does not prohibit proper names from subject position (e.g. *John is in the garden*).

This account also makes an interesting contribution to a debate that has been going on in the linguistic-philosophical literature for some time as a result of remarks in Chomsky's *Lectures on Government and Binding* (Chomsky, 1981; Higginbotham, 1981).

> If I say, "the flaw in the argument is obvious, but it escaped John's attention," I am not committed to the absurd view that among the things in the world are flaws, one of them in the argument in question. Nevertheless, the NP *the flaw in the argument* behaves in all relevant respects in the manner of the truly referential expression *the coat in the closet*. (Chomsky 1981: 324)

Wisdom, then, is like other noun phrases such as *flaws* and *problems* in being able to hold of items but being of dubious existence as objects in the world (some of the below examples are due orignally to Milsark, 1974).

131. There are flaws in the argument.

132. #Flaws are in the argument.

133. There are problems in the plan.

134. #Problems are in the plan.

135. There are holes in the bucket.

136. #Holes are in the bucket.

137. There is space in the room.

138. #Space is in the room.

139. There was a fire on Mass. Ave.

140. #A fire was on Mass. Ave.

141. There is a Santa Claus

142. #A Santa Claus is.

143. There is much interest in mathematics these days.

144. #Much interest is in mathematics these days.

Higginbotham (1981) discusses similar cases in the context of a discussion about the existence of implausible entities and responds with a suggestion that these noun phrases function more like attributes than like the entity-denoting expressions we usually expect. On his account, abstract noun phrases, and so-called trouser-words (cf. Austin, 1962) are different from normal noun phrases in that they contain an event position—that they are predicates of situations or events.

The feature-placing account can further Higginbotham's (1981) account and our understanding of these nominals in an interesting way. Like Higginbotham, I claim that the associate has a predicate-like interpretation, but argue that that it is interpreted as the characteristic function of a set. Like Higginbotham's attributive nominal, the associate NP's denotation would bar it from the subject position of a copular sentence. The feature-placing account also says something about why these nouns are licensed as associates although they are not acceptable subjects of locative predicates.

In an ordinary copular sentence like *a man is in the garden*, the noun phrase *a man* is the argument of the locative predicate *in the garden*. In order for the sentence to be true, on ordinary assumptions, the individual denoted by *a man* has to be a member of the set denoted by *in the garden*. In the case of a noun phrase like *wisdom*, *flaw*, or *problem*, this is complicated by the fact that these noun phrases do not denote individuals in the way that ordinary indefinites do—instead, they are more like predicates that apply to other entities that have the property of *being* flaws, wise, or problems. In a feature-placing sentence, however, the claim is that no predication relationship holds between the locative element and the associate NP. Instead, the locative *places* the features denoted by the associate NP. In order for the sentence to be true, the characteristic function of the set in question must be satisfied at the location denoted by the placer. Thus, flaws are properties of items that can be the truth-makers of an existential *there*-sentence though they are not the argument of any function.

In a sentence like *there is a Santa Claus*, a different situation obtains. Notice that the sentence is paraphrasable as "there is someone falling under the concept Santa Claus." If we add a coda to the example, as in *there is a Santa Claus in the garden* the possibility of there being more than one Santa Claus is highlighted. The copular sentence *Santa Claus is*, to the extent it is grammatical, means something different: "Santa Claus exists." The ungrammatical **a Santa Claus is* shows the impossibility of combining both these interpretations: The BE of existence, like the verb *exist*, predicates a property of an individual. The *there*-sentence does not, and so the indefinite NP with a proper name becomes possible—for reasons that will be discussed in more detail below, where the

difference between BE and exist is discussed, and where the BE of existence is distinguished from the copula.

What is the function of the plural in a *there*-sentence?

One of the often-noted properties of *there*-sentences (and target of many complaints by English teachers) is that plural agreement with the associate is not always accomplished. The following facts may suggest that more is at issue here than the fact that the nominal element appears post-verbally. Notice the difference in interpretation 145 and 146. In 145, there is no implicature that there is any more than one Zeus, whereas 146 implies that there is.

145. There is a Zeus.

146. There is a Zeus in the garden.

In the sentence in 147, on the other hand, although it contains a plural NP, requires only one instance in order to satisfy its truth conditions. This same fact is perhaps more easily seen in the examples in 148 and 149.

147. There are wombats.

148. There are even prime numbers.

149. There are even prime numbers between one and three.

When plural morphology is present in a *there*-sentence without a coda as in 148 truth requires the existence of one instance of the kind *even prime number* (i.e., the number 2

will be enough satisfy the truth conditions)[16]. The plural morphology in 149, on the other hand seems to require the existence of *more than one even prime number between one and three*. Therefore, 149 is false, because only one such even prime exists: 2.

At first blush it seems that we are dealing here with an ambiguity in the bare plural—if in 148 it denotes a kind and in 149 we have 'true' plural morphology, the facts might find an explanation: Kinds require only one individual to be instantiated. This approach, however, not only is bad for Carlson's original idea that the bare plural should have a unified interpretation and denote stages of individuals in the context of the *there*-sentence, where individual-level predicates are banned, but is bad for the account under consideration. How is the assertion of existence accomplished in a feature-placing sentence if a bare plural combines with a locative?

Fortunately, the facts find another explanation that does not require a proliferation of NP-denotations in the *there*-sentence. This explanation requires us to look again both at the default domain of existence interpreted in *there*-sentences with no coda and the way quantification works in feature-placing. Let's begin with the cases in 145-146 that contain a singular noun phrase. Why does the sentence in 145 imply there is only one Zeus, whereas the sentence in 146 implies there is more than one? Like other quantifiers in *there*-sentences, I argue that *a* counts successful satisfying-events of the characteristic function denoted by the associate. Its meaning, as argued in Perlmutter (1970) is 'one'. In

[16] In requiring a single instance of the kind to secure truth in *there*-sentences with bare plurals, I am following Russell (1924) and not Moore (1936). He claims that even in these cases two instances are required for truth.

145, the domain of evaluation is the world under consideration. The sentence can be taken in two ways. It can be taken to assert that in this world there is one item that satisfies the characteristic function of Zeus—on this interpretation *Zeus* functions not as a name but as a concept-word, as it would in a sentence like *there is a dinosaur*. *A Zeus* may also be taken with Zeus as a proper name, which with an indefinite article invokes the "name with multiple bearers" interpretation. On that interpretation we have something like *there is someone named Zeus in the garden*. In 146, it is also the case that the domain is much smaller—in the garden. On the concept interpretation in such a restricted domain, it is likely that the implication arises that there is more than one thing that satisfies the characteristic function *elsewhere*—otherwise the more general coda-less expression could have been used. What's more, why would someone use the sentence *there is a Zeus in the garden* if they meant *Zeus is in the garden*? That is, an indefinite is an unlikely choice if you mean to use the name of an individual to assert his or her existence. The implicature that more than one Zeus exist in 146 results from an attempt to find a situation where the use of such a sentence accomplishes its purpose, and given the existence of the related sentence *Zeus is in the garden*, the meaning that emerges in 146 is not that Zeus is in the garden, but the name with multiple bearers interpretation, that someone going by the name Zeus (and their may be more than one) is there.

The plural examples in 147-149 also have an explanation related to the interpretation of the associate in a feature-placing sentence. Unlike the indefinite article, which functions as a quantifier, I claim that number—realized here as the plural—is not interpreted in the *there*-sentence. In a sentence like 148, the domain is this world, and without a

quantificational determiner the requirement is that there must be one satisfaction of the characteristic function for truth. In 150, as in 149 the implicature that there is more than one satisfaction arises as a result of the restricted domain. Furthermore, the plural interpretation in 150 is very 'weak'. In cases less clear than the cases with numerals above, it is unclear whether one or more is necessary for truth. For example:

150. There are ivory-billed woodpeckers in Arkansas.

151. #Well, there's one, anyway.

The follow up in 151 is only marginally infelicitous, because the implication of a plurality is quite weak. The weakness of the plural in these cases is also seen in the lack of agreement that often occurs in *there*-sentences with a plural associate. It is much more felicitous to say *there's rats in this restaurant* than *rats is in this restaurant*.

Quantificational NPs in there*-sentences*

Another ingredient to the definiteness effects in *there*-sentences is the ban against certain quantificational NPs. Milsark (1974) observed that cardinal and strong quantificational NPs differ in their ability to be licensed in an existential *there*-sentence, cardinal quantifiers such as *few*, *three* and *many* being licensed while strong quantifiers such as *every*, *each* and *most* are not. Examples like 154, however, which have been noted in the literature (cf. McNally, 1998a), show that the ban on strong quantificational NPs is not

absolute—if a *kind of* NP is being quantified over instead of individuals, it is grammatical. How can this be explained?

152. There are three/few/many/several/some cats in the garden.

153. *There is/are most/every/each cat(s) in the garden.

154. There is every kind of wine at this shop.

In this section I will address the examples in 152-154 and provide an account of quantification within the feature-placing approach. I will also discuss sentences like 155-156. What makes 155, another instance of the strong quantifier *every* that is licensed in *there*-sentences, different from 156, which contains the strong quantifier *each*?

155. There is every reason to believe you will finish your thesis.

156. *There is each reason to believe you will finish your thesis.

Current approaches

As mentioned above, accounts of the definiteness effects in *there*-sentences have come in two forms, semantic and pragmatic. There are also hybrid approaches that take care of referential NPs and quantificational ones differently. McNally (1998a) proposes such an approach. On her approach strong quantificational NPs only work if the type-shifting operation BE, when applied to the NP associate, yields a well-defined property-type interpretation, where well-defined means “interesting from a communicative perspective”

(McNally, 1998a, pp. 16-17). Quantifiers that are relational are not compatible with an interpretation as a one-place predicate, on this account.[17].

Keenan proposes a strictly semantic account of the ungrammaticality of strong quantifiers in the *there*-sentence, which as I understand it rules out quantifiers that require evaluation of two sets in order to be judged true or false (the details are much more involved). *Every, most* and *each* would be ruled out on this account because in a sentence like *every cat meowed* you have to look both at the set of meowing things and the set of cats to see whether it is true or false, whereas in a sentence like *no cat meowed* you can simply check the set of meowing things.

The account proposed here will be more semantic than pragmatic—that is, the strong quantifiers will be ruled out based on their incompatibility with the interpretation of *there*-sentences and not for reasons of communicative efficacy or presupposition. Of course, the fact is that most of the quantifiers that are ruled out carry presuppositions of existence, which for reasons discussed above are incompatible with the primary function of the *there*-sentence, asserting the existence of or adding an item to the discourse.

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[17] McNally states this restriction on the output of the type-shifting operation BE as follows: "Notably, those NPs denoting proportional quantifiers, except for the filters with singleton generator sets (what Dowty, Wall, and Peters 1981 termed the individual sublimations), will lack well-defined property-type interpretations because those quantifiers will never contain the singleton sets that BE calls for (see B. H. Partee, 1987, p. 127)" (McNally, 1998a, pp. 16-17). I would like to point out that although McNally claims this account is semantic, it seems to be ultimately pragmatic even though it differs from a pragmatic account such as Zucchi (1995) in not invoking presupposition as a unified explanation of the definiteness effects.

Quantification and feature-placing

To begin, it is necessary to explain how quantification is accomplished within the feature-placing approach—that is, how quantifiers work when combined with a characteristic function of a set. In a feature-placing sentence, the contribution of a cardinal (or weak) quantifier, such as *three* is to indicate *how many successful satisfyings of the membership conditions denoted by the NP must occur in the location denoted by the placer in order to satisfy the truth conditions of the sentence*, i.e., *there are three cats in the garden* is true only if there occur three satisfyings of the characteristic function of cats in the garden. Seen in this way, the function of a quantificational term in a feature-placing sentence, instead of counting entities, is counting *satisfyings at locations*. Like other quantifiers, then, the quantifiers in *there*-sentences count, but what they count is different. In a *there*-sentence containing a quantified NP, the sentence is true if and only if there are Q satisfyings at the location. Satisfyings are represented as the positive output of the characteristic function denoted by the associate NP: ordered pairs of items and "1" or "yes" at the location denoted by the placer. In the sentence *there are three cats in the garden*, for example, 3 pairs such as <a, 1>, <b, 1>, <c, 1> in the garden are enough for truth.

157. There are three cats in the garden.

$((\text{THREE}_q)(\text{CAT}_{cf}(x)))\ (\text{LOC}_{\text{in the garden}}) = 1$ iff there are three satisfyings, <x,1>, <y,1>, <z,1>, of the characteristic function of CATS at the location IN THE GARDEN.

Ruling out strong quantifiers

The ungrammaticality of strong quantifiers such as *every*, *most*, *each* and *all* in the *there*-sentence finds an explanation related to this particular interpretation of quantifiers in feature-placing terms. In a feature-placing sentence cardinal quantification is cashed in as the counting of successful satisfyings at a location. Strong quantifiers such as *every*, *most* and *all*, however, require more than just counting. They require exhaustion of the set in question in order to achieve their interpretation (cf. Robert Fiengo, 2007, pp. 107-108). Take, as an example, the strong quantifier *every*. *Every*, like *each* and *all*, has universal force: The domain to which it is applied must be exhausted and each of its members must be a member of the set in question for truth. Thus, unlike the cardinal quantifiers, like *some*, *many* and *few*, strong quantifiers require verification that the entire domain of the set in question is exhausted. This, of course, is what makes the meaning of these universal quantifiers irreducible to a conjunction of the elements in the set—the additional information that the set has been exhausted. For this it is necessary not only to make reference to the set in question but also to rule out possible counterexamples from other sets.

This requirement for exhaustion is at cross-purposes with the contribution of the *there*-sentence. In a *there*-sentence quantifiers do not range over a domain of individuals, which may be exhausted, but over satisfyings at locations. What does it mean to exhaust satisfyings? It is unclear that there *is* a domain that consists of satisfyings. Thus, it seems that in the context of feature-placing exhaustion is otiose, and therefore strong quantifiers are ungrammatical.

It has been pointed out to me[18], however, that even quantifiers like *no* and *exactly three*, which are grammatical in *there*-sentences, can be considered to be exhaustive. To understand why these work and quantifiers like *most*, *every* and *all* do not, consider first the fact that *exactly three*, unlike *most*, *every* and *all*, can be unpacked as a conjunction of non-exhaustive quantifiers. The sentence *there are exactly three men in the garden*, for example, can be unpacked as *there are three and not more than three men in the garden*, and, unlike *exactly three*, *not more than three* is not exhaustive. The sentence is interpreted as: *[[there are three men in the garden] & not [there are more than three men in the garden]]]*. The quantifier *no*, on the other hand, is similar to the quantifiers *a* and *one*: Whereas *a* and *one* require one satisfying for truth, *no* requires zero satisfyings at the location in question for truth. Thus, *no*, like *exactly three*, does not require exhaustion, only counting. The generalization required to capture the restrictions on quantifiers in associate position, then, is that they may never be exhaustive.

Every kind

The account of strong quantifiers above requires further elaboration to account for the grammaticality of strong quantifiers with *kind of*-NPs, such as 154. Notice that to the extent that the NP in 153 can be interpreted as *every kind of cat*, it is also felicitous. How do these work in the feature-placing approach?

First, sentences like *there is every kind of bird in the garden* can be used in a hyperbolic way to mean something like "there are many kinds of birds in the garden". On this use they can get the same explanation as Fiengo (2007) gives for sentences like *there is every*

[18] I'd like to thank William McClure for bringing this to my attention.

reason to believe, which will be discussed in the next section. On that account the sentence means roughly, "there is no reason not to believe," essentially, it asserts that there is no obvious counterexample to the statement that there is every reason to believe. For *there is every kind of bird in the garden* taken this way it means roughly, *there is no kind of bird that is not in the garden*, or there is no obvious counterexample to the claim that every kind of bird is in the garden. I think this is often how we use such sentences.

But why can you not say *there is every kind in the garden*, though you can say *there is every kind of bird*? What is the function of the word *kind* in these associate expressions? First let me bring your attention to the fact that while the associate NP as a whole must be indefinite, it may contain subparts that are definite. For example:

158. There is a friend of the mayor in the garden.

159. There is a friend of John's in the garden.
(cf. *There is John's friend in the garden.)

Despite the fact that these sentences contain a subpart that is definite, their overall specification is as an indefinite NP and they are grammatical in *there*-sentences. This can even be the case when the DP is headed by the definite article, as in the examples below:

160. There is the cutest puppy in the window. (cf. #No it's not.)

161. There is the portrait of a lady on the wall. (cf. Robert Fiengo, 1987)
(≠There is a lady such that there is the portrait of her on the wall.)

The first is an example of what Holmback called the *presentative superlative*. It has superlative morphology but its meaning is indefinite, something like "there is a very cute puppy in the window"—and it does not require uniqueness. The second shows that at times the indefiniteness of the embedded NP is enough to make the entire NP indefinite. Notice that you cannot say **there is the portrait of Queen Victoria on the wall*. Like the superlative example, in the example above the does not contribute a uniqueness requirement to the semantics of the NP associate.

Coming back to the examples with *every kind*, note the synonymy of sentences like:

162. There is every kind of bird in the park.

163. There is a bird of every kind in the park.

164. There are birds of every kind in the park.

These sentences offer a clue into how these sentences can be accounted for in the current approach. The associate NP must always denote the characteristic function of a set and be indefinite, but may contain certain NPs that on their own would not be licensed in the *there*-sentence. For example, while the NP *John's friends* is barred from this position, as it is definite, the synonymous but differently structured NP *friends of John's* is not:

165. *There are John's friends at the party.

166. There are friends of John's at the party.

In a similar way, the sentences in 162-164 show how the *every kind of NP* structures can be licensed in the *there*-sentence although they appear at first glance to be definite: The NP that denotes a characteristic function is *birds of X*, which is bound by *every kind of bird*. That is, the quantifier *every* is actually associated with the sub-constituent, which as we have seen does not have a restriction against definite NPs. The entire NP, however, remains indefinite based on the contribution of the other part of the NP, *birds* or *bird*[19].

167. Every [birds of (kinds)]

This structure also provides an explanation for why the sentence *there is every kind in the park* is ungrammatical (unless you take there to be an elided NP whose head is taken for granted): there is nothing then to stop the NP from being definite, and so *there is every kind in the park* has the same status as other sentences that trigger definiteness effects. This also says something about why the sentences in169-170 are ungrammatical:

168. There is every kind of finch in the park.

169. *There is every kind of the finch in the park.

170. *There is every subspecies of the finch in the park.

[19] See Wilkinson (1995) for a discussion of *kind*-NPs like these and a proposal as to their formalization.

Note that *kind of NP* structures seem independently to require an indefinite, and structures with *subspecies of NP*, although marginally possible with definite subparts, sound degraded to my ears in comparison with the bare NP:

171. I like every/a kind of the finch.

172. ?The subspecies of the finch most affected by the eye infection was the house finch.

173. The subspecies of finch most affected by the eye infection was the house finch.

Either way, we can explain the infelicity of *subspecies of the NP* type NPs in *there*-sentences if we appeal to the structure mentioned above for *every kind of NP* structures:

174. Every [birds of (kinds)]

175. *Every [the finch of (subspecies)]

The NP *the finch* is making the entire NP definite and so subjecting it to the definiteness restrictions in *there*-sentences.

There is every reason to believe…

Following Fiengo (2007), I argue that while strong quantifiers all have universal force—they are exhaustive—they differ in *manner*. That is, although their truth conditions may

be the same, the procedure by which they are verified is different. So, while in a sentence like *every F is G* you find in the domain the set of Fs and see whether they are all G (*Totalizing*), for *each*, you take each member of the domain you ask whether it is F, and then whether it is G, until you've exhausted the domain (*Individualizing*). We can also use Fiengo's (2007) appeal to a difference in manner to account for the grammatical *you have every prospect of success* and the infelicitous *you have each prospect of success* and apply it to the cases in 155-156.

First, note that prospects, like reasons and other examples discussed in the previous chapter, are similar to so-called *trouser words*[20] in that it is their opposites—items from the complement set--that count in the calculation of truth of sentences containing them. Like flaws and problems, prospects of success and reasons to believe are not things in the world that are produced and counted in order to determine the truth of a sentence like *you have every prospect of success*. Instead, the sentence *you have every prospect of success* is true just in case there is no prospect of failure. Similarly, if I utter 155, what I mean is that there is no reason *not* to believe you will finish your thesis, and not that I have counted all the reasons to believe and they are all there. If you reply to 155 by saying *no, you forgot one* you have not understood my meaning. There is no expectation in 155 that every reason has been counted, only that there aren't any glaring exceptions. This provides a clue into the ungrammaticality of 156: *Each*, with an individualizing manner,

[20] Austin (1962, p. 70)says: "Next, 'real' is what we may call a trouser-word. It is usually thought, and I dare say usually rightly thought, that what one might call the affirmative use of a term is basic—that, to understand 'x,' we need to know what it is to be x, or to be an x, and that knowing this apprises us of what it is not to be x, not to be an x. But with 'real' (as we briefly noted earlier) it is the negative use that wears the trousers."

requires for truth the examination of each individual in the domain, not just the totality, and thus, unlike 155 with *every*, 156 cannot be taken to imply simply that there is no reason *not* to believe you will finish.

Definite NPs in there*-sentences*

So far it has been claimed that the definiteness effect in existential sentences can be accounted for via a ban on individual-denoting NPs and a ban on quantificational NPs that are exhaustive: In order to secure the existential import of the *there*-sentence, it is necessary to have the combination of a characteristic function and a location, and an individual-denoting NP does not satisfy this requirement. Despite this, and as has been noted in the literature (Abbott, 1997; Rando & Napoli, 1978; Gregory Ward & Birner, 1995), there are a number of cases of definite NPs that are felicitous in this position. This section will attempt to integrate certain of these cases into the current approach. Importantly, it will not address the so-called *list existentials*, another example where definite NPs are felicitous in this position. List-existentials will be discussed in the following section.

As noted in Rando & Napoli (1978), a number of definite NPs are licensed in existential sentences, including superlatives, relative NPs and NPs with demonstrative determiners. Milsark (1974) calls these noun phrases “crypto-indefinites”. Like Milsark, I take most of these to be indefinites-in-disguise. Some examples:

176. There’s the strangest bird on the lawn.

177. In England there was never the problem that there was in America.

178. There was never that problem in America

179. There was this crazy guy at the conference.

180. There were the same people at both conferences.

181. There was the usual crowd at the beach.

I will discuss these examples below. To begin, however, it is necessary to discuss the interpretation of definite descriptions more generally.

The interpretation of definite descriptions

The topic of the interpretation of definite descriptions has a rich history in the linguistics and philosophy literature, although the focus of attention in these two disciplines has been somewhat different (Barwise & Cooper, 1981; Donnellan, 1966; Edward L. Keenan & Stavi, 1986; Neale, 1990; Russell, 1905). The purpose of this section is to situate the present proposal within the tradition, taking into account the data in 176-182. One of the longstanding debates on the interpretation of definite description is whether or not they are ambiguous, or if they have only a single interpretation (i.e., if they may only be interpreted as predicates, or conversely, as object-referring). Authors such as Frege, Fiengo & May (1994) and Partee (1987), among many others, have argued that a definite description may have more than a single interpretation, and, in spite of the theoretical desirability of a unified interpretation for the definite determiner, it seems that the facts support its ambiguity.

Take the example in 182, which may express an identity statement. Under this interpretation, the definite description is an argument and refers to an individual in the selected world and that individual is asserted to be the same as the referent of *John*. Call the use of the definite description in the identity statement in 182 its *uniquely referring use*, following Strawson (1950).

182. John is the nicest guy around.

Following Fiengo & May (1994) and Partee (1987), among others, a definite description in predicate position may also (i.e., in addition to its uniquely referring use) denote a property. Fiengo & May (1994) also discuss the predicative use of definite descriptions[21]. On this analysis, a sentence like 183 may be interpreted either identificationally or predicationally. Notably, the negation in 183 seems to make the distinction between the equative and the predicational readings more salient. In 183 the predicational reading can be paraphrased as "John doesn't satisfy the requirements for being a member of the (singleton) set denoted by *the best cook in town*," in other words, Griswold is not a good cook.

183. Griswold isn't the best cook in town (cf. Robert Fiengo & May, 1994, p. 30)

[21] Fiengo & May (1994) take this ambiguity in the definite description to go hand and hand with the ambiguity of *be*, which on one interpretation is predicational (corresponding to the predicational statement) and on another is relational (corresponding to the identity statement). The notion of an ambiguous BE is not new, of course; it is discussed as far back as Plato in the *Sophist* (cf. Pelletier, 1990).

Partee (1987) makes a similar point in her discussion of type-shifting rules available for NPs. She takes an occurrence of an NP with *consider* as a diagnostic of a predicate NP, and offers examples like the following, i.e., examples among which are definite descriptions:

184. Mary considers that an island/two islands/many islands/the prettiest island/the harbor/Utopia. (B. H. Partee, 1987)

She then goes on to say that "in fact, we will argue below that all NPs in principle have an <e,t> interpretation, but some of them (like *every island*, *most islands*) yield unsatisfiable or otherwise degenerate predicates" (B. H. Partee, 1987).

In predicate position, therefore, I will claim with the above authors that the definite description is ambiguous; the sentence as a whole is as a consequence also ambiguous: The examples in 182-183 may be interpreted as identity statements, as described above, or as simple predications. In their interpretation as predicate-expressions, the definite descriptions denote the unit set, for 182 the unit set the nicest guy around, and the predication states that John is the singleton member of that set.

Given the definiteness effects operative in existential sentences, I suggest that the uniquely referring use is not what we are looking for to describe the definite NPs that are felicitous here. What's more, the interpretation of these NPs does not seem to be the same

as on the uniquely referring use. What about the predicate use? This use of the definite description does not include reference to individuals but to sets. This is, of course what has been claimed here for the associate—its interpretation is the characteristic function of a set. Let's see how this approach to the interpretation of definite descriptions in the *there*-sentence fares with respect to the examples we started with above.

The presentative superlative

For a sentence like *there's the strangest bird on the lawn*, the approach outlined above means that the NP *the strangest bird* denotes the membership criteria for being the member of that set, namely whatever it is that qualifies something to be the strangest bird. Call this use of the definite description the *intensional use*. Viewed in this way, the interpretation of the superlative in example 176 is brought in line with the usual cases of indefinite NPs occupying this position. It seems that this interpretation is also appropriate: Notice that the superlative in example 176 is not taken literally, i.e., it does not require that that *the item* that qualifies in this world as the strangest bird is in the garden. In fact, if the statement is taken as such the response is infelicitous, as seen below.

185. A: Come! Look! There's the strangest bird in the garden.
B: #No, that's not it. It's much larger than that.

Instead of requiring that *the* item which qualifies as the strangest bird be at the location denoted by the placer, the truth conditions require a satisfying of the characteristic function occur there. Further evidence to this point comes from the fact that in this

position the indefinite article may combine with the superlative, as in 186. Holmback (1984) calls cases such as 186 *presentative superlatives*. Notice that the combination *a* + superlative is disallowed in predicate position of a copular sentence, as can be seen in 187[22].

186. There is a tallest man on Earth.

187. *Tom is a tallest man on Earth.

These examples also provide evidence, therefore, for the claim made above that the expression in associate position does not have the same interpretation as one in the predicate position of a copular sentence. If it did, we would expect 187 to be grammatical, but it is not.

The unusual fact that a superlative with an indefinite determiner can appear in the *there*-sentence is compounded by the fact that a superlative with its usual form (the + superlative) and interpretation, as in 188, is ungrammatical—that is, if *there* is not taken to be a demonstrative or the start of a list-existential (e.g. 'there is the tallest man on Earth, the fastest woman on Long Island...). Furthermore, while the *a* + superlative cannot stand in predicate position of a copular sentence as in (42), *the* + superlative can, as in 189[23].

[22] The ungrammaticality of this example is also not due to the specificity of the subject, (cf. **Someone is a tallest man on earth)*. Thanks to Marcel den Dikken for pointing this out to me.

[23] I'd like to thank Frank Pupa for discussing these facts with me.

188. *There is the tallest man on earth.

189. Tom is the tallest man on Earth.

To complicate matters further, while in the examples 190-191 below *a* and *the* appear to be in complementary distribution with respect to superlatives in the subject position of copular sentences, there are examples where both are licensed in that position 192-193:

190. *A greatest even prime number is two.

191. The greatest even prime number is two.

192. A most interesting thing happened today. (#No, it didn't.)

193. The most interesting thing happened today.

However, the indefinite superlative in 186 doesn't have the meaning that the indefinite superlative in 192 does. In 192, *most* gets interpreted as *very*—the same way the definite superlative is interpreted in the *there*-sentence. Furthermore, the superlative in 193 can also have the *very* interpretation. How can we explain this constellation of facts?

Above it has been claimed that definite descriptions have an intensional use in the *there*-sentence. A superlative in its usual interpretation—the one that picks out just the member of the unit set—is banned in this position, like other uniquely-referring uses of the definite description (setting aside the list reading, as mentioned). This takes care of the ungrammaticality of example 188.

Furthermore, although *a* can grammatically combine with a superlative, as in 186 and 192, two meanings must be distinguished. In 192 a + superlative does not have the meaning of *the* plus superlative in copular sentences. That is, it does not have the uniquely referring use. In the subject position of a copular sentence, the indefinite superlative is interpreted as *very*, like the definite superlative in a *there*-sentence. In the *there*-sentence, on the other hand, the indefinite superlative is interpreted as other NPs in that position: it denotes the membership conditions of the set—in this case, the set is *tallest man on earth*, which has only one member, hence its singular interpretation. (Though note the grammaticality of the following sentence: *There are two tallest men on Earth*. Thus, the condition is simply that of meeting the membership conditions on the set—if two people meet them, fine. We are not dealing with the uniquely referring use, here.)

A + superlative, then, has the intensional use in the associate position of a *there*-sentence. It may never have the uniquely referring use. This accounts for its ungrammaticality in an identity statement, where the arguments of *be* must be uniquely referring; the combination of *a* + superlative is not, resulting in ungrammaticality:

194. *A greatest even prime number is two.

When the copular sentence is instead predicational, the *a* + superlative survives, with the *very* interpretation that is also possible for *the* + superlative in this position, as in 185 and 189. So, in spite of the appearance of the superlative, in the predicational copular sentences with *a* or *the* + superlative, the subject is not uniquely referring (as evidenced

by its 'very' interpretation). Unlike the identity statement, a uniquely referring expression is not required in a predicational sentence.

Indefinite *this*, *the usual* and *the same*

Example 179 above, containing the NP *this crazy guy* can be taken as a case of indefinite *this*, discussed by Prince (1981). This noun phrase is not interpreted demonstratively despite its appearance and instead receives an interpretation of an indefinite noun phrase. Why this is the case is unclear to me, but that it is the case seems clear.

In examples 177 and 178 above, it is not literally *the same problem* that is being talked about, but the same *kind* of problem. Given our interpretation of the associate NP as the membership criteria for a set, these examples, too, fall in line with the general proposal adopted for indefinite NPs in the associate position. If you meet the criteria for set membership for a given set, you have enough in common to be the "same" in the relevant respect.

It thus seems to me that the definite article in the NPs in 181 and 180 is required by the adjectives *usual* and *same*, and is not necessarily a marker of definiteness. Note that these NPs do not occur with these adjectives and the indefinite article 195-198. (To the extent that *a usual crowd* is interpretable its interpretation is that the size of the crowd was usual, not its composition.)

195. ??There was a usual crowd at the beach.

196. *There was a same people at both conferences.

197. ??I saw a usual crowd at the beach.

198. *I saw a same people.

Notice, in addition, that on the "composition" reading, the NPs in 196 and 198 can be interpreted in the same way as the indefinite NP *some people* in 199:

199. There were some people at both conferences.
(On the interpretation: *Some of the people were at both conferences*)

This I take as further evidence that in despite the appearance of the definite article, these NPs are interpreted indefinitely, and that the appearance of the definite article here is the result of a requirement of the adjectives *usual* and *same*.

The List existential

The list existential, a variety of *there*-sentence analyzed in Milsark (1974), was so called because of the possibility of using these sentences in exchanges like the following:

200. A: What is there in the refrigerator?
B: There's salami, milk, yogurt, tomatoes, a cold pizza and leftover spaghetti.

The noun phrases following the copula in the reply above are essentially a list of items, a "hypothetical set", and Milsark uses this idea to provide these sentences with an analysis

that distinguishes them from ordinary *there*-sentences by claiming the NP refers to a list, and not an individual. This is how he explains the lack of definiteness effects in the list-existential, including those against strong quantifiers: "One would then expect the quantificational structure of the NP to be irrelevant for the quantification restriction, since the NP, quantified or not, will merely denote a member of the set which is being predicated by EXIST" (Milsark, 1974, p. 208).

Authors since Milsark have been divided on whether the list-existential can be explained without positing it as an instance of a separate construction from the garden-variety *there*-sentence. The choice depends largely on how one accounts for the definiteness effects in *there*-sentences more generally. Authors who take a pragmatic, or partly pragmatic, approach to the definiteness effects in *there*-sentences usually incorporate list-existential sentences into the garden-variety *there*-sentence type (cf. McNally, 1998a; Gregory Ward & Birner, 1995)[24]. Those who have a semantic account for the definiteness effects generally assume it to be another sentence type altogether (cf. Edward L. Keenan, 2003; Milsark, 1974). My account will fall into the latter category.

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[24] McNally (1998a) accounts for the list reading not by positing it as a separate construction, but by making the prohibition on what she calls "necessarily quantificational NP" grammatical (as mentioned above, I disagree that it is grammatical, but that is irrelevant here) and the ban on definite NPs and proper names a pragmatic restriction.

> The use of *there be* is felicitous in context C only if the NP alpha serving as its argument carries the condition that any discourse referents it licenses be novel. (McNally, 1998a, p. 29)

For McNally (1998a), then, definite NPs and proper names are infelicitous but not ungrammatical, accounting for the both the definiteness effects with definite NPs and the list reading.

There are important things that distinguish the two sentence types. First, as mentioned above, the definiteness effects that hold in ordinary existential *there*-sentences are lifted in the list-existential. For example:

201.	*There is John in the garden.	*There*-sentence
202.	Who can we get to fix the plumbing?	
	Well, there's John.	List-existential

The list-existential also does not have a negative or interrogative counterpart, like the garden-variety *there*-sentence[25].

203.	There's a man in the garden.	*There*-sentence
204.	There isn't a man in the garden.	
205.	Is there a man in the garden?	
	Q: Who can we get to loan us money?	
206.	A: There's Bill.	List-existential
207.	A: #No there isn't.	
208.	A: # Is there Bill?	

[25] The list-existential does seem to work with tag-questions, as pointed out to me by Marcel den Dikken: *Well, there's Bill, isn't there?* I don't have an immediate account for this fact, although the fact that it is a confirmation question and not an information question seems relevant.

Thirdly, the class of quantifiers that are felicitous in the list-existential is different than in the garden-variety case: Strong quantifiers are possible in the list existential. In fact, *only* these quantifiers are possible in the list-existential. If the weak quantifiers are used, the garden-variety interpretation emerges.

Q: Who can we get to loan us money?

209. A: There's *most* of the guys down at the pub.

210. A: There's *every*one you lent money to last year.

211. A: There's *both* your rich uncles.

212. A: There's *all but two* of your friends (and you know which two I mean).

Finally, while the garden-variety *there*-sentence can certainly be judged true or false, the list-existential cannot. A sentence like *there is a cat in the tree* is true if in fact there is something that is a cat in the tree. What about a sentence like *there's John*? If I ask who will loan me money and you reply "there's John", I can certainly disagree with you about whether or not John fits the bill of someone who would loan me money, but there's no question of truth or falsity. This may explain why these sentences cannot be negated. In any case, I believe they show that these sentences constitute a different sentence-type from ordinary *there*-sentences.

The facts presented above help us describe the function of list-existential sentences in the discourse. We use list-existential sentences when we want to make a suggestion, not when we want to make an assertion, and suggestions may be good or bad, but not true or

false. We use them to offer items that we suggest fit a particular bill, a common understanding of which must already be present in the discourse. That is, the list existential cannot be used out of the blue (if you try to use a list-existential out of the blue, as in *there's John*, *there* is interpreted as the locative adverbial in the subject position of a copular sentence). The particular bill to be filled has to be already available in the discourse. In a situation where the *question who can we get to loan us money?* is salient, the bill to be filled is that of "someone who we can get to loan us money". A felicitous response in the form of a list-existential suggests possible candidates. I take the bill that is given in the discourse to be the characteristic function of a set; a speaker uses the list-existential to make reference to purported members of this set.

In the terminology of Austin (1953), with his quartet of uses for simple copular sentences, the function of list-existential sentences resembles that of *bill-filling*. In terms of *direction of fit*, in bill-filling we are fitting items to given names. In terms of onus of match, the sense of the T-word, or predicate term, is taken for granted and the question is whether the item suggested is of a type to match it.

Unlike the sentences that Austin considered, however, the list-existential is neither a copular sentence nor an instance of predication. In the list-existential sentence we are not matching the sense of a given predicate term. Instead, a characteristic function of a set is given, and candidate members of this set are what the speaker is suggesting by means of the list existential. Thus, we may call the list-existential's function *feature-filling* to distinguish it from the bill-filling, subject-predicate case.

As seen above, the list existential is also distinguished from the ordinary *there*-sentence in that it requires a referential noun phrase. In the list-existential we are not placing features, but suggesting items to fit a particular bill, and thus a NP must be able to be interpreted referentially in order to stand in a list-existential. If I ask "Who can we get to loan us money?" and you answer, "There are a few people," you haven't answered my question, as you haven't offered me any candidates, you've merely indicated the existence of some. Proper names and definite descriptions thus work well in list-existential sentences. Interestingly, so do certain quantifiers, as seen above—precisely those quantifiers that are disallowed in the garden-variety *there*-sentence.

These facts about the list-existential make an interesting contribution to the debate on the referential-attributive distinction first discussed in Donnellan (1966) and its relation to quantificational NPs. In the usual way of talking about the distinction, the attributive use of an expression merely provides a description of an object, while the referential one provides a more direct pointer to the object by the use of the description. On the attributive use, the story goes, the speaker intends to refer to something that fits the description, *whoever it might be*. On the referential use, the speaker intends to pick out a particular individual, and the description serves as a pointer to that person (and in fact the speaker may succeed in referring even if the description does not in fact fit the individual in question). Definite descriptions, on a Russellian treatment are an example of a quantificational expression that can have a referential use. It seems that the list existential provides examples of other quantificational expressions that may be interpreted

referentially. The list existential seems to require a noun phrase on its referential interpretation, not its attributive one—you are producing particular objects in the domain as possible feature-fillers. The list existential requires individuals or sets of individuals that are already part of the discourse—hence the requirement for precisely those quantifiers that are disallowed in the garden-variety *there*-sentence. Interesting in this connection is the fact that the usual test used to distinguish between a referential and attributive use of an expression does not seem to make the right cut in the case of the list-existential. The "whoever-he-is" test usually picks out attributive uses of an expression, uses where it is whether or not something fits the description that is in point. In the list-existential, on the other hand, we have a case where we are trying to refer to a known individual in the discourse, but the "whoever-he-is" test is positive. For example: If I say, *who is there that plays chess?* You may reply by saying *there's Bobby Fischer, whoever he is.* The individual in question may not be known to the speaker but must be assumed to exist already in the discourse.

Existential sentences and unbound pronominal reference

If, as claimed on the feature-placing analysis, the associate NP denotes the characteristic function of a set, how is unbound pronominal reference, such as that seen in 213, accomplished? How is this pronoun interpreted? Is it referential? If so, to what does this pronoun refer? Is it anaphoric? To what?[26]

[26] McNally (1998a), who also has no individual variable in the analysis of *there*-sentences, addresses pronominal reference as follows: "The crucial point is that the novel discourse referent that is typically introduced in virtue of uttering an existential sentence

213. There is a man in the garden. He is wearing pajamas.

To provide some context for the unbound pronoun in 213, let's add to it the data from Partee in 214-215. She used these sentences to show that neither conversational salience nor logical inference is enough to underwrite cross-sentential pronominal reference. That is, in 214 the mere inference or entailment of the existence of a tenth marble is not enough to allow pronominal reference to it in the following sentence. Some authors, including Heim (1982) and Kadmon (1990), have suggested that the difference between 214 and 215 is that in 215 the missing marble corresponds to a syntactically realized NP.

214. I have lost ten marbles and found nine of them. #It might be under the couch.

215. I have lost ten marbles and found all of them, except for one. It might be under the couch.

However, it is clear that unbound reference is in fact possible even in the absence of a syntactic realized NP in some cases, contrary to this claim. Collective nouns, for example, allow reference to their parts via an unbound pronoun:

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is not directly associated with the postverbal NP. The latter denotes a property, whose identity is presumably familiar; the new referent is the particular individual whose existence supports the truth of the existential claim. Thus there is nothing in the existential sentence itself that specifically introduces the referent; rather, it must be licensed by inference (perhaps an inference so strong as to be conventionalized), although the postverbal NP plays an essential, if somewhat indirect, role in describing it" (McNally, 1998a, p. 29).

216. The newlyweds enjoyed their vacation. He sunbathed and she played golf.

217. John's parents are in finance. He's an accountant and she's an investment analyst.

Even some data that has been reported as infelicitous in the literature seems to be acceptable given the proper context and accommodation:

218. A: John is married.
B: Is she French?

219. John just got married. (pause) She's French, of course. You know John!

Lack of syntactic antecedent, then, cannot be what explains the infelicity of the example with the tenth marble in 214. The implication for unbound pronominal reference in *there*-sentences is that there, too, a syntactic antecedent in the *there*-sentence may not be enough to explain the subsequent felicitous use of an unbound pronoun.

Complement set reference

In this connection, an interesting set of facts that have been discussed recently in the literature (cf. Solt, 2006) concern quantifiers that, when followed by an unbound pronoun, allow reference to their complement set. That is, the pronoun does not refer back to the intersection of the set denoted by the quantified NP and the predicate, but to the complement of that set. In these examples, the pronoun seems to be accommodated

not only in the *absence* of a syntactically realized antecedent, but in spite of the *presence* of one.

220. Few students came to class. They went to the ballgame instead.

221. Not many of the MPs attended the meeting. They were too busy.

222. Hardly any of my friends have cars. They can't afford them.

In 220, *they* refers most felicitously not to the few students who came to class, but to those that did not. This reading is emphasized with the used of *instead*. It has been noted (cf. Solt, 2006 among others) that in the absence of a word like *instead*, the pronoun may felicitously refer either to the reference set (the few students that came to class) or to the complement set (those that did not). The quantifiers that license (to varying degrees) complement set reference are: *not quite all*, *hardly any*, *not many*, *very few*, *few* and *less than x%*.

Returning to the pronoun in Partee's marbles example, on the other hand, we face a case of genuine infelicity in the use of the pronoun *it* to refer to the tenth marble. What is the difference between *few x* and *nine of them* in this regard? As seen above, it is not enough in 214 to know that there is a tenth marble, just as it is not enough to know, in 223 that there is another 50% of children to be accounted for who do not like chocolate ice cream. In 224 it is clear that in spite of having a syntactically realized antecedent, *the men*, the following pronoun may not refer to either the men, or the complement set of *several of the men*, but only to those denoted by *several of the men*.

223. Fifty percent of children prefer chocolate ice cream. #They prefer vanilla.

224. Several of the men are coming to dinner. #They can't come because they are working late.

Quantifiers, therefore, differ in their ability to license complement set reference. The Partee example contains a quantifier that does not license complement set reference. *Few*, *hardly any* and the others listed above, for example, are quantifiers that do.

The constraint on unbound anaphora shown by the Partee marbles example, therefore, does not boil down to a requirement for a syntactically realized antecedent, but to the fact that some but not all quantifiers license complement set reference. This can perhaps best be seen with a parallel example with a complement set licensing quantifier:

225. I have lost ten marbles and found hardly any of them. They might be under the couch.

Before moving on to see how complement set reference works in existential *there*-sentences, it is necessary to sketch out an analysis of unbound pronominal reference and existential sentences that succeeds in the absence of an individual denoting NP in associate position. That is, if no individual is part of the logical form of the *there*-sentence, to what does the following pronoun refer?

Interpretation of unbound pronouns

In the literature on pronominal reference, a number of alternatives to the interpretation of pronouns present themselves (cf. Evans, 1977 inter alia; Heim, 1982; Kamp, 1981). I will try to situate the case of unbound pronominal reference in *there*-sentences, such as 213 within this larger class of cases. There are referential unbound pronouns that secure their reference pragmatically, i.e., from the salience of their referents in the context of use. These include demonstrative pronouns like that in 226 and deictic pronouns like that in 227. Notice that neither requires a linguistically present antecedent in order to be felicitous.

226. *He*'s the real loser. (pointing)

227. I'm glad *he*'s gone. (said of someone who has just left the room)

While the demonstrative interpretation of the pronoun in 213 *there is a man in the garden* is possible, this use would naturally correspond to the pronoun not being co-referent with *a man*, and is thus not the kind of interpretation we are looking for here[27]. Similarly, there seems to be a connection between the expressions *a man* and *he* in 213 that is not explained by putting it into the category of 226 – at least without saying something additional.

[27] Furthermore, as pointed out to me by R. Fiengo, the pronoun *it*, which can perfectly well stand in relation to the associate NP in an existential sentence, cannot be used with demonstration:

(i) There is a cigarette in the ashtray. It is about to go out.
(ii) #No, *it* is what I want. (pointing)
(iii) No, *that/this* is what I want (pointing)

The closest correlates of the pronoun in 213 seem to be unbound pronouns that are co-valued with a previous expression, and which have been treated in different ways by different authors (cf. Evans, 1977; Geach, 1962; Heim, 1982). The question is: by virtue of what are these two expressions able to co-refer, when, in the case of inter-sentential pronouns, for example, they are not bound by their antecedent?

228. John is a doctor. He works at Mt. Sinai.

229. A man is in the garden. He is wearing pajamas.

One account of this phenomenon is the "pronoun of laziness" approach from Geach (1962). On this account, the pronoun in 228 is simply a replacement for a repetition of the proper name *John*. More recently, some authors have claimed that the pronouns in 228-229 secure their reference pragmatically (cf. Bach, 1987; Neale, 1990) making them akin to the example in 213, except that the salience that they acquire is by virtue of an expression (here a proper name and an indefinite NP) that introduces an individual into the discourse. That is, in the sentences we have anaphoric connection between these expressions despite the fact that they are not in a binding relation: the use of the expression *John* raises the individual to conversational salience in such a way that he can then be referred to using the pronoun *he*.

A (special) deictic pronoun

The case in 213 is already somewhat different than the case in 228, then, which contains a pronoun whose reference has been claimed to be secured pragmatically: the antecedent

in 228, a proper name, already presupposes the existence of the individual denoted by *John* and his inclusion in the common ground. Thus, in 228, unlike 213 the existence of an individual in the discourse corresponding to the intended reference of the pronoun is enough to guarantee its felicitous use. Our *there*-sentence example is akin to the case in 229, whose truth conditions are in fact equivalent to its existential counterpart, except that in the case of 229, there is an individual variable generally assumed to be introduced by the NP *a man* into the logical form. It must be assumed that the pronoun in 229 is co-valued with this variable, creating an unbound anaphoric connection between these two expressions. In the case of the existential *there*-sentence, under the analysis proposed here, there is no such variable introduced by the NP associate to co-value the pronoun with: The associate denotes the characteristic function of a set. And although *there*-sentence contains a syntactically realized NP antecedent, we have seen that is not enough. How, then, does the pronoun secure its reference on this analysis?

I would like to argue that in existential *there*-sentences the interpretation of the pronoun is secured by the fact that the there-sentences logical form and truth-conditions, although non-objectual, are logically equivalent to an objectual logical form and in fact entail the existence of an object that satisfies the characteristic function denoted by the associate at the location expressed by the placer. It is to the entity, the entity that satisfies the function, that the pronoun refers. I repeat the proposed logical form and truth conditions below:

230. A sentence of the form [(feature$_{\text{CHARACTERISTIC FUNCTION}}$ (x))(placer$_{\text{LOC}}$)] is true iff a satisfying of the characteristic function denoted by the feature occurs at the location denoted by the placer.

Technically, therefore, our example is not a case of unbound anaphora, as in 228-229. The pronoun is not co-valued with any expression in the antecedent clause. Instead, I claim that the pronoun in 213 is *deictic* to the individual whose existence at a certain location is entailed by the antecedent clause's—the *there*-sentences—truth conditions.

Data in support of the analysis

Given the analysis presented above, it is possible to explain the felicitous use of unbound pronouns following *there*-sentences. For example, it offers an explanation for why pronominal reference fails in 232:

231. There's a man in the garden.

232. #No, he's not. (=No, there isn't a man in the garden.)

233. No, he's in the kitchen. (=There's a man in the kitchen, not the garden.)

Because the speaker of 232 takes the truth conditions of 231 to be unfulfilled (or somewhat bizarrely thinks that 231 refers to a particular person), there is no person to which the pronoun can refer. In 233, pronominal reference succeeds on the assumption that it is not the existence of the item satisfying the denotation of the NP that is being

denied, just its location[28]. The case in 233 is similar to a case due to Strawson (1952), which also shows that you can, across utterances of different speakers, use an unbound pronoun to refer to an individual whose existence is taken for granted while denying part of the assertion that introduced that individual into the context:

234. A: A man fell over the bridge.
B: He did not fall. He jumped. (p. 187)

Thus, given the assumption that unbound pronominal reference functions differently in existential sentences, in that the content of their logical form and truth conditions contain no individual, it is possible to generalize this approach also to negative existential statements such as 235-236) and the possible denials/affirmations that can be made thereafter. For example:

235. A: There isn't a man in the garden.

236. A: There is no man in the garden.

The truth conditions of the negative existential in 235-236 require that the characteristic function denoted by the associate output 0, i.e. not be satisfied, in the garden, and therefore there is no individual entailed to which the pronoun in 237 may refer.

[28] And this is generally the case: As long as the characteristic function is satisfied, you can deny the location or specific properties of that item using a pronoun (e.g. *There's a tabby cat in the yard*. *No, it's a Siamese*.)

237. A/B: #He is wearing pajamas. (on the co-valued reading)

Is this pronoun an E-type pronoun?

Given that I have already granted a "special" status to the interpretation of the pronoun following existential *there*-sentences, I would like to consider another option that has been suggested to me for the analysis of the pronoun in 213, namely, that the pronoun is E-type[29].

Instances of pronouns whose antecedents are quantificational NPs that do not c-command them, yet whose interpretation co-varies with the value of the variable in the antecedent, require an explanation that is different from bound variable pronouns whose antecedent c-commands them. Take, for instance, the examples in 238-240. (Following the findings of many other authors (cf. e.g. Heim, 1982), allowing cross-sentential binding provides incorrect interpretations for such sentences, although this has been debated in the literature.)

238. Every man loves his mother.

239. Every man who owns a donkey beats it. (donkey-sentence)

240. The man who gave his paycheck to his wife was wiser than the one who gave it to his mistress. (paycheck sentence)

[29] The possibility of this approach was brought to my attention by Chris Kennedy at the 2006 LSA Summer Meeting.

In order to explain examples such as 238-240, many authors have posited another class of pronouns besides bound and referential or deictic ones: E-type pronouns (following Evans, 1980). Several formalizations of the E-type analysis exist in the literature (cf. eg. Cooper, 1979; Evans, 1977, 1980; Heim, 1990; May, 1988; Neale, 1990). One well-known formulation of the E-type analysis is that of Cooper (1979). In this formalization the E-type pronoun consists of two variables: a variable that co-varies with the head NP of the antecedent and an unbound contextual variable that generates a definite description that contextually restricts the referent. This allows the referent of the pronoun to co-vary with the referent substituted for the quantified antecedent, and provides an account of the intuitive equivalence between the pronoun and the definite description. For example:

241. Every man who owns a donkey beats it/the donkey that he owns.

As has been noted in the literature, however, positing a definite description as part of the interpretation of the pronoun causes some problems; namely, the sentence with a definite description has interpretations that the sentence with a pronoun does not, and give some unexpected results with respect to ellipsis. These have been discussed in Neale (1990), Elbourne (2001) and Büring (2001), among others. Ultimately, positing the definite description as part of the E-type analysis requires some extra machinery to preserve its relation to the interpretation with the pronoun; this has been implemented by different authors in different ways. Some authors, Heim (1990), for example, have introduced situation variables to accomplish this disambiguation.

Interestingly from the point of view of the present approach, however, is the fact that Evans' original formulation of the E-type relies on the Fregean notion of *satisfaction* to secure the interpretation of the pronouns in question, and it is not the pronoun that has as part of its interpretation a definite description, but it is a definite description recoverable from the content of the antecedent clause that allows it to be interpreted. He says: "Pronouns are often used as referring expressions, and it is not particularly surprising that some of them should have their reference fixed by a description recoverable from the antecedent, quantifier-containing clause" (Evans, 1977, p. 344). But how, then, to we get the individual referred to by *it* in 241? He elucidates the notion of *satisfaction* with respect to the E-type pronoun as follows, "It looks as though the role of the pronoun in these sentences is that of referring to the object(s), if any, w hich verify the antecedent quantifier containing clause." It seems that the function of an E-type pronoun in Evans' terms is something like the following:

242. John owns some sheep and Harry vaccinates them in the spring.
[[them]] = a substitution for x in the antecedent clause which makes the open sentence *John owns x* and *x are sheep* true.

There are important similarities between Evans' theory of E-type pronouns and the one I've proposed above for unbound pronouns that take the associate as their antecedent. Both address cases of unbound pronouns that require verification of the antecedent-containing clause in order to license the pronoun. This similarity can be brought out by

the fact that both E-type pronouns and existential *there*-sentences are infelicitous if the antecedent quantifier is replaced with *no*.

243. Few congressmen admire Kennedy, and they are very junior.

244. #No congressmen admire Kennedy, and they are very junior.

245. There is a man in the garden, and he is wearing pajamas.

246. #There is no man in the garden, and he is wearing pajamas.

There are important differences between the analysis of the pronoun proposed here and Evans' E-type analysis, however. First, in the E-type cases, the pronoun's reference varies with the value of the variable in the antecedent. In this sense, E-type pronouns are a genuine case of unbound anaphora. In existential sentences, there is no variable in the logical form and the pronoun is not co-valued with any expression in the antecedent clause, and therefore we are dealing, as claimed above, with a case of deixis and not of anaphoric connection.

In terms of the development of the theory, it should also be noted that Partee (1970) provides a similar kind of description of the phenomenon as exhibited in intensional or modal contexts like the ones in 247-249, which are also unbound and have also been analyzed as requiring an E-type analysis:

247. John wants to catch a fish and eat it for supper.

248. If John marries a girl his parents disapprove of, they will make life quite unpleasant for her.

249. I expect that John will buy a car and that he will drive it to work every day.

On the topic of the interpretation of these pronouns, Partee says: "Coreference then is *not* directly between the noun phrase in the first part of the sentence and that in the second; the antecedent for the coreference is in fact not expressed *as a noun phrase* anywhere in the sentence. Coreference rather seems to be with that unique though hypothetical entity which would be crucially involved in actualizing the possible world characterized by the first part of the sentence" (B. Partee, 2004, p. 37).

That is, in intensional contexts, as in existential *there*-sentences, unbound anaphora requires that the truth conditions be satisfied *for a particular substitution* in order to make co-reference possible. Of course, unlike existential *there*-sentences, these sentences probably are cases of unbound anaphora, given that the indefinite NP introduces a variable into the logical form to which the pronoun can be co-valued.

The Evans/Partee approach to E-type anaphora, then, is different from the definite description approach in that it does not require that a definite description be part of the interpretation of the pronoun but only that satisfaction of the antecedent clause provide a description that can be recoverable, from context. Given the relative simplicity of the Evans' style approach over those that require a description as part of the pronoun, I

believe it should be preferred over one that requires both individual variables, definite descriptions, and in most cases situation variables in order to disambiguate the interpretation of the pronoun with respect to the antecedent. Furthermore, Heim & Kratzer (1998) admit that the Cooper-style E-type interpretation would be available for virtually all pronouns but only required for the kinds of sentences mentioned above. In this sense the theory seems to over-generate. Under the Evans-style approach outlined there, the special E-type interpretation would be reserved for pronouns that are both anaphoric and unbound. The generalization is the following:

> Unbound *anaphoric* pronouns are interpreted as co-valued with a description which is recoverable from the content of the antecedent clause which has been verified via substitutions for all its variables.

For an existential *there*-sentence, on the other hand, the generalization is as follows:

> Unbound pronouns may be interpreted as *deictically referring* to the individual that is required in order to satisfy the characteristic function that is part of an existential sentence's truth conditions

In sum, while the mechanism for interpreting unbound pronouns is unified in the sense that it requires a verification of the antecedent clause, it is necessary to distinguish unbound anaphoric pronouns, where substitution is for variables present in the logical form and which are then co-valued with the pronoun, and unbound deictic pronouns, which are not co-valued with any variables in the logical form of their antecedent, but deictic to the individual entailed by it.

Negation

As seen already in the section on unbound pronouns, negation plays out in *there*-sentences in interesting ways. This section will look at a few more instances where the behavior of negation can be explained by the idea of feature-placing.

No such thing

Notice first that like the *kind of* NPs that were licensed in the coda position of *there*-sentences, the negative *no such thing* is felicitous in the *there*-sentence. Remember that following Carlson (1977) and Heim (1987) the variable in *such an x* is taken to range over kinds, not individuals. The feature placing approach allows us to state an interpretation for *no such thing* in a *there*-sentence that involves a characteristic function, not a kind. In these sentences *thing* in *no such thing* relates explicitly to the satisfaction of the characteristic function: It asserts that there is no thing to satisfy the characteristic function of the NP following *as*.

250. There's no such thing as unicorns.

'No thing satisfies the characteristic function of *unicorns.*'

251. There is no such thing as patience.

'No thing satisfies the characteristic function of *patience*.'

Of course if the characteristic function that is being asserted to have no instances is quite restricted, it makes for a less felicitous utterance. There isn't a uniform ban against codas with *no such thing*, however as seen in 253 and 254.

252. #There's no such thing as unicorns in the garden.

253. There is no such thing as patience on Wall Street.

254. There is no such thing as a free lunch.

255. There is no such thing as a free lunch in this town.

No versus Not

It has often been observed that the scope of sentential negation in a *there*-sentence, is always higher than that of the associate, making the interpretation of constituent negation with *no* and negation with *not* essentially synonymous—at least truth-conditionally equivalent—in that context.

256. There is not a cat on the mat.

257. There is no cat on the mat.

There are interesting differences in how these two forms of negation work in the existential, however. Observe the differences in the sentences below, for example:

258. There are not wombats in the garden.

259. #There are not wombats.

260. There are no wombats.

261. There is no such thing as patience.

262. #There is not such a thing as patience.

It seems that while constituent negation, i.e., negation using *no*, is always possible in *there*-sentences, there are situations where sentential negation, using *not*, is infelicitous. (The negation in 259 and 262 can of course be interpreted meta-linguistically, in which case they are felicitous.) Of course, we want to say that *no* is interpreted with respect to the NP associate and has the effect of requiring zero instances of the satisfying of the characteristic function. What about *not*? Is *not* is interpreted with respect to the placer or to the whole sentence? I will argue that *not* is interpreted with respect to the placer. In sentence such as *there are not men in the garden* we get truth if it is not the case that in the garden there are men. (i.e. if it is not the case that at that location there is a satisfying on of the characteristic function denoted by *men*). These two scopes for negation, while truth-conditionally equivalent, make a difference in situations where no coda is present, in spite of the fact that a default domain supplied by the copula is interpreted. When no coda is present, *not* has nothing to scope over and is for this reason infelicitous (except, again, as interpreted meta-linguistically). This also provides a neat explanation for why cases with *not…any* are improved—they bring the negation back to the associate NP. That is, the *not…any* is interpreted with respect to the associate, and not the placer.

263. There's no way you are going to do that.

264. #There's not a way you are going to do that.

265. There isn't any way you're going to do that

266. There's no time like the present.

267. #There isn't a time like the present.

268. There is no time to lose.

269. #There isn't time to lose.

270. There isn't any time to lose.

271. There's no problem.

272. There's not a problem.

One thing to notice is that since on the current account we are not dealing in a feature-placing sentence with an objectual assertion in the logical form, that is, there is no variable being quantified or introduced in the logical form, there is not an implication, in the cases with negation on the placer, that there *are* instances of the successful satisfaction elsewhere. In sentences like *there is not a man in the garden*, for example, which could be paraphrased in feature-placing terms as, "in the garden there is not a satisfying of the characteristic function of a man", there is no implication that there *is* a successful satisfying of the characteristic function elsewhere. This differentiates the *there*-sentence from the related copular sentence *a man is not in the garden*, which *can* have the interpretation that there is a man who is not in the garden, and finds an

explanation in the fact that in the *there*-sentence no objectual commitment is made, whereas in the copular sentence, one is.

Conclusion

In Part II I have argued that the associate NP, which corresponds to the feature in a feature-placing sentence, is interpreted as the characteristic function of a set. This interpretation accounts for its lack of scope, its interpretational similarities to kind-denoting NPs, and its differences from ordinary set-denoting NPs. In the feature-placing account, the definiteness effects of *there*-sentences are attributable to the fact that it is the combination of a characteristic function of a set and a location that generates its meaning and makes it possible to use these sentences to make assertions of existence. This meaning is incompatible with NPs that already presuppose the existence of their referent, which, of course, also cannot be interpreted as the characteristic function of a set. The prohibition against strong quantificational NPs was argued to follow from a ban on exhaustive quantifiers in the associate position. The list-existential has been argued to be an example of a separate construction, which unlike garden-variety *there*-sentences, has no truth value and also cannot be negated. Finally, the discourse properties of the associate with respect to unbound pronominal reference was discussed and an account was advanced that claims that unbound pronominal reference following *there*-sentences is a case of deixis.

By way of conclusion, I offer a question posed by the thesis developed here: What does is mean to say that two pieces of the metalanguage, in this case, two sets of truth conditions, one objectual (e.g. the sentence *A cat in the garden* is true if and only if there is an x such that x is a cat and x is in the garden) and one non-objectual (e.g. the sentence *there is a cat in the garden* is true if and only if a satisfying of the characteristic function *cat* occurs *in the garden*) are logically equivalent translations of one another? What are the logical, theoretical, and ontological consequences of such a position? I leave the answer to these questions for future research.

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