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This is a very slightly revised version of my 1992 University of California, Santa Cruz PhD dissertation, which had a slightly different title: An Interpretation for the English Existential Construction.

Contents

Preface

This book is a slightly revised version of my 1992 University of California, Santa Cruz, dissertation, entitled *An Interpretation for the English Existential Construction* (the title of the present work has been modified for bibliographic reasons). In addition to editing and correcting the text, I have added an index and updated the references. However, there have been no substantive changes in the contents for two reasons. First, some revisions have taken the form of subsequent papers (McNally 1994, 1995a, and 1995b); and second, substantive changes would have implied writing a completely new book, something which did not seem appropriate for this series. However, I would like to mention briefly one issue that received very little attention in the original dissertation. The reader is referred to the works cited below for further details.

That issue is the proper role of location or locativity in the analysis of existential sentences. There is a persistent intuition in the linguistics literature that existential sentences have something in common with sentences that ascribe location to an individual (see e.g. Lyons 1967, Kuno 1971, Clark 1978, Lakoff 1987, Freeze 1992, among others); on some of these analyses, a sentence like *There were people on the dock* has the same underlying syntax and argument structure as *People were on the dock*. While I share the basic intuition, at the time I wrote the dissertation I could not find convincing empirical evidence to support an analysis which treated the existential predicate as a relation between an individual and a location or which ascribed existential and locative sentences the same underlying structure. I still find such evidence lacking;[1] however, I now believe it is important to reconsider the locative nature of existential sentences because, when properly understood, it may

shed light on two phenomena: 1) the acceptability in existential sentences of DPs containing monotonic decreasing and nonmonotonic determiners (such as *at most three* and *exactly three*, respectively; see Barwise and Cooper 1981 for definitions); and 2) the so-called predicate restriction, that is, the exclusion in existential sentences on certain final predicative phrases (e.g. **There was a man tall*).

The analysis developed in what follows does not adequately treat DPs containing monotonic decreasing and nonmonotonic determiners. The problem is that it is not possible to combine an analysis of such determiners as essentially adjectival with an analysis of the existential predicate as either existence asserting or instantiating, as I propose here. This combination results in incorrect truth conditions. For example, if the semantics of a sentence such as *There were exactly two books on the table* is paraphrasable as "There exists a set X of individuals such that X is a set of books and the cardinality of X is exactly two and X are on the table," the sentence can be true even when there are more books on the table–it suffices to set apart a set of exactly two books out of a larger set on the table. Intuitively, though, in such a situation the sentence should be false. The same is true for sentences containing monotone decreasing determiners. In McNally 1995a I propose a means of relativizing the truth conditions on existential sentences to a locational parameter in order to resolve this problem. However, no independent motivation is given in that paper for the particular way in which location is integrated into the semantics of the construction.

I argue in Chapter 1 against Milsark's claim that the predicate restriction should be related to a similar restriction in copular sentences (cp. ??*A man was tall*), that is, that the unacceptability of this and the existential *There was a man tall* is due to some characteristic of *a man*. However, I have since concluded that Milsark was correct, although a convincing treatment of the predicate restriction remains to be worked out (though see Ladusaw 1994 and McNally 1995b for related proposals). In the present work, I argue that the temporal characteristics of the existential construction and of the final predicative phrase lie at the source of the predicate restriction; in subsequent work (McNally 1994, 1995b), I have argued that their locative characteristics are more likely to

be crucial.

I remain skeptical that the semantics of the English existential construction should be directly related to that of locative sentences. Nonetheless, I hope these comments, while very brief, will stimulate further research into the semantics of location which, in turn, may deepen our understanding of the existential construction and its relation to locative and copular constructions.

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Chapter 1

The Problem

1.1 Introduction

This work addresses a simple question: What is the interpretation of English *there*-existential construction? By *there*-existential, I mean the familiar construction exemplified in (1):

(1) a. There are students who failed Syntax I enrolled in Syntax II.

b. There is a painting by Goya on the classroom wall.

c. There are many solutions to that problem.

This construction has attracted a lot of attention in the linguistics literature, perhaps the most attention being devoted to the definiteness restriction on the postcopular DP[2] (see below) and to the observed syntactic and semantic similarities between the existential and other constructions, including (in the case of English) copular, passive, progressive, locative, and possessive constructions.

However, one of the principal goals of this work is to focus attention away from these two aspects of the construction, and to develop an interpretation for the construction that will specifically address other properties of the postcopular DP. Informally stated, the proposal to be developed is the following:

(2) The existential predicate in English is interpreted as a property of a *description of an entity*, specifically the property that the description is instantiated by some entity at some index. The addition of a (non-negative, non-modalized) existential sentence to a context entails the introduction of a discourse referent into the domain of the context that corresponds to the instantiation of the description-argument. An additional felicity condition requires this referent to be novel.

The principal point of interest in (2) is the claim that the postcopular DP should be interpreted a description of an entity, by which I intend an object that corresponds most closely to Chierchia and Turner's notion of a *nominalized function* (Chierchia and Turner 1988; it is equivalent to Chierchia's 1984 notion of the *entity correlate of a property*). This claim is of interest for a couple of reasons.

For one thing, it commits me to a domain of entities that includes (inter alia) both "ordinary" individuals (like you or Jane or Jane's bicycle) and abstract entities that constitute the descriptions of those individuals (hereafter, I will refer to these as nominalized functions or "nfs"), and to the position that a DP can be interpreted as an entity of either sort. While this type of enriched domain of entities is not new to model-theoretic semantics (consider notably Carlson 1977a), comparatively little attention has been devoted to investigating the consequences of positing a subdomain of nominalized functions. In the present case, positing a nominalized function as the argument of the existential predicate will lead to reflection on how the notion of "(non)referentiality" should be understood.

It has been observed that there is something "nonreferential" about the postcopular DP in the existential construction (see e.g. Fodor and Sag 1982, Safir 1987, Higginbotham 1987); however, this observation has never been seriously investigated. Indeed, at first blush it is a rather curious observation, since the ostensibly conflicting intuition that the existential construction is used to introduce a (persistent) discourse referent is equally strong. These quite different intuitions have each driven distinct lines of analysis of the definiteness restriction. The position I take here is that both are correct, and that the way to reconcile (though of course this is not to say unify) them is to make precise what lies behind

this intuition concerning the nonreferentiality of the postcopular position.

Specifically, I will argue that what lies behind this intuition is simply the fact that the postcopular DP in the existential is interpreted as a nominalized function, rather than as an entity of the "ordinary" sort. I will assign the same kind of interpretation to predicate nominals. The term "referential" can then be reserved for a very restricted class of DPs, viz. those that are interpreted with respect to the actual world and identify objects in the ordinary entity domain (which I will refer to, following Chierchia and Turner 1988, as the set *U*).[3] This sortally based classification of DPs as referential vs. nonreferential crosscuts two other classifications in which the notion of referentiality has been given a role in the past. On the one hand, it is distinct from the "referential/necessarily quantificational" classification, implicit in the Discourse Representation Theory (DRT, Kamp 1981; see Roberts 1987 for detailed discussion) and File Change Semantics (Heim 1982) literature: As Williams 1983 observed, and as we will see below, necessarily quantificational DPs can quantify over nominalized functions (members of the set I designate as *NF*) as easily as they can quantify over objects in *U*. On the other, (non)referentiality has been used to classify individuals in actual vs. nonactual worlds, "nonreferentiality" characterizing nonspecific indefinite DPs within the scope of modal operators and intensional predicates.

Taking these three classifications together, one sees that, while the referential DPs are a homogeneous class–just those that are interpreted as u-sort entities with respect to the actual world–the nonreferential DPs form a heterogeneous class. Consequently, I will avoid using the term "nonreferential" for specific subclasses of nonreferential expressions, preferring instead expressions such as "nf-sort DP," "necessarily quantificational DP," or "DP interpreted with respect to some nonactual world." We thus have three dimensions along which DPs (or more precisely, their interpretations) can be classified: whether or not the DP is quantificational, whether it identifies/quantifies over ordinary individuals vs. nominalized functions, and whether it identifies an actual vs. non-actual entity.

The claim that the postcopular DP in the existential construction is nonreferential in the sense of "necessarily quantificational"

or "identifying a nonactual entity" is incompatible with the intuition that a persistent discourse referent is introduced with the addition of nonnegated, nonmodalized existentials in extensional contexts; in contrast, the claim that it is nonreferential because of a sortal condition placed by the existential predicate is not. Indeed, assuming (2), it should be unsurprising that the assertion of an existential sentence has the effect of introducing an additional discourse referent instantiating the argument of the existential predicate, since the presence of that discourse referent will support the truth of the existential assertion. What lacks a full explanation is why this discourse referent must in general be novel.[4] But perhaps this is as it should be, since there is a certain amount of cross-linguistic variation in the class of DPs licensed in the existential construction.[5]

The proposal in (2) is also of interest because of its particular empirical predictions. By claiming that the argument of the existential predicate is a nominalized function, I am claiming that nothing in the argument structure of the existential predicate directly corresponds to the individual whose existence is ostensibly asserted, or to the predicate denoted by the optional final phrase. This, in turn, has a variety of consequences that will become apparent as we proceed. One is that the definiteness restriction cannot be treated as a unitary phenomenon: some of the facts will follow from the interpretation assigned the postcopular DP, while the rest will follow from the felicity condition mentioned in (2). The advantages of a nonunified account of the restriction will be discussed in Chapter 3.

A second consequence of positing a nominalized function as the complement to the existential predicate is that certain differences (beyond the definiteness restriction) between the postcopular DP in the existential construction and DPs that appear in referential argument positions are clarified. Previous analyses have had little to say about these differences. It further predicts that whenever we find a linguistic phenomenon sensitive to the semantic sort of an argument as I have characterized it, the postcopular DP will contrast with DPs in referential positions. A few such cases will be discussed in Chapter 3; whether there are more, and what they might be, is a question to be explored in future research.

Finally, I will argue in Chapter 2 that the optional predicative phrase (XP) that can appear in existential sentences is a semantic adjunct of the sort found in (3); and, in Chapter 4, that the restriction on the sorts of predicative phrases licensed in the construction will follow from the adjunctthood of the XP:

(3) Sally is drinking the tea hot.

Thus, on the view to be defended, the similarity between existential and (truth-conditionally similar) copular, passive, and progressive sentences in English is accidental rather than necessary–a position rather different from what is generally assumed for English in the syntax literature since Milsark 1974 (a notable exception being Williams 1984; see also Chung 1987 and Williams 1994).[6]

The rest of this chapter will introduce the two central phenomena that previous analyses have attempted to account for, followed by a discussion of some of those analyses. Since the literature on the existential construction is relatively large and has been summarized in other works (e.g. Lumsden 1988), I will mainly be concerned with examining and evaluating the principal analytic strategies that have been adopted in the past.

1.2 Facts to be Accounted For

At the very least, a successful analysis of the existential construction should account for the following:

- The fact that, under certain circumstances, DPs with determiners like *the, every, both, most*, as well as proper names and pronouns, are excluded from the postcopular position in the construction, as in **There is every friend of mine at this party.* Following common practice, I will to refer to this phenomenon as the *definiteness effect* or *definiteness restriction.*

- The prohibition against certain kinds of predicates serving as the interpretations of the optional sentence-final XP, viz. those Carlson 1977b characterized as kind- and individual-level predicates (e.g. *widespread, intelligent*). Again following common practice, I will refer to this prohibition as the *predicate restriction.*

However, there are other facts one might expect the analysis to explain, including certain constraints on relativization out of the DP position and the fact that, with one set of exceptions, the postcopular DP must take narrowest scope with respect to other quantifiers and operators in its clause. These issues have received less attention in the literature in comparison with the definiteness effect and predicate restriction; consequently, I will postpone discussion of them until Chapter 3.

Finally, one might hope that an analysis of the existential construction might provide some insight into related phenomena, including the "list" interpretation which often arises when a definite or quantificational DP appears in the construction (Milsark 1974, Rando and Napoli 1978), as in (4), and the "presentational-*there*" construction (Milsark 1974, Aissen 1975), exemplified in (5):

(4) A: What can I eat for dinner?
B: Well, there's that leftover macaroni and cheese, Kent's chicken concoction, or Mary's meatloaf.

(5) a. There appeared a masked man from behind the counter.

b. There ran into the room a reporter with news about the president's assassination.

The data in (4) and (5) will come up again in Chapter 5, once the analysis of basic existential sentences is fully developed.

1.2.1 The Definiteness Effect

The definiteness effect (DE) is undoubtedly the most salient and most discussed feature of the construction. Since summaries of the relevant data are not uncommon (Lumsden 1988 is a useful source) I will introduce these facts with a minimum of commentary.

DPs Excluded from the Construction

For taxonomic reasons, it is useful to divide the DPs generally excluded from the construction into two categories. One category includes proper names, personal and demonstrative pronouns, DPs headed by definite possessives such as *John's* and a subset of DPs

headed by the definite determiners *the, these, those, this, that*, and *all*. Representative examples appear in (6):[7]

(6) a. #There was Margaret at the party.

b. #There were them/those waiting outside.

c. #There was Monica's sister available to help.

The other category comprises a subset of the DPs headed by the necessarily quantificational determiners *every, each, both*, and *most*; the non-negative exceptive determiners *every/all ... but John*; and "free choice" *any*:

(7) a. *There was every/each participant upset with the arrangements.

b. *There were both/most ambassadors housed at that hotel.

c. *There was anybody happy about the election results.

d. *There was everyone but Michelle taking Spanish.

In addition, Boolean combinations involving one or more of these are excluded (Keenan 1987).[8]

DPs Appearing in the Construction with No Restrictions

All of the classes of DPs to be mentioned here have been identified previously in the literature; relevant references will be provided along the way.

DPs Headed by Intersective Determiners The postcopular DP may be an existentially interpreted bare plural or mass term, or it may be headed by any of the following sorts of intersective determiners (see Barwise and Cooper 1981 and below for definitions): the indefinite article, all cardinal determiners, cardinal comparatives such as *as many male as female*, vague non-proportional determiners such as *many, few*, the negative indefinite, and negative exceptives (e.g. *no ... but John*); see Keenan 1987 for a comprehensive list:

(8) a. There were flies swarming around the cow's head.

b. There was a tarantula crawling across the rock.

c. There were three pianos in the salon.

d. There were more red than blue flags flying above the castle.

e. There were many/few explanations for his behavior.

f. There were no replies.

g. There was no child but Martha playing outside.

These DPs may be interpreted as speaker specifical or nonspecific, as evidenced in particular by the appearance of the necessarily specific "indefinite *this*" in the construction (cf. Prince 1981a; see also Farkas 1996 on the notion of speaker specificity):

(9) a. There was this one dog that kept chasing the cars on our street.

b. There was a woman you know quite well on the panel.

c. There was a specific book on every professor's shelf.

In order for use of an indefinite *this* NP to be felicitous, the existence of a referent for the NP must be presumed by the speaker (though not necessarily by the hearer).

In addition, for many speakers, partitives headed by determiners drawn from among this class are also licensed in the construction (though this is not universally agreed upon in the literature, I have heard many naturally occurring examples of this kind):[9]

(10) a. This time, there were none of the objections they had encountered on other occasions.

b. There are two of us on the selection committee.

c. There were many of the same people at both events.

I take partitives to be acceptable and assume they differ from non-partitives only in the felicity conditions on the familiarity or anaphoricity of the referents associated with the complement to *of* (see Ladusaw 1982 for details).

Morphologically Definite DPs That Do Not Refer Uniquely The postcopular DP may be (and sometimes must be) headed by a definite determiner if the complement noun denotes a 2- or more-place relation (cf. Woisetschlaeger 1983, Holmback 1984 for these data; see e.g. Barker 1991 for discussion of relational nouns):

(11) a. There was the smell of liquor on her breath.

b. There was the air of a soldier about him.

c. There was the lid to a jar on the counter.

d. There was the mother of a student in the office.

However, when the internal argument of the noun in (11)c and d is modified by a definite determiner, the sentence becomes anomalous:

(12) a. #There was the lid to the jar on the counter.

b. #There was the mother of the student in the office.

Similarly, possessives with prenominal possessors that are independently licensed in the existential may also appear in the construction, although possessives with other kinds of prenominal possessors are impossible:

(13) a. There was some woman's jacket left behind.

b. There were many student's papers unclaimed.

c. #There were the woman's sisters running down the street.

Note that we get the same effect with relational nouns as we see with the prenominal possessors.

A final set of examples in this category includes the following (Milsark 1974):

(14) a. There were the same people at both parties.

b. There was the usual crowd at the bar.

Definite and Quantificational DPs Describing Kinds Nominals that denote the name of a kind, or that are headed by a noun

like *kind, sort, flavor*, etc., may appear with any otherwise prohibited determiners, whether definite or quantificational (Lumsden 1988, Wilkinson 1988):

(15) a. There were those kinds of books at the library.

b. There was every flavor of ice cream for sale.

c. There were both wines available for tasting.

This concludes the basic inventory of the types of DPs licensed in the existential construction.[10]

1.2.2 The Predicate Restriction

I now turn to the issue of the predicate restriction. As Milsark 1974 and Keenan 1987 have convincingly shown (see Chapter 2 for a recapitulation), in the existential construction a predicative phrase may follow the postcopular DP. That it must be a predicative phrase is evidenced by the prohibition in the existential construction on anything that cannot follow the verb *be* in a copular construction (cf. Siegel 1976):

(16) a. *The soldier is veteran.

b. *There is a soldier veteran.

c. *The president is former.

d. *There is a president former.

e. *The tree is fallen.

f. *There was a tree fallen.

However, the restriction is stronger than that. A number of XPs which are ostensibly predicative in virtue of the fact that they can be nominal postmodifiers are also excluded:

(17) a. A book belonging to me has been lost.

b. *There were two books that Fred had bought belonging to me.

c. A woman knowing the answer has arrived.

d. *There was a woman who came late knowing the answer.

In addition, full DP predicate nominals (which cannot be a nominal postmodifier, but which of course can appear in the complement to *be* position), are absolutely excluded, although my judgment is that determinerless predicate nominals are slightly more acceptable:[11]

(18) a. *There was a woman a contestant on the game show.

b. *There are many people I know students of linguistics.

c. *There was a radical student the president of the club.

Carlson 1977a suggests that the predicate position is restricted to just those predicates which he labeled "stage-level;" "individual-level and "kind-level" predicates are excluded.[12] Thus, APs, PPs, and VPs which satisfy tests for stage-levelhood (such as allowing non-generic, non-specific indefinite and bare plural subjects, as in (19)) can appear in the construction (see (21)), while those that fail the stage-level tests, as in (20) cannot appear in the construction (see (22)):

(19) a. A student is sick with the flu.

b. A new student is enrolled in the course.

c. Dogs were chasing cars down the street.

d. A teacher is out of work.

(20) a. #A student is able to answer that question.

b. Students are able to answer that question.

c. #A dinosaur is widespread.

d. Dinosaurs are widespread.

e. #Some tires are in short supply.

f. Tires are in short supply.

(21) a. There are three people who know you sick with the flu.

b. There were students who object to that enrolled in the course.

c. There was a dog that was missing a leg chasing cars down the street.

d. There are many educated people we know out of work.

(22) a. *There are three people who know you able to answer that question.

b. *There is a kind of dinosaur widespread.

c. *There are tires in short supply.

This concludes the introduction to the principal range of data that previous analyses have focused on. We may now consider what those analyses have had to say about these data.

1.3 Previous Analyses

1.3.1 *There*-Insertion and Its Descendants

The approach to the existential construction which assimilates it to the copular construction goes back at least as far as the "*there*-insertion" transformation of Burt 1971, and has persisted in various guises in Milsark 1974, Jenkins 1975, Stowell 1978, Safir 1982,

Keenan 1987, and Pollard and Sag 1994, and elsewhere. As noted above, this analysis has its roots in the observation that existential sentences appear to have copular, progressive, and passive counterparts: the truth-conditional equivalence of the pairs in e.g. (23) suggested a common underlying structure (or alternatively, the postulation of an identical semantic relation, viz. predication, between the DP and XP in each pair):

(23) a. A child was ill.

b. There was a child ill.

c. A woman was playing the guitar.

d. There was a woman playing the guitar.

e. A passenger was killed in the accident.

f. There was a passenger killed in the accident.

Moreover, the link has been bolstered by the observation that many Indo-European languages show the same Subject-Verb/Verb-Subject alternation, often (putatively) with the requirement that the postverbal subject be indefinite.[13]

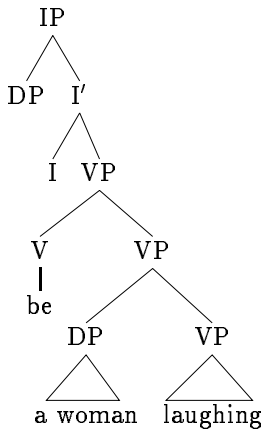
While the analogy of existential vs. non-existential counterparts in English to personal vs. impersonal counterparts in other languages is tempting, in this section I point out a couple of problems with attributing common syntactic structures to the pairs in (23), using a version of the standard Government-Binding (GB) analysis to illustrate.[14] In so doing, I do not mean to imply that an account of the putative definiteness effect in impersonal constructions in other languages cannot ultimately be related to that observed in the existential in English, though I will not undertake such a project here. My point is simply that such a relation could (and if it is pursued, should) be developed without committing oneself to deriving existential and copular/passive/progressive sentences from the same syntactic or semantic representation.

The Stowell/Safir Analysis

The work of Stowell 1978 and Safir 1982, 1985, 1987 has been influential in promoting the "small clause" analysis of existential and

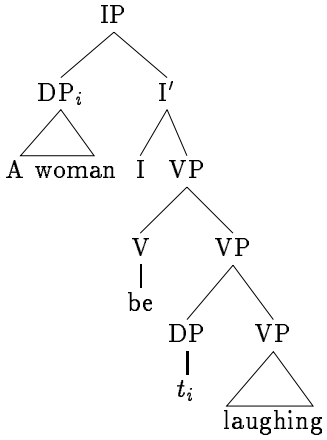
copular sentences in English. This analysis takes the D-structure complement of (predicational) *be* to be a so- called small clause, as in (24):[15]

(24)



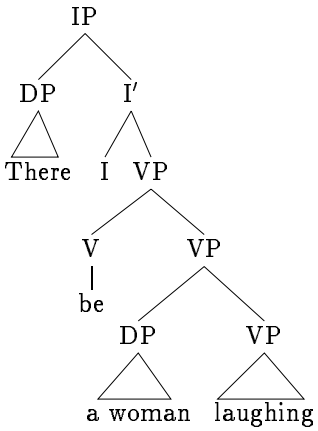
Be is hypothesized to be a raising verb, like *seem*. In order for the Extended Projection Principle to be satisfied– that is, for there to be a surface subject of the sentence–and, on some analyses, in order for the postcopular DP to receive Case, one of two things has to happen: either the postcopular DP has to raise to Spec(IP), or else an expletive has to be introduced at S-structure. In the former case, the result is a passive, progressive, or copular sentence, depending on the small clause predicate:

(25)



In the latter, the result is an existential sentence:

(26)



I will not dispute the plausibility of the small clause analysis of copular sentences here; however, extending this analysis to the existential construction raises three problems in particular: (1) it incorrectly predicts that other copular constructions will have existential-like counterparts; (2) it cannot account simultaneously for the definiteness effect and the predicate restriction; and (3) it fails to predict the extraction facts associated with the construction. I now consider the first two of these problems in turn; the third will be addressed in Chapter 2.

The Existential and Non-*be* Copular Constructions

It has been observed (e.g. by Burzio 1986) that the small clause analysis of the existential, at least as formulated within GB, predicts that sentences such as those in (27)d,f should be grammatical, on analogy with (27)b:[16]

(27) a. A woman is in the yard.

b. There is a woman in the yard.

c. A woman seemed tired.

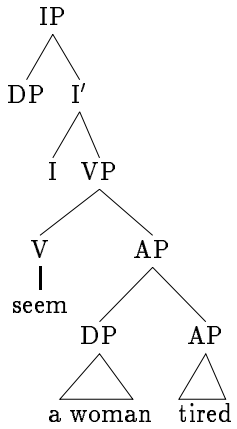
d. *There seemed a woman tired.

e. A woman appeared tired.

f. *There appeared a woman tired.

Under the assumption that predicative *seem* and *appear* have the same argument structure as copular *be*, they should have a D-Structure like that in (28):

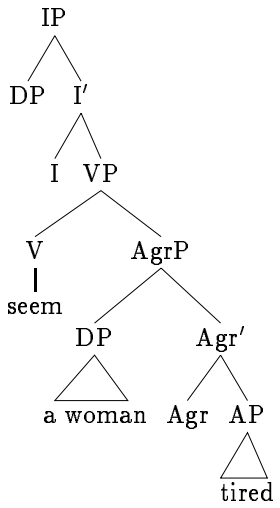
(28)



Since the expletive can satisfy the Extended Projection Principle and transmit Case when the verb is *be*, it should be able to do so with similar verbs as well–thus, the ungrammaticality of (27)d,f remains unexplained. This asymmetry between *seem* and *appear*, on the one hand, and *be*, on the other, has lacked an elegant explanation. We might adopt the general proposal of Raposo and

Uriagereka 1990 for similar data in Portuguese: they argue that the difference between *paracer*, 'seem,' in Portuguese, which does not allow an expletive subject with a small clause complement (like English), and verbs that do have this configuration of arguments, is that the small clause complement to *paracer* is actually dominated by a projection of a functional head (e.g. AgrP), while the small clause complement to the expletive-licensing verbs lacks a functional head. Extending this idea to English, *seem* and *appear* would license the structure in (29), rather than that in (28) (which we continue to assume for *be*):

(29)



Raposo and Uriagereka suggest that the presence of this AgrP renders it impossible for the subject of the small clause to get Case: They make AgrP a barrier both to inherent Case marking by the main verb and to expletive-argument chain formation (see next section); and the small clause predicate is not a Case assigner. Failure of the small clause subject to get Case would thus be the reason that expletive subject structures are not possible with *seem* when it takes a small clause complement.

This explanation of the asymmetry between *be* and other copular predicates may be viable, but it is unclear why *be* should have a small clause complement headed by a lexical projection, while *seem* and *appear* do not. The thrust of the analysis (intended or not) is

clearly to make the postverbal DP as much like an argument of *be* as possible, while making a clause the argument of *seem*.[17] One therefore wonders what is gained by maintaining the type of small clause analysis for existential *be* sketched here, especially if the semantic similarity between existentials and copular/passive/progressive sentences has an alternative explanation.[18]

If we reject the small clause analysis, that is, if we take the position that the similarity between the existential and copular constructions is not a reflex of a common syntactic origin, then we no longer predict that (27)d,f should be grammatical, and we are free to pursue other accounts of the distribution of the expletive *there* in English.

The Small Clause Analysis and the Definiteness Effect

A second problem with the small clause-type analysis is its inability to account without stipulation for both the definiteness effect and the predicate restriction; it can account for at most one of the two.

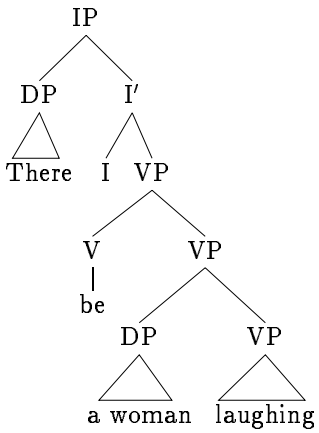
The problem is the following: On the small clause analysis, the postverbal DP is not a complement to *be*, but rather a subconstituent of the complement to *be*. Consequently, any semantic or discourse-functional condition imposed directly on the DP on this analysis would violate commonly accepted locality constraints: predicates are generally not assumed to be allowed to place semantic restrictions on subconstituents of their arguments. Similarly, a restrictive theory of discourse should not allow for statements such as: "The subject of the complement to the existential predicate must be able to introduce a novel discourse referent," which make reference to a position nonlocal to the lexical item or construction triggering the condition. Hence, neither semantics nor discourse can be appealed to to explain the DE, given the small clause analysis. However, since the small clause complement to *be* is headed by the final predicative phrase, it *is* possible to impose some sort of condition to capture the predicate restriction.

This leaves us with two options: a syntactic account of the definiteness effect, or an account on which the effect follows from some aspect of the semantics of the small clause predicate. The latter strategy was pursued by Milsark 1974, 1977, who argued that the definiteness effect was intimately connected to the predicate

restriction; however, in Section 3.3 I argue that this strategy fails.

The best-developed syntactic account of the DE is that advocated in Safir 1982, 1985, 1987, in which it is argued that the definiteness effect is a consequence of the postcopular DP forming a chain with the expletive, specifically, an unbalanced θ-chain, in order to satisfy the Case Filter. That is, Safir posits that the postcopular DP is not in a Case-marked position at D-Structure. The fact that the DP gets Case parasitically from the expletive accounts for the fact that it controls verb agreement: The DP's agreement features are inherited by the chain, and those features are in turn shared by the chain's Case assigner, Infl-Agr:

(30)



Safir observes that the definiteness effect would follow from this analysis if the restriction of expletive-argument chains to indefinite DPs were justified. However, any such justification, including Safir's own proposal, entails appeal to semantics–exactly what we are trying to avoid.

Safir 1987 suggests the following account. He begins by adopting the principle in (31):

(31) Predicate Principle: A potential referring expression is a predicate or else free [i.e. subject to Condition C of the Binding Theory–L.McN.].

This principle is motivated on the grounds that predicate nominals might reasonably be excused from the Binding Theory on the basis

of their nonreferentiality and (concomitantly) because they are θ-role assigners. Now, if the expletive and postcopular DP form a chain headed by the expletive, then the expletive will necessarily bind the postcopular DP. If the DP is a nonpronominal, (31) will require that the it be interpreted as a predicate in order to avoid a Principle C violation.

The intuition lying behind this proposal is essentially that developed in this work. It amounts to a concession that the interpretations of the DPs in existential vs. copular/passive/progressive sentences are quite different. Observe that the small clause predicate ceases to play any role at all in determining the interpretation of the DP as referential or not (in my terms, as an ordinary individual vs. a nominalized function). This is a very curious state of affairs if the DP is the complement to the small clause predicate and *only* to that predicate.

Further sign that Safir's proposal is essentially semantic is apparent in this remark made in subsequent discussion of the definiteness effect and its connection to the "existence assertion" character of the construction (Safir 1987:93f.):

> It seems that the natural language interpretation of a bare predicate [i.e. a predicate apparently missing an argument in the syntax; here Safir is referring to a class of which he takes the postcopular DP to be a member– L.McN.] is as an existential "event" assertion about the denotation of the predicate. But then it is no surprise that with a few exceptions, the typical limitation on unbalanced θ-chains is that they require an existential interpretation.
>
> ...the existential [e.g. *There is a child sleeping*] involves two bare predicates, one of them formed by the unbalanced chain (*a child*), the other by the whole VP *is a child sleeping*. The first predicate should have the default interpretation, namely that there is an event involving a child, and the second predicate should be interpreted to mean that there is a "(child-)sleeping event."

This passage reveals that Safir in no way appeals to the small clause in his attempt to explain the DE, and his justification for

expletive-argument chains makes crucial use of semantics. Thus, a nonstipulative, purely syntactic account of the DE does not seem to be forthcoming. In sum, the small clause only serves to hamper an idea that I will argue in subsequent chapters to be quite interesting and successful.

There is a final alternative one could pursue in order to maintain the small clause analysis, namely, to develop a notion of something like an "indefinite small clause" which would require an indefinite subject, perhaps for semantic reasons. *Be* might then require its complement, be it a DP (in bare-DP existentials) or a small clause, to be indefinite. The problem lies in motivating such a notion. Whether we take "indefinite" to mean "capable of introducing a new discourse referent" or "not uniquely referring," (to use two well-supported characterizations of the term *indefinite*), it is impossible to see how the definiteness of the subject could be relevant. The "new discourse referent" characterization is not of obvious help because, in the case of a clause, the relevant discourse referent for evaluating the putative (in)definiteness of that clause should correspond to the denotation of the clause itself, and not to the denotation of one of its subconstituents (e.g. its subject). The "non-unique reference" characterization of an indefinite small clause would be of even less use, because a clause does not have to have and indefinite subject in order to have non-unique reference. Consequently, I do not see much hope for the utility of any conception of "indefinite event" in an explanation of the DE.

To summarize, I have argued that analyses in the tradition of the *there*-insertion transformation, which try to derive existential and copular constructions from a common source,[19] should be avoided because they do not offer hope for simultaneous explanation of the definiteness effect and predicate restriction. The small clause analysis has the further disadvantage of predicting that other copular constructions should have existential counterparts. Additional syntactic arguments against these analyses will be provided in the next chapter.

Having examined a part of the previous literature on the construction as a whole, I now consider two sorts of proposals that have been advanced to account specifically for the definiteness effect.

1.3.2 Previous Characterizations of the DE

There are two recurring themes in characterizations of the DPs licensed in existential sentences: one is the idea that some formal property of the interpretation of the postcopular DP in involved (cf. Milsark 1974, Higginbotham 1987, Safir 1987, and I take it to be implicit in the characterizations of Barwise and Cooper 1981 and Keenan 1987); the other, the idea that the DP must be associated with a new discourse referent (cf. Prince 1981b, Prince 1988, Lumsden 1988, Zucchi 1995). Both reflect correct observations. Indeed, previous accounts of the DE have failed to be fully successful only to the extent that they have not put these two observations together.

Theme 1: The DE and Formal Properties of DP

For some historical perspective, I begin with a brief look at the final version of Milsark's 1974 interpretation rule for the construction:

(32) E Rule: *there* AUX (*have-en*) *be* Q NP X is interpreted: the class C denoted by NP has at least one member c such that P(c) is true, where P is a predicate and P is the reading of X and the set of such members c is of cardinality Q.

The "Q NP" in the rule are the subconstituents of the postcopular DP node, Q standing for the determiner, when there is one, and the NP standing for the nominal sister to the determiner. The insight of this rule lies in the phrase *the class C denoted by NP has at least one member c*. The obvious problem lies in calculating the contribution of the material denoted by Q to the interpretation of the construction, and its relevance to the DE. Unsurprisingly, then, the existential construction has served as a testing ground for the formal theories of determiner and DP interpretation proposed by Barwise and Cooper 1981 (hereafter, B&C) and Keenan and Stavi 1986 (K&S)/Keenan 1987. Their proposals concerning the DE are presented in turn, following by discussion of a version of the proposal in Milsark 1977.

The Triviality Explanation B&C begin with the assumption that all DPs denote generalized quantifiers, i.e. sets of sets. Among

the various classifications of quantifiers they propose is the by now well-known *strong/weak* distinction, inspired by the strong/weak classification suggested in Milsark 1977. Strong DPs fall into two groups: positive strong and negative strong. Simplifying considerably, a DP is positive strong iff it is entailed in all models that the universal set (viz. the set of all individuals in the model) is an element of the generalized quantifier the DP denotes; negative strong DPs are those for which it is entailed in all models that the universal set is *not* an element of their denotation. The weak DPs are those that are neither positive nor negative strong. (See B&C for complete definitions and explication.)

B&C, observing that existential sentences of the form "*There is X*" (where *X* is a DP) are often paraphrasable by sentences of the form "*X exists*," propose the semantics in (33) for the existential construction, the universal property being the suggested denotation for the existential predicate:

(33) $[\![\textit{There is } DP]\!]^{M,g}$ is true iff $1 \in [\![DP]\!]^{M,g}$, where 1 is the "universal property", i.e. a set which consists of all of the individuals in the domain of the model.

They then propose that the existential construction sounds acceptable only when the postcopular DP is weak; on their view, sentences with strong DPs, such as (34), sound odd because, given the semantics they propose and the definition of strong DP, such sentences will be either tautologies or contradictions:

(34) *There is every riot on this block.

(34) is a tautology because 1 (the universal set) is an element of the generalized quantifier *every riot* in all models. Were (34) negated, the result would be a contradiction. In other words, B&C's account of the DE is pragmatic: the offending sentences sound anomalous because they are uninformative.

However, Keenan 1987, Milsark 1990, and others have observed that this account is problematic for two reasons. First, the assumption that the copula is followed by a single DP is demonstrably wrong (cf. Chapter 2). Barwise and Cooper's analysis thus predicts that if a strong DP appears in the construction with additional (DP-external) modification, the anomaly should disappear. However, this is not the case:

(35) *On this block, there was every riot that caused major damage.

(35) is anomalous despite the fact that it is not a tautology (assuming that the locative phrase makes a non-trivial contribution to the truth conditions of the sentence).

Second, as Keenan 1987 points out, there are plenty of non-anomalous sentences that are clearly tautologies or contradictions:

(36) a. Every thing is not a thing.

b. Red is red.

c. There are either zero or more than zero people sitting in that chair.

On the B&C account, we have no explanation for why the putatively tautologous or contradictory existential sentences sound as bad as they do. Consequently, I follow Keenan and Milsark in concluding that lack of informativeness cannot be the explanation for the DE.

Keenan's Definition of Existential DP In order to make the Keenan/Keenan and Stavi account of the DE clear, a little more formal background is necessary. Keenan and Stavi propose that all natural language determiners denote *conservative* functions.[20] For our purposes, conservativity (a property of functions relating sets) can be defined as in (37):[21]

(37) A function f is conservative iff $f(A, B) \equiv f(A, A \cap B)$

The observation underlying conservativity is that to decide whether a sentence of the form "Det A's are B's" is true, it is necessary to look only at things which are A's (and, therefore, not at the B's which are not A's). For example, to evaluate the truth of the sentence *Every child swam* we need not know anything about any individual who was not a child. Notice that it may be necessary to look at the A's which are not B's in order to decide whether a sentence is true. For example, in this case it is crucial to know whether there were any children who did not swim in order to know whether *Every child swam* is true.

Conservativity characterizes *all* determiners.[22] What more do we need to say about the determiners which appear in existential sentences? Keenan, p.c. proposes that the existential predicate licenses those DPs which are headed by determiners denoting what he defines as *co-conservative* functions:[23]

(38) A function f is co-conservative iff $f(A, B) \equiv f(A \cap B, B)$

Since all determiners are conservative, those which appear in the existential construction are the intersection of the conservative and the co-conservative ones; hence, he refers to them as *intersective*:[24]

(39) A function f is intersective iff f is both conservative and co-conservative. Consequently, f is intersective iff $f(A, B) \equiv f(A \cap B, A \cap B)$.

The intuition behind (39) is that an intersective determiner is one for which, in order to decide the truth of "Det A's are B's," it is necessary to look only at the A's which are also B's. For example, to evaluate *Two children swam*, we need only look at the children who were swimming, and verify that there were at least two of them, to declare the sentence true. Any children who were not swimming, and any swimmers who were not children, are irrelevant.

Some examples of intersective determiners include all of the cardinal determiners (*one, two, several, many*), *no*, the exceptive determiner *no ... but John*, and cardinal comparatives such as *as many male as female*. The non-intersective determiners include *the, every, both, each* and all proportional determiners (e.g. *most, more than half, ten percent of*).

It is important to note that the class of intersective determiners and intersective DPs is defined recursively, as follows:

(40) a. A basic determiner is intersective iff it is always interpreted by an intersective function.

b. A determiner is intersective (simpliciter) iff either it is a basic intersective determiner or it is built up from basic intersective determiners by Boolean combinations.

(41) a. A basic intersective DP is one formed from an intersective determiner and the appropriate number of N's.

b. The intersective DPs are the basic intersective ones together with those formed from them by Boolean combinations.

A recursive definition is necessary because it is possible to form logically equivalent complex determiners using Boolean operations that behave differently with respect to the existential construction: only those formed from just basic intersective determiners or their Boolean combinations will be licensed, as seen in the contrast in (42):

(42) a. There are either zero or else more than zero even prime numbers.

b. *There are either all or else not all even prime numbers.

Since *either zero or else more than zero* and *either all or else not all* are both trivial, there is no difference between them other than that the former is composed of two intersective determiners, while the latter is composed of two non-intersective determiners. Consequently, it appears that it is not merely the denotation of the determiner, but the elements out of which it is composed, that is relevant.

With these definitions in hand, we are ready to consider the explanation of the DE advanced by Keenan/K&S.

Keenan's 1897 explanation is similar to B&C's in that he does not take the DE violation to be necessarily ungrammatical or anomalous. Instead, he simply asserts the following:

(43) Existential sentences of the form in (a) are logically equivalent to the existence assertion reading (b), iff the determiner expression Det is always interpreted by an intersective function.
a. there [be [Det student]$_{DP}$ [in the garden]$_{XP}$]
b. $1 \in [\![Det]\!]([\![student]\!] \cap [\![in\ the\ garden]\!])$

In other words, Keenan claims that when the postcopular DP is headed by an intersective determiner, the interpretation of the sen-

tence is (presumably appropriately) logically equivalent to an assertion of the form *Det students that are in the garden exist*, which he translates using the universal property in (44)b. In contrast, when the DP is headed by a determiner which does not denote an intersective function, the existential sentence is not equivalent to an assertion involving *exist* (compare (44)c and d):

(44) a. There are two students in the garden.

b. Two students that are in the garden exist.

c. #There is the student in the garden.

d. The student that is in the garden exists.

Keenan does not claim that DPs headed by non-intersective determiners will be systematically good or bad in the construction, but rather that when they are interpretable, they will not be logically equivalent to the existence assertion reading. As a result, his proposal is, like B&C's, immediately subject to the objection that it does not explain the anomaly of some existentials with nonintersective determiners, but not others.

Moreover, while I have not found any counterexample to (43), it is not completely explanatory for the following reason. Consider examples such as the following:

(45) a. There is the lid to a jar on the counter.

b. The lid to a jar which is on the counter exists.

c. #There is the lid to the jar on the counter.

d. There are both varieties of that plant in the garden.

e. Both varieties of that plant in the garden exist.

My intuition is that while (45)a and b, and (45)d and e, are (as Keenan predicts) not logically equivalent, (45)a and d are not strange in the way that existentials with non-intersective determiners are usually strange (compare e.g. (45)c)–a contrast that needs to be explained. The difference clearly has to do with the internal semantics of the DP: In the case of the DP in (45)a, licensing is conditioned by properties of the complement to the noun; in (45)d,

it is not the complement of the noun but the noun itself that renders the DP acceptable in the existential. Consequently, Keenan's account of the DE is incomplete insofar as it focuses entirely on the semantics of the determiner.

Nonetheless, as long as we confine ourselves to a restricted class of nominals, Keenan's generalization is compelling. What is it about intersective determiners that the existential construction is sensitive to? In order to answer that question, I will address another: Does the complement to the set of intersective determiners constitute a single natural class?

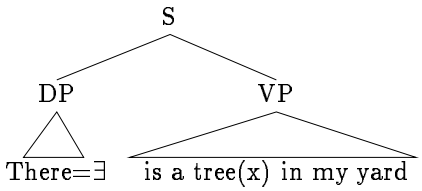
I take the answer to this second question to be negative Inspection of this class reveals that it consists exactly of all of the determiners that give rise to necessarily quantificational DPs (e.g. *every*), with the exception of *no*[25] and the exceptives built from *no* (e.g. no ...but Suzanne); plus all of those determiners that give rise to DPs that must refer uniquely (e.g. *the*). This suggests that the existential is sensitive to whether or not its complement DP must refer uniquely, and indeed this conclusion is supported by the fact that DPs in the acceptable (45)a and the unacceptable (45)c differ only in that the former need not refer uniquely while the latter must. But is the existential sensitive to quantification? It would be very odd for quantification into an argument position to be idiosyncratically excluded, and indeed (45)d shows that quantification into the postcopular position is not always excluded. The position I will take in Chapter 3 is that the sensitivity associated with necessarily quantificational DPs is actually to the sort of individual being quantified over.

The Existential and Existential Quantification As a conclusion to the discussion of previous explanations the DE that have been driven by consideration of formal properties of DP, I will argue that accounts that try to derive the DE by positing a necessary binding relation between a special existential quantifier associated with the construction and the postcopular DP are undesirable. Milsark 1977, Williams 1984, Higginbotham 1987, and Safir 1987 all suggest something along these lines. For purposes of exposition, I will present Milsark's version of the proposal. Consider (46):

(46) There is a tree in my yard

Following Milsark, we could introduce the existential operator via a stipulated part of the interpretation rule for the construction. In addition, assume that the indefinite is interpreted in situ as an open formula at L(ogical) F(orm):

(47)



This proposal would account of the definiteness effect if, as Milsark suggests, one could justify the stipulation that the operator must bind a variable in the denotation of the DP, since neither quantificational DPs such as *every tree* nor definites such as *the tree* will make any such variable available – the former because *every* will bind any bindable variables associated with the DP; the latter, because the felicity conditions on the use of definites entail that the value of the variable associated with the definite DP be antecedently determined.

There are two reasons to disfavor this account. First, if Abbott 1992 is correct in arguing that so-called "list" existential sentences (and existentials containing definite DPs, more generally) should have the same semantics as ordinary existentials, then it is not clear how the former sort of existentials could be interpreted. Consider a sentence like *There's Mary.* If *Mary* provides no variable for the posited existential operator to bind, this sentence should be semantically anomalous. And yet it is not, as seen in the fact that there are many contexts in which it can not only be interpreted but also felicitously used.

A second problem is raised by indefinite DPs that contain within them other quantifiers, such as *a member of every committee.* These DPs are licensed in the construction with an inverse linking reading (sketched in (48)b,d for (48)a,c, respectively; cf. May 1985), where the quantificational DP takes scope over the DP containing it:[26]

(48) a. Contrary to expectation, there was a short blurb about every course in the Institute handbook.

b. $(\forall x : \mathbf{course}(x))$
$[(\exists y : \mathbf{blurb}(y))[\mathbf{about}(y, x) \wedge \mathbf{in}(y, \text{I-h})]]$

c. There was a representative from every department appointed to the steering committee.

d. $(\forall x : \mathbf{department}(x))$
$[(\exists y : \mathbf{rep}(y))[\mathbf{from}(y, x) \wedge \mathbf{appointed}(y, \text{s-c})]]$

It should be clear that a construction-specific existential quantifier cannot have wide scope with respect to the universal quantifier on the inverse linking reading. The problem is that it cannot have narrow scope with respect to that quantifier, either. May 1985 shows that a quantificational DP embedded within another DP cannot Quantifier Raise higher than the DP in which it is contained; rather, it must take immediate scope over that DP. Thus, there is no way for a construction-specific existential operator to intervene between the universal quantifier and the variable corresponding to the indefinite–the structural integrity of the DP would have to be violated in order for this to happen. But if this is the case, then an account of the DE built on the stipulation that the postcopular DP must be bound by a special existential quantifier cannot explain the grammaticality of sentences like those in (48), since there is no way for such a quantifier to bind the variable corresponding to the indefinite if an inverse linking interpretation is to result.

The problems encountered by Milsark's account of the DE are clearly due to the way in which the indefinite is provided with existential force: Appeal to a necessary binding relation between an existential operator and a variable in the translation of the indefinite fails to account for the possibility of definites in the construction and the inverse-linking reading.

Summary of Theme 1 We have seen that previous accounts of the DE grounded in formal properties of DP fall short in various ways. The purpose of considering the Barwise and Cooper account was to make the point that the DE does not correlate with the triviality or contradictoriness of an existential sentence. I concluded

on the basis of this that we must look for a linguistic, as opposed to extralinguistic, explanation for the DE. However, I showed that trying to make the DE follow by positing a special existential operator of the sort suggested by e.g. Milsark 1977, that targets the denotation of the postcopular DP, had undesirable consequences.

In addition, we have considered Keenan's characterization of the determiners that appear in the existential construction. This characterization is insufficient insofar as the licensing of a DP in the construction depends not just on the determiner, but on the denotation of the DP as a whole. However, it has pointed us towards some properties of DP to which the construction might be sensitive, viz. necessarily unique reference and, when the DP is quantificational, the sort of individual being over.

Theme 2: Discourse/Presupposition-Based Explanations

A different view of the DE and DE violations runs through the more functionally oriented literature (e.g. Prince 1988, Hannay 1985, Lumsden 1988, Ward and Birner 1995), and has been taken up recently in a modified form by Zucchi 1995. On this view, the condition on the postcopular DP is, roughly, that it introduce an individual whose existence is not presupposed in the context of utterance.

Consider this paraphrase of the characterization of the condition according to Prince 1988:

(49) The postverbal DP in the English *there*-existential construction must identify a *hearer new* discourse referent.

Prince's notion of hearer new largely corresponds to Heim's 1982 notion of novelty: A hearer new discourse referent (DR) is one which, at the time of utterance, is not an element of the domain of the discourse model (be it in virtue of explicit mention, inference, or shared knowledge), and whose descriptive content is not presupposed to be satisfied by any individual in that domain. DPs such as *a cat* identify hearer new DRs by convention and are, consequently, licensed in the existential construction. Definite DPs such as *the cat* or *Fluff* must identify a DR which is already part of the common ground (i.e. *not* hearer new); hence, they are excluded from the construction.

(49) is an extremely successful characterization of the condition on appearance in existentials; however, it has one drawback: it is not designed to handle cases where the DP is not associated with a persistent discourse referent at all. Consider the DPs *no student* and *every student*. Neither of these DPs introduces a persistent discourse referent (though we might say that both introduce temporary discourse referents, see Heim 1982:249ff.), and yet the former is licensed in the existential construction, while the latter is not:

(50) a. There is no assistant available.

b. *There is every assistant available.

Consequently, (49) must be generalized to encompass quantificational DPs. One way to do this is to a notion of novelty that makes reference to descriptive content in addition to a notion of discourse referent. For example, following Condoravdi 1992b we could adopt the following:

(51) A DP is *strongly* novel (in a context) iff it bears a novel referential index and its descriptive content is not presupposed to be satisfied by any individual in the domain of the common ground of the context.

The referential index mentioned in (51) is used not only to index persistent referents in the discourse model, but also to keep track of antecedent-pronoun relations confined to the scope of quantifiers. The descriptive content is contributed by the complement to the head determiner in a DP.

The condition on the postcopular DP could thus be restated as in (52):

(52) A DP may appear in the postcopular position of the *there*-existential construction iff it is strongly novel.

Strong novelty distinguishes *no student* and *every student* as follows. Both DPs are assigned a novel referential index (because the index they receive simply serves the purpose of keeping track of the variable(s) bound by an operator; quantificational DPs are

never anaphoric). However, the DPs differ with respect to presupposition of descriptive content: *no assistant* carries no presupposition that there is any assistant-individual in the domain of the discourse model, while *every assistant* does carry such a presupposition.[27] In other words, *no student* is strongly novel, while *every student* is not, and the prediction is correctly made that only the former will appear in the existential construction.

However, although (52) covers a wider range of data than does (49), it raises the following question:[28] How does it extend to examples involving quantified kind expressions such as (53)?

(53) There were both kinds of apples in the sauce.

That is, what do we take the descriptive content of *both kinds of apples* to be? In order for the DP in (53) to count as strongly novel, its descriptive content must not be presupposed to be satisfied by any individual in the domain of discourse. But since (53) involves quantification over kinds, it must be presupposed that something is instantiating the descriptive content associated with the nominal *kinds of apples*. Consequently, if (52) is going to account for the acceptability of (53), a more sophisticated characterization of the notion of satisfaction of the descriptive content of a DP will have to be forthcoming.

Perhaps we could avoid rethinking our assumptions about what constitutes the satisfaction of descriptive content by extending the notion of hearer newness explicitly to cover cases of quantification, building on an observation made by Lumsden 1988. Lumsden asserts that (53) is acceptable because it predicates existence of instances of kinds, and the existence of those instances is not presupposed, even if existence of the kinds is. Reformulating his hypothesis in terms of (49), and expanding it to account for cases of quantification, we could assert that:

(54) The postcopular DP in the English *there*-existential construction must introduce a (persistent or temporary) hearer new discourse referent.

But is (54), or any analysis that tries to account for the distribution of both definites and necessarily quantificational DPs in terms of the presuppositions associated with their descriptive contents the best solution? One of the goals of Chapter 3 is to argue

that it is not. Rather, sentences like (53) point to the need to compare closely the behavior of (both quantified and nonquantified) kind terms and ordinary DPs in existential sentences. Consequently, a clarification of the different behavior of kind terms and ordinary DPs in the existential is one of the principal objectives of the present work. This clarification will both allow for an extremely simple statement of the novelty condition associated with the postcopular DP, and will also shed light on other properties of the postcopular DP not immediately related to the novelty condition.

I have not discussed the relative merits of those characterizations of the DE that are based on formal properties of the determiner or DP vs. those that are discourse-functional. The reason that I have not is that I do not take what has been labeled "the" DE to be a unitary phenomenon. Rather, the two sorts of explanations target distinct properties of the postcopular DP: the former is sensitive to a semantic condition on the DP; the latter, to an independent felicity condition conventionally associated with the construction. I will provide arguments for this nonunified approach to the definiteness effect in Chapter 3.

1.3.3 The Predicate Restriction

In contrast to the definiteness effect, the predicate restriction has received scant attention. Three strategies have been pursued to explain it: (1) Claim that the predicative material is actually a part of the postcopular DP and try to derive the restriction from conditions on postnominal modification; (2) Assume an independent XP, and try to derive the restriction from the condition governing the postcopular DP; and (3) Assume an independent XP, and build the explanation on its semantic properties. We saw in Section 3.1.3 that pursuing at least one version of this last strategy left us with no way to account for the definiteness effect.

Barwise and Cooper 1981 and Williams 1984 pursue the first strategy; that is, they treat what we have referred to as the XP as postnominal modifiers and attempt to derive the predicate restriction from independent conditions governing such modifiers. For example, they propose that an AP such as *intelligent* is ruled out in the existential construction because it cannot be a postnominal

modifier:

(55) *Many professors intelligent are on their faculty.

However, since convincing evidence has been offered that there in fact can be an independent XP at the end of an existential sentence (see Milsark 1974, Keenan 1987, and Chapter 2), and since the predicate restriction demonstrably persists there, this sort of explanation cannot be the whole story.

Milsark 1977 adopts the following version of the second strategy to explain the predicate restriction: Assume that the definiteness restriction is an independent fact about the construction. Demonstrate that DPs which appear in the existential construction are incompatible in copular sentences with the predicates excluded from existential construction. Then the predicate restriction will follow from the definiteness effect plus an independently motivated incompatibility between the licensed DPs and the excluded predicates. However, the facts do not support this explanation; specifically, the construction licenses a whole range of DPs which are *not* incompatible with the excluded predicates.

(56) a. This friend of mine is very clever.

b. A woman I know is a member of the City Council.

c. No solution I know of is permanent.

d. At least two people on the research team are doctors.

(57) a. There was this friend of mine there, watching the fire.

b. There was a woman I know on the City Council.

c. There is no solution to the last homework problem.

d. There are at least two people on the research team.

(58) a. *There was this friend of mine very clever.

b. *There was a woman I know a member of the City Council.

c. *There was no solution I know of permanent.

d. *There were at least two people on the research team doctors.

Consequently, we must find an explanation for the predicate restriction which does not depend on the nature of the postcopular DP, or else we have to come up with some non-superficial difference between the DPs in (56) vs. (58).

An additional criticism which can be brought against Milsark's analysis is that it precludes any unified account of the predicate restriction in the existential and the very similar restrictions that apply to "reduced" clefts (Jenkins 1975), and to adjunct XPs (see e.g. Rapoport 1991 and Chapter 4):

(59) a. That's John sick.

b. *That's John a doctor.

c. *Here's Margaret tall.

(60) a. Max played tennis barefoot.

b. *Max played tennis intelligent.

c. *Max played tennis an amateur.

It is obvious that the nature of the DP that provides the subject for the secondary predication has nothing to do with the restriction in (59)-(60). Any analysis of the predicate restriction in the existential construction that depends on the DE is not going to account for these facts and will thereby quite possibly miss a generalization.

1.4 Outline of Remaining Chapters

Chapter 2 presents syntactic motivation for the claim that the postcopular DP is the sole complement to the existential predicate, as

well as for the claim that the optional final phrase is a predicative adjunct. In addition, I will argue that none of the usual tests for small clausehood offer any positive indication that the DP-XP string in the existential is a small clause. In Chapter 3 the interpretation for the basic existential construction (without the final XP) is developed and then compared to analyses that take the postcopular DP to denote an ordinary individual or a generalized quantifier over such individuals. Chapter 4 augments the analysis to account for the contribution of the final XP and shows how the predicate restriction can be derived from a more general condition on depictive/circumstantial VP-adjuncts. Finally, Chapter 5 contains some rather speculative discussion of the broader implications of the proposal in the context of data such as "list" existential and "presentational-*there*" sentences.

Notes

[1]For example, I believe that too much is made of the fact that the expletive in the existential is phonologically identical to the locative pronoun (see Lakoff 1987, for example). Historically, there has been variation in the choice of expletive used in existential sentences (see Ball 1991), and in African American Vernacular English, expletive *it* is still used.

[2]Following Abney 1987, I use "DP" rather than "NP" to refer to phrases such as *students who failed Syntax I.*

[3]Of course, DPs interpreted as nominalized functions can be used to refer insofar that they name nominalized functions; thus, "referential" as used here should be taken as a technical term, as characterized in the text.

[4]The relevant sense of "novel" will be taken up in Section 3.3.2.

[5]For example, the Catalan existential is less restrictive in allowing definites in non-list contexts); see Chapter 3.

[6]Outside of the syntax literature, the inclination to link the existential construction to these other sorts of sentences is much weaker. See e.g. Barwise and Cooper 1981, Zucchi 1995 for analyses that explicitly preclude such a connection. Within the syntax literature, see Lyons 1967, Kuno 1971, Kimball 1973, Lakoff 1987 for the rather different view that the existential construction forms a class with locative constructions, a view that is in a sense preserved in the present analysis.

[7]Anticipating my analysis, I will use an asterisk (*) to mark sentences that I take to be ill-formed. Sentences marked with a cross-hatch (#) are infelicitous in the relevant context.

[8]Certain examples involving the definite article and *every*, in which the NP contains an infinitival or modalized relative clause modifier, seem to be exceptions to these generalizations. Examples appear in (i) (pointed out to me by Jim McCloskey), (ii) (from Pollard and Sag 1994), and (iii) (inspired by Moltmann 1995):

(i) There weren't the doctors to staff the clinic.

(ii) There was every reason to leave.

(iii) There was everything you ever could have wanted.

Although I do not have an account for these facts and will not discuss them in this work, note that the presence of such a relative clause does not improve DPs headed by determiners such as *most*, which is not universal, and *each*, which unlike *every*, always has a

distributive, and never a "maximizing," effect:

(iv) *There were most reasons to leave.

(v) *There was each reason to leave.

[9]There seems to be some cross-linguistic variation with respect to the felicity of partitives in the existential. See e.g. de Hoop 1990, Enç 1991, Hoeksema 1989 for relevant discussion.

[10]See Ward and Birner 1995 for a purely pragmatically-based classification of the quantificational DPs licensed in existential sentences which attempts to subsume them under the same generalization used to account for definite DPs. See Section 3.2.2 and Chapter 3, Section 6 for further discussion.

[11]Cf. Nathan 1978 and Hannay 1985. These authors claim that the DPs are not universally prohibited by the predicate restriction, but rather that any state-descriptive DP will be licensed and cite examples such as *There was a woman the president* in support of this claim. My own judgment is that this sentence is bad.

[12]This amounts to a refined version of the claim Milsark 1974 made, viz. that those XPs excluded from the construction were those which denoted more "permanent" properties of individuals.

[13]See e.g. Burzio 1986, Belletti 1988, Safir 1987, Perlmutter and Zaenen 1984, Legendre 1990.

[14]I will presuppose familiarity with GB throughout. See e.g. Chomsky 1986b for an introduction.

[15]I assume for the sake of exposition that the subject of the small clause is adjoined to the maximal projection associated with the predicate (see e.g. Chomsky 1986a for such a treatment); this assumption is not crucial.

[16]Since this prediction depends partly on the assumed GB analysis of *seem*, it is not necessarily made by all analyses of the existential which relate it to copular/passive/progressive sentences. For example, Milsark 1974 and Pollard and Sag 1994, do not make this prediction, because they stipulate the licensing of the expletive with *be* by syntactic and lexical rules, respectively.

[17]Lasnik's (1992) analysis, on which *be* can exceptionally Case mark the subject of the small clause, while *seem* and *appear* are stipulated not to be able to, is similar in this respect.

[18]An analysis for existential *be* on which the expletive was the subject, and the postcopular DP the predicate, of a small clause complement to *be* would be more in the spirit of the conception

of copular and existential sentences defended in Chapters 2-4, although I will not pursue such an alternative here. See Moro 1991 for yet another small clause analysis, which takes the expletive to be the small clause predicate, and the postcopular DP, the subject.

[19]I have focused on approaches positing a common syntactic source, but the same point could be made for those positing a common lexical source (cf. Pollard and Sag 1994).

If, like Pollard and Sag, we take both the DP and the XP to be independent semantic arguments of *be*, we regain the possibility of a semantic or discourse functional account of the definiteness effect; it could be stipulated as part of the semantics or conventional pragmatics of *be*. However, if we continue to maintain that the existential and copular constructions are syntactically and semantically essentially the same, we fail to explain why there is a predicate restriction in the existential, but not in the copular, progressive, or passive constructions (see Section 3.3). While the predicate restriction could of course also be determined lexically by *be*, an analysis on which the DE and the predicate restriction are related is, prima facie, more elegant and interesting.

[20]The sole putative counterexample to the conservativity claim is *only*; however, *only*'s status as a determiner has been disputed. See Keenan and Stavi 1986, Rooth 1985.

[21]Actually, (37), (38) and (39) below are theorems of the definitions of conservativity, co-conservativity, and intersectivity, but no harm will arise from treating them as definitions. Throughout this discussion, in cases where no confusion will arise, I may use *determiner* or *DP* rather than *the denotation of a determiner/DP*.

[22]Keenan and Stavi's notion of determiner is much broader than that of most linguists–it includes e.g. Det+Adjective combinations. The conservativity theorem holds for this generous class of basic determiners and its closure under Boolean operations. In addition, the definitions and theorems generalize to what they term "$n > 1$-place" determiners (viz. *more ... than ...*, as in *more Democrats than Republicans*).

[23]See below for a more precise statement of Keenan's proposal concerning the appearance of these DPs in the construction.

[24]Keenan's intersectivity is more general than B&C's intersectivity; it constitutes a refinement of his notion *existential* from Keenan 1987.

[25]But see Chapter 3, Section 4.2.1 for a nonquantificational treatment of *no* following Ladusaw 1992.

[26]Of course these sentences also admit a narrow scope reading for the quantifier.

[27]The presupposition of descriptive content for *every* and other quantificational DPs corresponds to the intuition that the domain of quantification should not be empty; since the complement to *every* always supplies the domain of quantification, that complement should have a non-null extension. In contrast, DPs with negative determiners have properties which suggest that, at least in some cases, they should be treated not as generalized quantifiers but rather as indefinites constrained to appear within the scope of a semantically potent feature [NEG] (cf. Ladusaw 1992). I will follow Ladusaw in assuming that DPs such as *no student* need not be analyzed as generalized quantifiers. If one does not make this assumption, then it must somehow be stipulated that DPs marked with negative determiners need not carry a presupposition that their descriptive content is satisfied.

[28]The same sort of question is raised by the condition proposed in Zucchi 1995 (his Felicity Condition 1):

Felicity Condition (FC) 1: Existential sentences are felicitous only if the context c (defined in terms of a set of propositions (common ground), a variable assignment function, and a domain of individuals) in which they are uttered entails neither $[\![N']\!] \cap [\![XP]\!]([\![V]\!]) = \emptyset$, nor that $[\![N']\!] \cap [\![XP]\!]([\![V]\!]) \neq \emptyset$ (N′ taken from the postcopular DP in the construction; XP, the phrase which optionally follows the postcopular DP; V, *be*, which Zucchi takes to denote the universal property).

Simply put, this condition requires that at the time of utterance, the discourse model be neutral with respect to the question of whether the descriptive content of the postcopular DP is satisfied by some individual in the domain of that model, where the relevant context for the felicity condition is stipulated to be circumscribed by the XP (The appeal to domain circumscription is not crucial to the present point.) Zucchi's felicity condition is superior to the statement in (52) to the extent that it is more than a simple descriptive generalization concerning the postcopular DP; however, the comments that I make in the text concerning (52) will apply to it as well.

Chapter 2

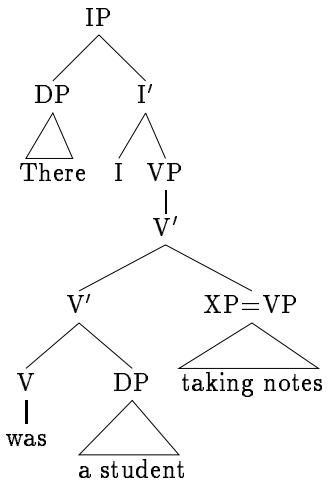
Existential Syntax

2.1 Introduction

In this chapter, I present the D-structure syntax for the existential construction that I will be using for the rest of this dissertation. The structure to be advocated for a sentence such as (61) appears in (62):[1]

(61) There was a student taking notes.

(62)



The proposal embodied in (62) has two crucial properties: First, the DP and XP do not form a constituent. Second, I take the XP to be a *semantic adjunct* similar in status to the depictive adjuncts in (63), for which a VP-internal position has also been defended, with minor differences (Rapoport 1991; see also Carrier and Randall 1992 for a similar proposal for resultatives):

(63) a. She gave me the towel wet.

b. They carried him screaming.

That is, on the view developed here, the XP in the existential construction is neither a complement nor a constituent of a complement to *be*.

This position has also been defended by Zucchi 1995, though on different grounds from those to be articulated here. The proposal thus stands in contrast both to the "small clause" analysis that has been commonly assumed since Stowell 1978,[2] and to analyses that take the XP to be a complement to *be* (e.g. Keenan 1987, Pollard and Sag 1994).

After elaborating further on the relevant notion of VP-adjunct and what I take its syntactic structure to be, I will justify (62), in particular the treatment of the XP as a non-complement to *be*, in two steps. First, I will show why an independent DP and XP are needed in the first place. Second, I will show that neither of applicable diagnostics for small clausehood proposed by Stowell 1991 is reason to argue against the proposed analysis for the existential construction, and that extraction facts in particular offer positive evidence for an analysis taking the XP to be an adjunct rather than a complement.

2.2 Identifying VP-Adjuncts

2.2.1 Description

What I am referring to as predicative VP-adjuncts includes what have been referred to in the literature as "depictives" and "circumstantials," depending on whether they modify an object/theme or subject, respectively (cf. Halliday 1967, Green 1973, Roberts 1988, Rapoport 1991).[3] The discussion here will be confined to

the object/theme-controlled depictives. Some examples appear in (64):

(64) a. Max drank the lemonade unsweetened.

b. Kim handed the book unopened to her sister.

c. That guy always plays his guitar untuned.

The term "VP-adjunct" as used here should *not* be taken to mean "adjoined to VP in the syntax." Rather, I refer to the XPs in (64) as "VP-adjuncts" because they are not semantic arguments of the verbal projections with which they combine, in contrast to the predicate complement of e.g. *consider*: the absence of the predicate in (65)b radically changes the possible interpretation of *consider*, while no such change is effected by the absence of the predicate in (65)d (compare (65)c):

(65) a. We consider Mary enthusiastic.

b. We consider Mary.

c. Kim handed it unopened to her sister.

d. Kim handed it to her sister.

Nonetheless, these predicates have the effect of restricting the state of affairs denoted by the verb in the clause in which they appear, much in the way that an adjective modifies a noun. Moreover, although the adjunct is not semantically selected for by the verb, not every verb licenses an object-controlled depictive adjunct:

(66) a. *Terry kissed her mother$_i$ tired$_i$.

b. *Joan kicked the ball$_i$ wet$_i$.

In contrast, IP-level predicative adjuncts (or "free" adjuncts, Stump 1985), are not restricted in this way:

(67) a. Sad to be leaving, Terry kissed her mother.

b. Hoping for a goal, Joan kicked the ball.

Restrictions such as those exemplified in (66) are the hallmark of structurally local relations.

Green 1973, Andrews 1982, Roberts 1988, and others provide additional, syntactic evidence for the claim that these predicates appear within some projection of VP. For example, the adjuncts in question can accompany the verb in VP- and *though*-preposing and in wh-clefting:

(68) a. Steve warned his brother that he would throw the towel to me wet, and throw it wet, he did.

b. Play the piano out of tune though you may, you will not succeed in annoying the neighbors.

c. What Margaret did was hand the book to Joyce unopened.

Further evidence for the VP-hood of at least object/theme-controlled VP-adjuncts is the fact that they cannot be left behind when the VP is reduced to *do so* (examples from Green 1973, 261):

(69) a. She'll bring them to me alive if you don't do so.

b. *She'll bring them to me alive if she doesn't do so dead.

Finally, to the extent that object/theme-controlled predicative adjuncts can appear sentence-initially, they are interpreted as focus-preposed:

(70) a. Untouched$_i$, they left it$_i$.

b. New$_i$, they bought them$_i$.

The intonation and interpretation associated with these sentences clearly contrasts with that of sentence-level free adjuncts:

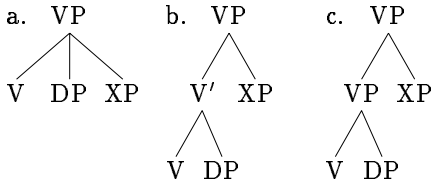
(71) Raw, the eggs will taste awful.

We now need to decide on a D-Structure for VPs containing depictive adjuncts; this is the structure we will subsequently use for existential sentences.

2.2.2 A Proposal for Depictive Adjuncts

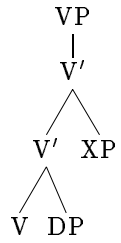
The literature offers us a variety of proposals to choose from for the analysis of the depictives, including a triple branch structure ((72)a; see e.g. Rapoport 1991), sister to V′ ((72)b, e.g. Rizzi 1990), and adjoined to VP ((72)c, Rothstein (1983)):

(72)



The differences between these structures are minor for our purposes. I follow Rizzi in choosing a version of (72)b; however, I differ in taking the node dominating the depictive and V′ to be another V′; that is, I assume base-generated adjunction to V′ is possible, as in (73):

(73)



This assumption is not uncontroversial, but it has the advantage of allowing us to reserve Spec of VP for D-structure subjects (see e.g. Kitagawa 1986, Kuroda 1988), should it be necessary or desirable (see e.g. McNally 1992b).

I follow Rizzi principally because, as he shows (1990:46ff.), the adjunction structure allows for the cleanest analysis of extraction facts such as those to be discussed in Section 4.2. For example, the VP-adjunction option does not allow for a structural distinction between predicative adjuncts and manner adverbials, a distinction that seems motivated on the basis of contrasts in extraction such as the following:

(74) a. How quickly did they eat dinner?

b. *How raw did they eat the meat?

The VP-adjunction structure makes other incorrect predictions (e.g. that the depictive XP can be stranded by VP-preposing) and has been argued against in Rapoport 1991 and references cited there.

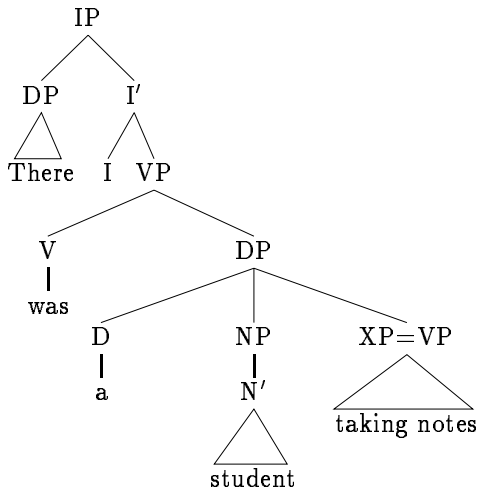
The decision to choose a version of (72)b over the triple branch structure is dictated entirely by the definition of proper head government and the version of the ECP that I will adopt (again, see the discussion of extraction in Section 4.2.); if an explanation for the non-extractability of the predicative XP is possible for the triple branch analysis, then I would have no reason not to adopt it. What is crucial is that depictive XPs are treated as semantic adjuncts, and not as complements or parts of complements.

The next step in our defense of the proposal in (62) is to demonstrate that the XP in the existential construction is not a subconstituent of the postcopular DP.

2.3 Why a DP-External XP Must Be Posited

The idea that the optional XP in existential sentences is a postnominal modifier goes back at least to Jenkins (see references in Jenkins 1975); its most recent proponent has been Williams 1984. On this analysis, a sentence like (61) has only the structure in (75):

(75)



I first present arguments due to Milsark and others that show (75) not to be the only available analysis; I then consider Williams' arguments for (75) and show them not to be compelling when the alternative is (62).

2.3.1 Arguments for Independence

There are at least two convincing arguments in the literature for locating the XP outside of DP and yet internal to VP in the existential construction. First, the simplest and most commonly cited argument is that strings appear in the postcopular position which cannot occupy other positions typically held by DP, e.g. subject position, and which are not amenable to an analysis on which the XP is VP-external. Some examples appear in (76) (cf. Barwise and Cooper 1981, Keenan 1987, from whom I take (76)a):

(76)

a. There are two students who object to that enrolled in the course.

b. There is a woman who knows you working at the Pub these days.

c. There was nobody but Mitzi interested in that movie.

As both Keenan and Barwise and Cooper point out, and as the data in (77) confirm, the postcopular material in (76) cannot replace a DP in subject position:[4]

(77) a. *Two students who object to that enrolled in the course just came in. (Keenan 1987, (28b), ?* is his judgment)

b. *A woman who knows you working at the Pub these days just won the lottery.

c. *Nobody but Mitzi interested in that movie will be at the theater.

There are at least two reasons to believe that the XPs in (77) cannot be adjoined to IP. First, IP-level modifiers are generally preposable, but the XPs under discussion are not:[5]

(78) a. *Enrolled in the course, there are two students who object to that.

b. *Working at the Pub these days, there is a woman who knows you.

c. *Interested in that movie, there was nobody but John.

d. *To blame, there was only myself.

Note that depictive adjuncts likewise fail to prepose:

(79) a. *Cooked, they ate the vegetables.

b. *Unopened, she handed her sister the book.

Second, an IP-adjunction analysis violates the locality condition generally assumed to govern controller-controllee relations. A version of this locality violation can be seen in the contrast in (80). IP-adjoined predicative XPs (which, when postposed, can be identified by a preceding intonation break; cf. (80)a), unlike VP-adjoined XPs, cannot modify a DP that is interpreted as a bound variable (compare (80)b and c; I am assuming following Ladusaw 1992 that *nothing* is so interpreted). The unacceptability of (80)b is probably

due to a requirement that an adjunct with an operator-bound controller be within the scope of the operator binding the controller. The fact that the DP in the existential sentence in (80)d can control a sentence-final XP thus argues against IP-adjunction:

(80) a. She ate the meat with her bare hands, uncooked.

b. *She ate nothing that could not be identified, uncooked.

c. She ate nothing that could not be identified uncooked.

d. There was nobody who knew French available to guide the visitors.

Since we find postcopular material that is neither analyzable as DP nor amenable to an analysis where the DP-external material is IP-adjoined, on distributional grounds we are forced to posit an independent XP which is somewhere within the sentence projection. My claim is that it is adjoined to V′.

A second argument for locating the XP external to DP is that extraction and comparative deletion can target the latter without the former (Keenan 1987):

(81) a. Who is there performing at the Academy this week?

b. The new mall ruined the few businesses there were still functioning downtown.

c. There are more students voting for the environmental initiative than there are voting against it.

Compare the ungrammatical results obtained when extraction or comparative deletion targets the head of DP while leaving a postmodifier untouched:

(82) a. *Who do the musicians admire performing at the Academy this week?

b. *The businesses to which the city has given a tax break still functioning downtown are in greater danger than ever.

c. ??The lobby endorsed more candidates supporting gun control than they did opposing it.

A final argument concerns those cases where DPs headed by *every* can appear in existential sentences (see Lumsden 1988 and Chapters 1 and 3), such as (83):

(83) a. There is every breed of dog with any chance of winning competing in the competition.

b. There is every kind of music anyone can imagine available on that jukebox.

Ladusaw 1979 showed that the semantic properties of *every*, in concert with the conditions governing the distribution of negative polarity items (NPIs) such as *any*, entail that *every* licenses NPIs only within the DP it heads, and not external to that DP (compare (84)a and b):

(84) a. Everyone with any money has bought a VCR; why haven't you?

b. *Everyone has any money.

If the final XPs in (83) were part of the postcopular DP, we would expect to find NPIs licensed within them as well. However, the examples in (85) show that they are not: (85)a is ungrammatical, and (85)b allows only the quasi-universal "free choice" reading for *any jukebox*, and not the existential reading it would have in the scope of an NPI licenser:

(85) a. *There is every breed of dog with any chance of winning competing in any competition.

b. There is every kind of music that anyone can imagine available on any jukebox.

I believe the above facts are sufficient to show that the postcopular string cannot always be just a DP.

2.3.2 Williams' Counterarguments

Williams 1984 offers several arguments for the DP-only structure in (75), but none of them are compelling, largely because they are based on the assumption that the XP is a complement just like the postcopular complement in other copular constructions–an assumption that I do not make.

First, he points out that the XP is optional, which is surprising if the XP is structurally related to that in other copular sentences, but expected if the XP is a postnominal modifier. On the adjunct analysis advocated here, the optionality of the XP is predicted.

Williams bases a second argument on the failure of the XP to extract, citing the following example:

(86) *How happy was there someone?

Observe again, however, that failure of extraction is not an argument against positing an independent DP and XP; it only argues against analyses on which the XP is treated as a complement. In Section 4.2 I will show how the structure I advocate predicts (86).

A third argument is that only the DP analysis predicts the prohibition on DP codas, as in (87):

(87) *There is a senator a CIA agent.

Again, this is a valid criticism of an analysis that takes the XP to be just like the complement of a copular sentence, but I will show in Chapter 4 that this prohibition follows from the treatment of the XP as an adjunct. Sketching the argument briefly, it has been claimed that adjunct XPs must be stage level predicates in the sense of Carlson 1977b (see e.g. Rapoport 1991 for defense of this view). Since DPs quite universally pattern as if they were individual-level predicates, they cannot function as predicative VP-adjuncts:[6]

(88) a. *Martha handed me the towel a mess.

b. *Felix was walking home a drunk.

c. *Anna played tennis a child.

Fourth, Williams observes that VP-deletion can target both the DP and XP ((89)a), a fact that is ostensibly unexplained if the two do not form a constituent; a similar point can be made with coordination ((89)b):

(89) a. There was a band playing in the park last Sunday, and there will be this week, too.

b. Today there is a band playing in the park and a theater group performing in Rittenhouse Square.

But this argument is undercut by the fact that these kinds of phenomena are reveal more about S-structure than D-Structure. For example, cases of coordination have been attested (as in (90), adapted from Johnson 1991) involving strings that, given the Projection Principle, could not form a constituent at D-Structure:

(90) Bob ate the vegetables quickly but the meat slowly.

The present analysis could account for this kind of coordination in the existential construction as well as for the VP-deletion in (89)a by motivating the raising of *be* from V to I (or some other functional projection in an exploded INFL). Different versions of this general sort of strategy have been advocated recently by e.g. Larson 1990 and Johnson 1991. Verb raising would give the effect of making a surface constituent of the DP and XP to the exclusion of *be*, while allowing us to maintain the desired D-structure in (62).[7]

A final argument of Williams' involves the failure of Heavy-NP Shift in the construction, as in his (22b), repeated here in (91)a:

(91) a. *There are sick several of George's recent acquaintances.

b. They considered crazy several of George's recent acquaintances.

Williams observes that if the XP were independent of the DP, Heavy-NP Shift should be possible, just as it is in cases like (91)b. The explanation for the failure of Heavy-NP Shift in this case is not fully clear to me. However, the force of this argument is weakened by the fact that Heavy-NP Shift is sometimes blocked by factors other than syntactic constituency, as in the well-known case of double-object constructions:

(92) a. Terry gave her sister a present.

b. *Terry gave a present her favorite person in the world.

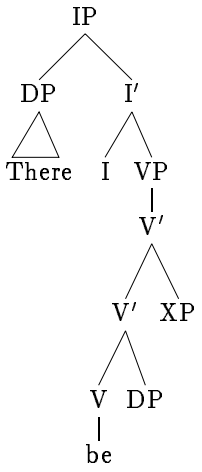
It is thus entirely possible that some alternative explanation for the contrast in (91) can be found.

Thus, with the exception of this last one, none of Williams' arguments gives us any strong reason not to pursue the analysis presented at the beginning of this chapter; indeed, in concert with the positive arguments we have seen for assigning the XP a DP-external position, some of his arguments actually support (62), to the extent that they constitute valid criticisms of analyses on which the XP is treated as an independent complement.

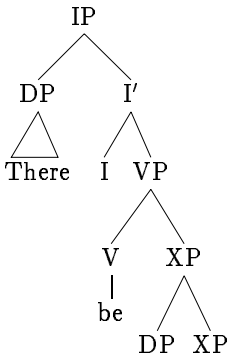
2.4 Supporting the Adjunct Analysis

Having established that the postcopular material does not have to form a DP, we may now turn to the specific proposal in (62), repeated below in (93)a. In this section I discuss the data and other considerations that lead me to adopt (93)a over the small clause-type structure in (93)b, and more generally over a structure in which XP is an independent complement of *be*:[8]

(93) a.



b.



I focus on the small clause analysis because it has been so prevalently assumed in the GB literature; I begin by applying Stowell's 1991 diagnostics for small clausehood to the existential construction.

2.4.1 Stowell's Small Clause Diagnostics

A number of arguments have been advanced for the existence of small clauses in English, most notably in the work of Stowell (e.g. 1983, 1991).[9] These arguments are based on the following facts:

- The appearance of DP-XP strings as the complement to prepositions in absolute constructions (*With Mary gone, we cannot make the decision*)
- The possibility of that string in preverbal position in a copular sentence: *Workers angry about the pay is the sort of situation that the ad campaign was supposed to avoid* (example due to Safir).
- The fact that the DP-XP constitutes a binding domain for reflexives, as seen in the failure of the matrix subject to be a possible reflexive binder in e.g. **Mary considers John proud of herself.*
- The inability of main clause "floating" constituents such as adverbs to intervene between the DP and XP (see below for examples).
- Subject condition effects on the DP, i.e. contrasts in the acceptability of extraction (see below for examples).

These arguments are largely theory-independent. In addition, certain theory internal considerations motivate the small clause, most strongly, the requirement that all predicates–main, subordinate or adjunct–have a (local) syntactic subject, be it overt or null; and the requirement that all arguments of a predicate must be projected within the maximal projection of that predicate. Since these theory-internal considerations are bound up with assumptions about interpretation that I do not share, and since it is

certainly possible to construct appropriate interpretations for sentences without committing oneself to these assumptions (see in particular Chierchia 1984, 1985 for discussion and a view to which I am sympathetic), I will not consider them in evaluating the small clause analysis.

Of the five arguments based on these facts, only two are potentially useful in the case of the existential construction, viz. those based on the floating constituent data and the subject condition data. Arguments sensitive to the first two bulleted facts are obviously of no use because we are evaluating the status of a postverbal string, and an argument from the binding facts (third bullet) cannot be made because there is only one DP in existential sentences that can serve as a (relevant) potential binder, given that the subject is an expletive.

The "Floating" Constituent Argument

Postal 1974:146ff., citing Kuno 1972, makes the claim that adverbs with matrix construal cannot be inserted in a clausal complement to the matrix predicate, on the basis of contrasts such as that in (94):

(94) a. I have found that Bob recently has been morose.

b. I have found Bob recently to be morose.

The adverb in (94)a is construed exclusively with the downstairs clause, while that in (94)b has either matrix or downstairs construal. Postal takes these facts to support the hypothesis that *Bob* in (94)b does not form a surface constituent with the infinitive.

Stowell 1991 takes up this argument and uses the impossibility of a matrix construal in (95)a, in contrast to the acceptability of such a construal in (95)b and c, as evidence that the postverbal material in (95)a is a small clause constituent:

(95) a. John considers Bill sincerely foolish (* on matrix construal)

b. John promised repeatedly to leave.

c. John ordered Mary repeatedly to leave.

Now, an adverb interpolated between the DP and XP in an existential sentence is generally not construable as modifying the main clause, as pairwise comparison of the examples in (96) shows:

(96) a. There was often a student interrogated by the dean.

b. There was a student often interrogated by the dean.

c. There was obviously nobody getting shot in that part of town.

d. There was nobody obviously getting shot in that part of town.

Though this might be taken prima facie as an argument for the small clause analysis, the argument depends on demonstrating that Postal's claim is a biconditional: that is, we have good evidence that if the adverb appears in a downstairs clause, matrix construal is impossible; but is it the case that if matrix construal is impossible, the adverb must be in a downstairs clause? The facts in (97) suggest that this second half of the biconditional fails, and therefore render the adverb interpolation facts inconclusive as a diagnostic for the relation between the DP and XP in the existential. The sentences in (97) contain two complements and a depictive adjunct controlled by the DP *a book*. This adjunct cannot possibly form a small clause with its controller, since the two are not adjacent, nor can it form a small clause with e.g. *to Mary*, since that would result in the wrong interpretation. Nonetheless, when the adverb appears immediately prior to the adjunct, it can only be construed as modifying the adjunct predicate:

(97) a. Bob handed boxes to Mary often unopened.

b. Bob put boxes on the counter repeatedly unopened.

The facts do not change when a normal transitive verb is used: the adverb in (98) cannot be construed as modifying the main verb:[10]

(98) The child ate vegetables rarely uncooked.

A complete explanation for these facts would entail more investigation than can be done here, since the semantics of adverbials is

quite complex and must be controlled for. However, I venture the following hypothesis: Assume the adverbs under consideration here are generated right-adjoined to VP and that the effect of adverb interpolation in the VP is really a case of attempted extraposition of VP-internal material past the adverb. Some support for this position comes from the fact that adverb interpolation, though generally quite acceptable between DP and PP, is quite strange if the DP following it is light, but acceptable if the DP following it is heavy:

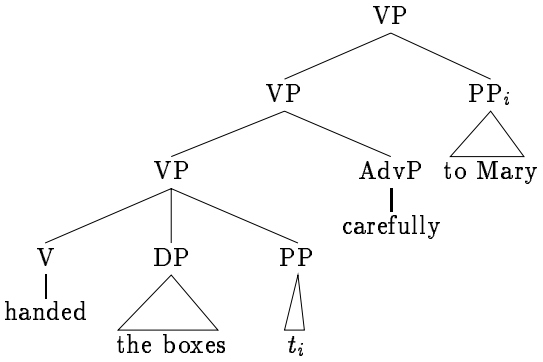
(99) a. ??I tossed Joan carelessly the book.

b. I tossed Joan carelessly the beautiful book she had loaned me last week.

The VP for the sentence in (100) will then have the structure in (101) (I adopt the tripartite structure for the sake of simplicity; it is not crucial):

(100) Bob handed the boxes carefully to Mary.

(101)



If this is the right structure, we can account for the facts by showing that rightward movement of certain complements, but not adjuncts, is licensed. To determine whether and how the relevant structures are licensed, some theoretical notions will have to be introduced. The basis for the analysis will be Rizzi's Relativized Minimality (Rizzi 1990) approach to the licensing of extraction.

Before proceeding, let me lay out the definitions of the relevant theoretical notions to which I will be appealing.[11] I assume the

following definitions of head and (A-bar) antecedent government, adapted from Rizzi 1990, Chapter 1:

(102) Head Government: X head-governs Y iff
(i) X is a head and X m-commands Y
(ii) X is A, N, P, V
(iii) no barrier intervenes
(iv) Relativized Minimality is respected.

(103) (A-bar) Antecedent Government: X (A-bar) antecedent-governs Y iff
(i) X and Y are co-indexed
(i) X c-commands Y
(iii) no barrier intervenes
(iv) Relativized Minimality is respected.

Relativized Minimality is defined as follows:

(104) Relativized Minimality: X α-governs Y only if there is no Z such that:
(i) Z is Typical Potential α-governor of Y
(ii) Z c-commands Y and does not c-command X.

In addition, I adopt a conjunctive definition of the Empty Category Principle (ECP, Rizzi 1990:32):

(105) ECP: A non-pronominal empty category must be
(i) properly head-governed, and
(ii) theta-governed or antecedent-governed.

I further follow Rizzi in defining proper head government as government by X^0 under sisterhood. Theta government is understood to exclude inter alia lexically selected adverbs, measure phrases, and idiom chunk complements. Thus, none of the italicized constituents in the examples in (106) are theta-governed:[12]

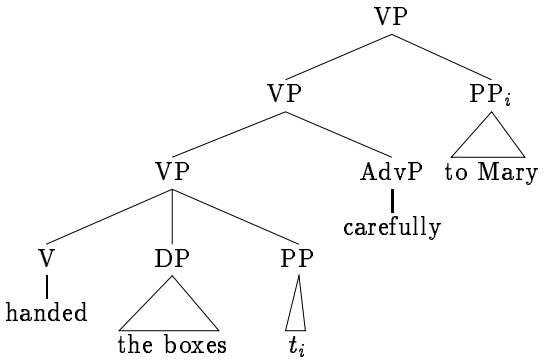
(106) a. The dog behaved *badly*.

b. Those boxes weigh *thirty pounds*.

c. You're making *little headway*.

With these theoretical preliminaries in hand, we can proceed. Consider (101) again, repeated in (107):

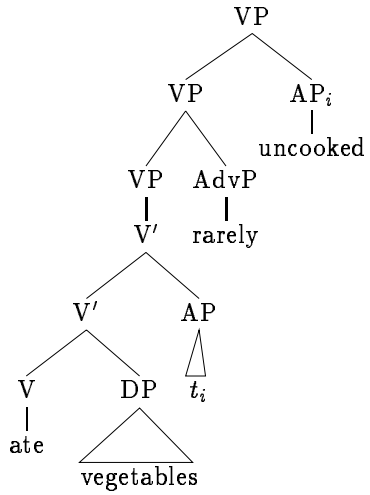
(107)



The trace of the dative PP is properly head-governed under the sisterhood definition of proper head government adopted here. It is also theta-governed, since it receives a theta-role from the verb. Consequently, both clauses of the ECP will be satisfied, and the structure is licensed.

Now consider the VP structure for (98):

(108)



This structure will not be licensed because the trace of the extraposed AP is not properly head-governed. As failure of proper head

government is a sufficient condition for violation of the ECP, the structure is ruled out and the corresponding sentence is predicted to be ungrammatical. Since the adverb cannot be construed as if it were adjoined to VP (i.e. as modifying the main verb) without engendering an ECP violation, the only possibility is to construe it as a modifier of the adjunct predicate. Since, on the analysis advocated in this chapter, the XP in the existential construction is adjoined to V′, just like the depictive adjunct in (108), the explanation sketched here for the interpretation of (98) will carry over to the facts in (96). Due to the availability of such an alternative account of the facts, the failure of main clause construal for interpolated adverbs in the existential construction ceases to be an argument for the small clause structure.

As it stands, this proposal leaves unexplained the contrast between the oddness of adverb interpolation in Raising to Object/ECM ((94)a) and its acceptability in object control cases such as (95)c, as well as the unacceptability of extraposition of complement predicative XPs vs. PPs and infinitives, and a serious attempt at explaining these phenomena would take us too far afield. However, even in the absence of an account of the effect of adverb interpolation between DP and infinitival VP, we may conclude that the facts do not favor the small clause analysis of the existential over the analysis proposed for sentences containing depictive adjuncts in general and the existential construction in particular.

The Subject Condition Argument

The remaining small clause diagnostic involves extraction out of the postcopular DP. Stowell, citing Kayne, observes that we might expect small clause subjects to be like sentential subjects in resisting extraction, then notes that this prediction is not very consistently borne out (cf. his example in (109)c). My own intuitions are that extraction from the subject of a putative small clause depends in part on the DP being extracted from; (109)d seems much better than (109)c:

(109) a. *Who would for John to visit _ bother you?

b. cp. Who would it bother you for John to visit _?

c. ?*Which books did you find the authors of _ very eloquent?

d. Which city did you find pictures of _ enticing?

However, Stowell makes the point that the relevance of subject condition effects depends on the formulation of extraction conditions; thus, to the extent that sentences such as (109)c,d are acceptable, it could be because the DP being extracted from is governed by the matrix verb rather than by the predicate complement. Consequently, the possibility of extraction in cases like (109)c,d does not preclude a small clause structure, though it certainly gives us no positive reason to adopt the small clause structure over some other structure that equally well accounts for the facts.

As it turns out, extraction is consistently acceptable from the postcopular DP of the existential:

(110) a. Which book was there an author of _ on TV?

b. The politician about whom there was an article _ published in the *Voice* could not be reached for comment.

c. It was Elizabeth Taylor that there was a feature on _ in this week's *People*.

d. What there was no solution to _ was the candidate's image problem.

e. To this problem, there is only one solution _.

This result is perfectly consistent with the structure proposed at the beginning of the chapter, since the postcopular DP is a direct argument of *be*. Therefore, the absence of subject condition effects gives us no reason to favor a small clause analysis over the analysis in (93)a (or, again, a triple branch analysis on which the XP is treated as a complement). If anything, the fact that (110)a is fully acceptable in contrast to (109)c raises doubt about the appropriateness of the small clause structure for the existential.

We have seen that neither of the viable tests suggested by Stowell for identifying small clauses supports a small clause-type analysis over the XP-as-adjunct analysis in (93)a. I now turn to evidence that lends positive support to the latter analysis.

2.4.2 Extraction

Two kinds of extraction support the position that the XP is an adjunct and not a complement. First, if the XP were a complement, then we would predict it to be extractable, just as the XP complement to *consider* is extractable. But, as Williams 1984 observed, it is not:

(111) a. How clever do you consider Angela?

b. How happy did the award make him?

c. *How available was there a man?

d. *How sick were there children?

Second, adjuncts and complements differ in that the extraction out of the latter is more restricted than is extraction out of the former (Huang 1982). Though theta-governed complements can be extracted from an adjunct, as in (112)b (where the adjunct is an object-controlled depictive), the same is not possible for material that is not theta-governed: (112)d,f,h, which respectively show the extraction of an adverbial, idiom chunk complement, and measure phrase from an adjunct, are all bad:

(112) a. We cornered her stealing the boxes.

b. ?What did you corner her stealing?

c. We cornered them behaving badly in the yard.

d. *How badly did you corner them behaving in the yard?

e. We ran into them trying to make headway on the problem.

f. *How much headway did you run into them trying to make?

g. We found the box weighing more than a pound less than it was supposed to.

h. *How many pounds did you find the box weighing?

The same point can be made with subject-controlled XP-adjuncts: We can extract a complement from within the adjunct ((113)b) but not any material that is not theta-governed (e.g. (113)d,f):

(113) a. Frank arrived wearing two shirts.

b. ?How many shirts did Frank arrive wearing?

c. Frank arrived behaving quite badly.

d. *How badly did Frank arrive behaving?

e. Frank arrived weighing only 95 pounds.

f. *How many pounds did Frank arrive weighing?

In contrast, it is possible to extract both theta-governed and non-theta-governed material from a complement, as the examples in (114) demonstrate:

(114) a. Of what do you consider Hillary capable?

b. How badly do you consider her capable of behaving?

c. How much headway do you consider her capable of making?

d. How many pounds do you consider the horse capable of carrying?

Given this contrast, the prediction is clear: if non-theta-governed material such as an adverbial or an idiom-chunk cannot be extracted out of the XP in the existential, we have good reason to conclude that the XP is an adjunct. If the extraction is grammatical, we have support for the claim that the XP is a complement.

The facts support the adjunct analysis. Though we see from the examples in (115) that extraction of theta-governed constituents from within the XP yields a grammatical result, the comparable examples in (116) showing extraction of measure phrases, adverbials, and idiom chunks are quite bad:

(115) a. To whom has there just been a celebrity introduced?

b. ?How many cookies have there been children baking?

(116) a. *How many miles a day are there people running?

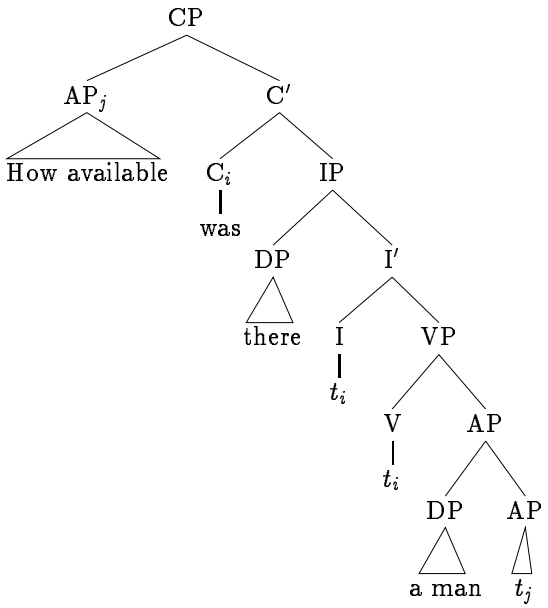
b. *How badly has there been a man shot?

c. *How much headway could there be people making?

Let us now see how these contrasts support the analysis in (93)a over that in (93)b.

I first show how only the V′ adjunction structure accounts for the contrast between (111)a and b, focusing on the predictions concerning the (b) sentence. A small clause structure for (111)b appears in (117):

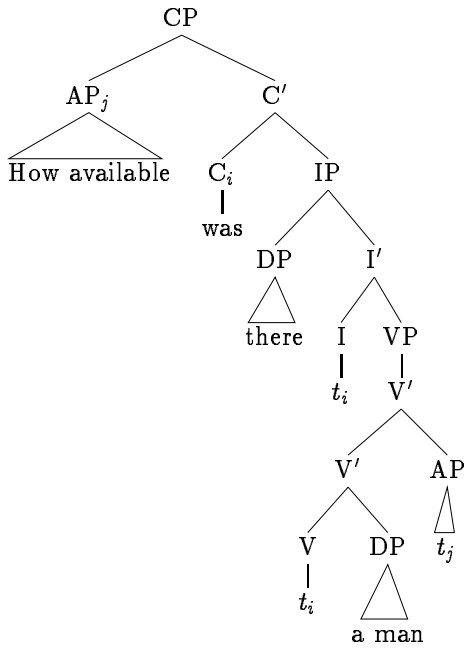
(117)



The discussion will presuppose the definitions introduced in the treatment of adverb interpolation in Section 4.1. The small clause (here, AP) is both properly head-governed and theta-governed, since it is semantically selected by the verb, and a sister to it as well; and these properties of the small clause are inherited by the maximal projection that is its head, viz. the AP sister to DP (cf. Rizzi 1990:49). The AP's trace is thus properly head-governed and theta-governed, with no intervening potential head-governor to violate Relativized Minimality. Finally, no barriers are crossed by the chain connecting *how available* to the trace. The structure in (117) should therefore be licensed, and the sentence is incorrectly predicted to be grammatical on the small clause analysis. The situation would be in all relevant respects the same if the AP were not part of a small clause, but were instead an independent complement to the verb.

However, if we adopt the analysis of the existential construction advocated in this chapter, taking the XP to be an adjunct, we have the following for (111)b:

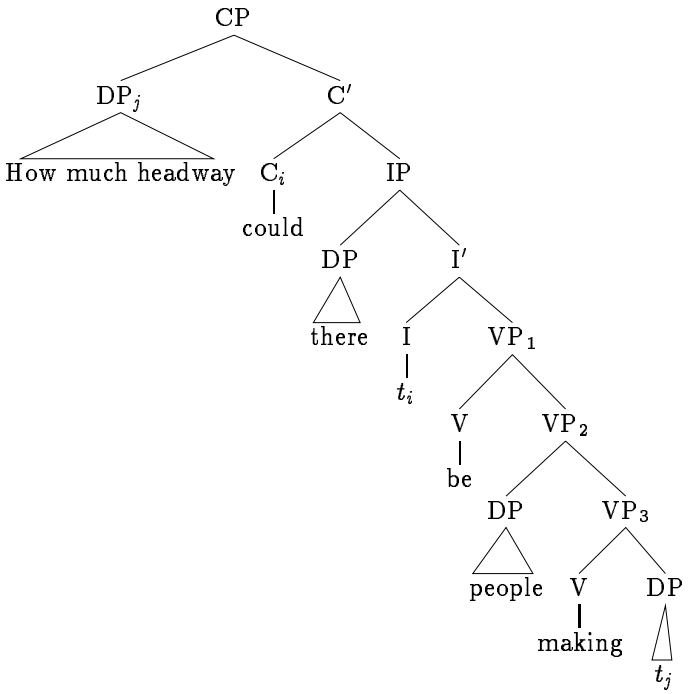
(118)



Adjoined to V′, the XP is not properly head-governed, since proper head government is defined as government under sisterhood to V^0. The absence of proper head government results in an automatic violation of the ECP, under the conjunctive definition adopted here. The structure in (118) is, therefore, illformed, in accord with the ungrammaticality of (111)b.

The small clause analysis also incorrectly predicts that non-theta-marked material can extract from within the XP, as in the case of the idiom chunk complement in (116)c. On this analysis, (116)c has the structure in (119):

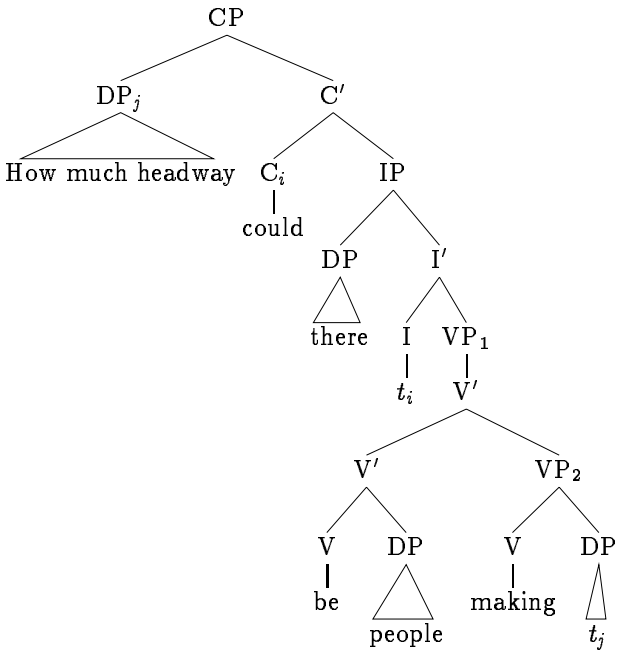
(119)



The trace of the idiom chunk is both head-governed by the verb and antecedent-governed by the phrase in Spec(CP), satisfying both clauses of the ECP. Crucial to the antecedent government of the trace is the fact that the small clause (= VP_2 in (119)) is semantically selected by *be*; as such, it will not be a barrier for extraction of the idiom chunk.[13] As before, the analysis works in exactly analogous fashion for a non-small clause structure in which the XP is treated as a complement.

In contrast, on the V′-adjunction analysis advocated here, (116)c has the structure in (120):

(120)



Since it is not semantically selected by the verb, the XP (= VP_2) constitutes a barrier to government. Though the trace is properly head-governed by *making*, it is neither theta-governed (since idiom chunks are not theta-governed) nor antecedent-governed (since VP_2, as a barrier, will block antecedent government). The structure is therefore not licensed, and the sentence is correctly ruled out.

We see, then, that extraction affords a particularly clear reason to prefer an analysis on which the XP is treated as an adjunct to one on which it is treated as a complement, the small clause analysis being a variety of the latter.

2.5 Chapter Summary

In this chapter I have argued for a syntactic analysis of the existential on which the sentence-final XP is an adjunct, and not a complement, of the copula. In addition to the motivation provided here, the analysis has at least two positive consequences.

First, the optionality of the XP follows directly. Though of course it has always been possible to account for bare-DP existentials by independent stipulation on analyses taking the XP to be a complement, on the analysis defended here that stipulation is no longer needed. We may take the DP to be the sole complement to *be* and license the XP by the independently needed rule that licenses predicative VP-adjuncts.

Second, in taking the XP to be an adjunct and not a complement, the proposed analysis dissociates the existential from the copular construction. This dissociation has two positive consequences which were discussed in Chapter 1: It opens the door for an explanation of the predicate restriction, which was argued to be inexplicable on an analysis that linked the existential and copular constructions; and it eliminates the incorrect prediction that other varieties of copular construction (specifically, those built around *seem* and *appear*) should have existential counterparts.

In addition, the analysis developed in this chapter makes a cross-linguistic prediction, namely that the range of predicative XPs found in the existential in a language will correlate with the range of predicative adjuncts in the language. Analyses on which the XP is treated as a complement fail to make any such prediction.

Notes

[1]This sentence has an alternative analysis on which all of the postcopular material is within DP; however, this alternative will not be relevant for the present discussion.

[2]See also Jenkins 1975 for a proposal very similar to the small clause proposal.

[3]Though there are interesting similarities between depictives and the other species of predicative VP-adjunct such as resultative predicates (Green 1973, Carrier and Randall 1992, Fernald 1991, Goldberg 1994) and purpose clauses (Bach 1982, Jones 1985), the remarks made in the rest of this chapter should not be construed as claims about these other classes.

[4]Barwise and Cooper claim that the postcopular material can, counter to expectation, appear as the complement to certain prepositions, as in (i):

(i) Among the people sick were Bob and his wife.

However, they provide only two examples, neither of which involve relative clauses. In contrast to (i), (ii) sounds bad:

(ii) *Among the students who hate homework enrolled in the course were Martha and Jay.

A further weakness in this argument is the fact that some prepositions arguably can take small clause complements, an clear example being *with*:

(iv) With Gates no longer police chief, we will all feel safer.

[5]There is a systematic set of exceptions to this generalization involving participles headed by verbs of motion or location, as in (i):

(i) Sitting outside in the yard, there were three children.

However, this does not weaken the argument in the text insofar as the data in the text still must be accounted for.

[6]The claim that VP-adjunct predicates must be stage-level is something of an oversimplification. There is systematic set of exceptions to this claim, as in (i):

(i) Martha returned from Belize a new woman.

The licensing of this kind of modification depends on special factors that will be elaborated on in Chapter 4; for the moment it is sufficient to observe that relevant properties of the existential construction will preclude modification by an adjunct DP.

[7]For alternative analyses of putative nonconstituent coordina-

tion, see e.g. Dowty 1988 and Steedman 1990.

[8]I show here an adjunction analysis of small clauses, as in e.g. Chomsky 1986a. The arguments discussed here would not significantly change under the other analyses of small clauses with which I am familiar.

[9]Evidence for small clauses has been adduced in other languages, e.g. Irish (Chung and McCloskey 1987). Since my purpose is only to evaluate the appropriateness of the small clause analysis for the existential construction, and not to evaluate the viability of small clause analyses for other constructions in English or other languages, I will discuss only evidence that is relevant to English.

[10]Similar facts also hold for the resultative construction, which Carrier and Randall 1992 have argued not to be amenable to a small clause analysis:

(i) They painted the barn carelessly red.

[11]The reader is referred to Rizzi 1990 for additional details, and to Chomsky 1986a:10ff. for the relevant definition of *barrier*.

[12]Rizzi points out certain problems with this notion of theta government. The present proposal could be reformulated in terms of his Chapter 3 treatment of the ECP, but not without technical complications that are not of particular relevance here.

[13]It must be the case that the head of the small clause (VP_3) does not constitute a barrier either.

Chapter 3

The Existential, Descriptions, and Instantiation

3.1 Introduction

This chapter addresses the interpretation of the postcopular DP and the issue of the definiteness effect, defending the following proposal, introduced briefly in Chapter 1:

(121) The existential predicate in English is interpreted as a property of a description of an entity, specifically the property that the description is instantiated by some entity at some index. The addition of an existential sentence to a context entails the introduction of a discourse referent that corresponds to the instantiation of the description-argument into the domain of the discourse model. An additional felicity condition requires this referent to be novel.

(121) consists of two logically distinct claims: one about the argument structure of the existential predicate (viz. that it is interpreted as a 1-place property of a special sort of entity whose nature will be elaborated on shortly), and one about the conditions on and effect of an assertively uttered existential sentence with respect to

the domain of discourse. From the first claim it will follow that certain necessarily quantificational DPs, though not definites, are excluded from the construction. The felicity condition in the last sentence of (121) is needed to exclude the definites. That is, (121) entails the claim that what we have been calling the definiteness effect consists of two independent phenomena.

It will become clear below that the first claim in (121) can be recast as the assertion that the argument of the existential predicate is in some sense intensional; however, it differs notably from other intensional arguments inter alia in that the existence of an individual fitting the description contributed by the postcopular DP is entailed.

The idea that the postcopular position in the existential construction is in some sense intensional is perhaps surprising, but it has surfaced before under the guise of the claim that the postcopular DP is somehow "nonreferential" (Fodor and Sag 1982, Safir 1987; indeed, I believe Lyons attributes a similar observation to Frege). My own motivation for exploring this possibility grew out of the observation that in several respects the postcopular DP in the existential construction resembles a predicate nominal–perhaps the prototypical exemplar of nonreferentiality. Some of these similarities will be introduced in the next section.

The task of interest is to develop an interpretation for the existential construction that will clarify the sense in which its argument is intensional or nonreferential, and more generally, which will clarify these phenomena themselves. Specifically, our interpretation should allow us to capture appropriate similarities among the argument of the existential predicate, the predicate nominal, and more prototypical examples of intensional arguments such as the complement to *seek*, as well as their differences.

I will ground the interpretation to be developed here in a version of the property theoretic semantics of Chierchia and Turner 1988, which grows out of independent work by both authors. Specifically, I will argue that the argument of the existential predicate must be interpreted as an entity of a special sort, viz. the entity correlate of a property or *nominalized function*, rather than as an "ordinary" entity. This proposal is close in spirit to the claim that the existential predicate is a predicate of something like a Carlsonian kind (Carlson 1977b),[1] and indeed Chierchia 1985 sug-

gests that nominalized functions might be appropriate interpretations for kind terms. I will posit a similar interpretation for the predicate nominal, following proposals by Farkas 1981 and Partee 1987, although I will not argue for this at any length. Note that the predicate nominal indeed manifests one of the hallmarks of an entity-denoting expression, namely, that it can be the target of quantification under certain circumstances (Williams 1983):

(122) Fred has been every kind of doctor.

We can paraphrase (122) as: "Every kind of doctor is such that Fred has been that kind of doctor." If we adhere to the commonly accepted position that the predicate nominal is interpreted as either a set of individuals or a functor of some sort, we are forced to abandon the position that quantification in English is strictly first-order. Since, as Chierchia has argued, restricting quantification to the entity domain is desirable for both theoretical and empirical reasons, it is worth exploring the position that the predicate nominal is interpreted as some sort of entity, albeit a different sort of entity than that identified by e.g. *Fred*. Property theory offers the sortal distinctions within the entity domain that we need to do this.

Taking the argument of the existential predicate to be a nominalized function will lay the foundation for establishing a link between it and the predicate nominal (though certain obvious differences will have to be accounted for), and will hopefully lead to insight into the intuition that the argument of the existential has something in common with more familiar intensional arguments. The following comment from the introduction to Chierchia et al. 1989:7 suggests why:

> Turner notes further that positions where properties and propositions can be referred to quantificationally are precisely those that, according to Frege, create intensional contexts. Frege proposed that in oblique positions, expressions have their ordinary sense as extension. This suggests that we might want to embed intensional creatures (i.e. properties and propositions) in the domain of individuals.

Perhaps, then, the similarities between the argument of the existential predicate and familiar intensional arguments reduce to their interpretations. One of the aims of this chapter is to provide independent motivation for interpreting the postcopular DP in the existential construction as a nominalized function (*nf*). The availability of independent means for identifying nfs will open the door for future evaluation of the correlation mentioned in this quote, by enabling us to decide on a case by case basis whether DPs in the full range of classically intensional argument positions can or must be interpreted as nfs. This, in turn, should eventually result in a better understanding of intensional phenomena more generally.

The second part of the claim in (121) concerns the effect of uttering an existential sentence on the discourse model, i.e. what I will call its *context change potential*, following Heim 1982.[2] I will take a discourse model to be defined in terms of a set of world-assignment function pairs (which satisfy the formulas that constitute the context) and a domain of discourse referents. Although the domain of a discourse model is largely determined by the set of DPs explicitly introduced in the course of the conversation, it is not exclusively so determined. To give just one example, it has been argued (e.g. Prince 1992, Condoravdi 1992b, though see Barker 1993 for a different view) that the certain DPs license inferences that other individuals besides those to which they refer are part of the domain. Such inferencing is ostensibly seen in the acceptability of the italicized definite in the following discourse:

(123) A ghost appeared at a house on Wellington Street. *The residents* were frightened.

Though definites must typically be anaphoric, the use of the definite in (123) is arguably rendered felicitous by the introduction of the DP *a house on Reed St.*, plus the background information that houses generally have residents.

The conditions determining the licensing of additional discourse referents are nontrivial and heterogeneous, and I will not have anything to say about them here. The point is that this sort of licensing is possible under certain circumstances. My claim, then, is that the existential construction always gives rise to a similar kind of licensing: Under the hypothesis that the existential predicate ascribes the property of being instantiated to a description of an

individual (formalized as a nominalized function), it is unsurprising that addition of an existential sentence to the context licenses, in addition to a discourse referent corresponding to the nf itself, a second discourse referent corresponding to the instantiation of the nf that supports the truth of the existential assertion, since every true nonnegated, nonmodalized existential of the form in (124)a will entail a sentence of the form in (124)b:

(124) a. There is DP XP.

b. An individual which is an instantiation of DP has property XP.

Though future research will perhaps render it possible to derive the licensing of this extra discourse referent from some general principle, for the present, I will assume that it is simply stipulated as part of the context change potential of existential sentences.

(121) further stipulates that this extra discourse referent introduced via the existential construction must be novel. This clause is necessary because both definites and indefinites will be interpretable as nominalized functions on the analysis advocated here, and yet definites are prohibited from the construction except under certain circumstances. Though I will show in this chapter how this novelty condition takes effect, I will postpone discussing its status in the overall interpretation of the construction until Chapter 5.

The rest of this chapter proceeds as follows. I begin by discussing some properties of the argument of the existential predicate and of the predicate nominal that distinguish them from the arguments of other predicates. I will then introduce Chierchia and Turner's property theory, incorporating enough modifications to allow for dynamic interpretation. An interpretation for a fragment of English will subsequently be presented which will be large enough to illustrate some of the consequences of the claim that the argument of the existential predicate is a nominalized function. Once this much of the analysis is worked out, I will introduce definites into the fragment and discuss examples such as (125):

(125) There was the lid to a jar on the counter.

The chapter closes with a comparison of the present analysis with analyses that interpret the existential predicate as a property of

"ordinary" entities, focusing on the data to be presented in Section 2.

3.2 Data to Be Accounted For

3.2.1 Quantificational DPs

We have already seen the definiteness effect facts associated with the existential construction. The copular construction is similar in the following respect: DPs that quantify over ordinary individuals are prohibited from the predicate nominal position, while those that quantify over *kinds* of entities are licensed ((126)a,b). Recall that we find an identical kind of contrast in the existential construction ((126)c,d):

(126) a. *Fred has been every doctor.

b. Fred has been every kind of doctor.

c. *There was every doctor.

d. There was every kind of doctor.

Of course, typically there is no such restriction on the use of quantificational DPs.[3]

3.2.2 Scope

In general, VP-internal DPs such as *many people* may take either wide or narrow scope with respect to clausal negation. Consider (127):

(127) Andy didn't see many people at the party.

On the narrow scope for negation reading, (127) could be true in a situation where Andy saw 100 people she knew at the party, but failed to see 150 others she knew; on the wide scope for negation reading, (127) would be false in such a situation, though it would be true if Andy had seen only 5 people there.

It has long been held on the basis of judgments concerning examples such as (128)a,b that the postcopular DP in the existential construction must always take narrowest scope with respect to

negation and any other clause-level operators. For example, (128)a cannot describe a situation in which 100 pictures were hanging on the wall, even if 150 were not. Similarly, (128)b is unacceptable because *some* must be interpreted with wider scope than negation (Ladusaw 1979), in violation of the observed generalization:

(128) a. There weren't many pictures hanging on the wall.

b. *There hasn't been some student sick at school.

However, it turns out that this narrowest scope requirement is not absolute: The postcopular DP can take wide scope with respect to negation if it is headed by a noun such as *kind, sort, type, variety*– the same nouns that license quantificational DPs in the construction. For example, compare the the acceptability of (129) to the unacceptability of (128)b:

(129) The food critic was annoyed because there wasn't some type of wine on the list.

(129) could be true in a situation where the food critic was annoyed because Merlot was missing, even though Pinot Noir was available.

With determiners other than *some*, the availability of the wide scope interpretation for the DP often requires intonational prominence for the DP, facilitating context, or both (see (130)a). While I do not have an explanation for this, observe that nothing can be done to interpret the DP wide scope when it is not headed by a kind nominal, as in (130)b:

(130) a. The food critic is annoyed because there will not be one variety of wine available, namely Zinfandel.

b. *The food critic is annoyed because there will not be one competent waiter available, namely George.

The postcopular DP in the copular construction manifests the same scopal behavior: (131)a can only be interpreted with negation wide, but (131)b is scopally ambiguous:

(131) a. Terry and Mary aren't two students.

b. Terry isn't one kind of doctor I hoped she would be.

3.2.3 Contact Clauses

A third characteristic shared by the existential and copular constructions involves the distribution of DPs containing a particular sort of postnominal modifier. In several dialects of English, including Hiberno-English and African American Vernacular English, tensed VPs[4] can be used as postmodifiers of certain nominals, in a construction which resembles a subject relative which is missing a relative pronoun or complementizer. Following Jespersen 1927, I will refer to this kind of postmodifier as a *contact clause*. Jespersen noted that DPs containing contact clauses typically show up in sentences with "meaningless existential" subjects, such as those in (132), existential sentences being a paradigm example, as well as in the complement to "existential" *have* and after the copula in some–though not all–contexts:[5]

(132) a. There's a student in my class went to America.

b. This is the girl wants to see you.

c. Here's the boy'll fix it for you.

d. I have a brother works in Dublin.

e. I'm the only one knows how to act.

However, Doherty 1993 shows that contact clauses are generally prohibited from typical extensional contexts, as seen in the (133):[6]

(133) a. *I married the man could do that.

b. *I didn't hit a fella said that.

c. *Anyone does that is arrested.

Interestingly, the only non-copular/non-existential contexts in which contact clauses can appear are modal or intensional:

(134) a. I want to marry a man always pays his debts.

b. I wouldn't hit a fella said that.

c. Anyone does that should be arrested.

Given the ungrammaticality of the examples in (133), the licensing of contact clauses in the existential construction is surprising if the postcopular DP is interpreted as an ordinary entity in an extensional context.

3.2.4 Relative Clauses

A fourth special property of the postcopular DP in the existential construction and the predicate nominal involves relativization. First, for many (though not all) speakers, the DP in the existential construction cannot be relativized with wh-relative pronouns, especially *who* ((135)a), although it can be relativized with *that* or a null complementizer ((135)b; "%" indicates a dialect split):

(135) a. %The people who there were at the party were drunk.

b. The people (that) there were at the party were drunk.

This is true of the predicate nominal as well:

(136) a. *They dressed like the eccentric women who they were.

b. They dressed like the eccentric women (that) they were.

Moreover, the relativized nominal in both cases can follow only a limited class of determiners, all of which have universal force. The range of determiners available for DPs modified by relatives formed from the existential are illustrated in (137)a,b. A sample of those excluded appears in (137)c,d:

(137) a. The/Every/All the beer there is is cold.

b. Any/Whatever beer there is is cold.

c. *A/Some/John's beer there is is cold.

d. *Most/Many/Three/Several people there were at the party were drunk.

Nominals modified by relatives formed out of the predicate nominal are subject to an even more stringent condition: they can be

preceded only by *the*, with the exception of examples such as those in (139):

(138) a. I tell this story not to the child you are now, but to the man you are going to be. (Jespersen 1927, citing H.G. Wells)

b. *I tell this story not to every/whatever/any child you are now, but to the man you are going to be.

c. *I tell this story not to a/some/John's child you are now, but to the man you are going to be.

(139) a. They respected everything she was.

b. all the things you are

Of course, neither restriction holds for relativization in ordinary contexts:

(140) They talked to some/many/a few people who had voted for Brown.

See Carlson 1977a for additional details concerning relativization involving the existential construction.

To summarize, we have seen four sorts of cases in which the postcopular DP in the existential construction patterns with the predicate nominal to the exclusion of ordinary referential DPs in extensional contexts. Any analysis of the construction should have something to say about this. Since it is not obvious how a theory that interprets the postcopular DP as an ordinary individual or generalized quantifier over such individuals could account elegantly for this disparate range of facts, we have incentive to pursue a different line of analysis. Later we will look at these facts again, using them to compare the present proposal with analyses based on more standard assumptions about DP interpretation.

3.3 Property Theory

In this section I introduce a version of the PT_1 property theory of Chierchia and Turner 1988, modifying it enough to allow for a dynamic interpretation of utterances.

One of the principal advantages of a property theory is its richer ontology. As has been discussed in the recent linguistics literature, most notably by Chierchia 1984, natural languages arguably have the expressive power to treat propositions and properties as entities, as in the following examples:

(141) a. The following proposition is true.

b. Clarity is a property of any good piece of writing.

Consequently, the ontology of the interpretive theory we use should be rich enough to include them. The positing of entities corresponding to properties has been largely motivated by the desire to provide a semantics for statements involving self-predication and to resolve the associated paradoxes; however, our interest in properties will mainly concern their potential contribution to our understanding of intensionality and (non)referentiality (see Farkas 1981, Zimmermann 1992, Van Geenhoven 1992, for appeals to properties or property-like objects in the analysis of intensional phenomena).

3.3.1 The Syntax of PT

Building on the PT_1 of Chierchia and Turner (hereafter, C&T), I begin by taking the ontology of the property theory to consist of four basic sorts of entities and a set of complex sorts as specified in (142), below.[7] The entities (E) are divided into two subsets, the set U of "urelements," or what I will sometimes refer to as the "ordinary" individuals, and the set NF of nominalized functions, which are the entity correlates of properties. Properties will be construed as functions from entities to entities–that is, they are not entities themselves, but rather objects of complex sorts.[8]

The set U contains as a subset the set I of *information units*, which correspond to a pre-theoretic notion of propositions; the term "proposition" will have a technical use below. Thus note that though U consists of what I refer to as the "ordinary" individuals, it does not have to consist exclusively of entities that are "concrete": the information units, for instance, are not concrete in any intuitive sense.

The sorts of PT are summarized in (142):

(142) a. Basic Sorts: E, the entities,
$U \subseteq E$, the "urelements,"
$I \subseteq U$, the information units,
$NF \subseteq E$, the entity correlates of properties.

b. Complex Sorts: $< \alpha, \beta >$ where α, β are Basic or Complex Sorts.

We may want to place other conditions on the structure of the entity domain (e.g. to allow for an analysis of plurals), but I will not do so here as it will not be necessary for our purposes.

The language PT may have constants of any sort (basic or complex), but it will have variables only of the basic sorts. That is:

(143) a. For any sort r, $Cons_r$ is a constant of sort r

b. For $r = e,i,u,nf$, Var_r is a variable of sort r

The meaningful expressions of PT (ME_{PT}) will be defined recursively (where "ME_α" stands for "a meaningful expression of sort α"). The base of the recursive definition appears in (i); (ii) simply states that the meaningful expression of PT are ordered with respect to each other so as to reflect the structure of the entity domain:

i. $Var_\alpha, Cons_\alpha \in ME_\alpha$

ii. $ME_i \subseteq ME_u; ME_u, ME_{nf} \subseteq ME_e$

The next two rules ((iii) and (iv)) give the syntax of **pred** and **ent** (typographical variants of the "cup" and "cap" operators, respectively), which will be interpreted as operators relating nominalized functions to their property correlates:

iii. If $t \in ME_{nf}$, $\mathbf{pred}(t) \in ME_{<e,e>}$

iv. If $f \in ME_{<e,e>}$, $\mathbf{ent}(f) \in ME_{nf}$

PT has rules for lambda abstraction and function-argument application; these appear in (v) and (vi):

v. If $t \in ME_e$, and $x \in Var_e$, $\lambda x[t] \in ME_{<e,e>}$

vi. If $f \in ME_{<a,b>}$ and $t \in ME_a$, $f(t) \in ME_b$

PT also contains a truth predicate, †, which C&T define to turn entities of all sorts into information units. The application of the truth predicate to any sort of entity other than one that independently identifies an information unit yields, on their analysis, a necessarily false result.[9]

vii. If $t \in ME_e$, then $\dagger t \in ME_i$

Application of the dagger predicate to a formula is a crucial step in making it combinable with the connectives and negation, which require expressions in ME_i as input.

Finally, PT has the usual logical expressions:

viii. If $t, t' \in ME_e$, then $(t = t') \in ME_i$.

ix. If $\psi \in ME_i$, then $\neg\psi \in ME_i$.

x. If $\psi, \phi \in ME_i$, then $(\psi \vee \phi)$, $(\psi \wedge \phi)$, $(\psi \rightarrow \phi)$, and $(\psi \leftrightarrow \phi)$ are all in ME_i.

xi. If $\psi, \phi \in ME_i$, and $x \in Var_\alpha$, for any basic sort α, then $\exists x(\psi)$ and $\forall x(\psi)$ are in ME_i.

C&T provide PT with an axiomatic theory which, among other things, is designed to avoid Russell's paradox. However, since self-predication is not an issue of immediate concern here, I will not elaborate on this axiomatic system other than to point out that lambda conversion is assumed to hold. The reader is referred to C&T and references cited therein for further details.

We may now consider how these PT-expressions are interpreted.

3.3.2 The Interpretation of PT

The C&T model for PT is a pair $< \mathrm{F}, i >$, where F is a model frame and i is an interpretation function. The frame F is a tuple $< O, \mathbf{I}, \mathbf{P}, S, \Delta, T >$, whose constituents are defined as follows:

$O = < E, [E \rightarrow E], ent, pred >$, where E is a set of entities, and $[E \rightarrow E]$ is a set of functions from E into E–the properties. Nominalized functions, are related to their (functional) property correlates by the operators *ent* and *pred* as follows:

(144) If α is of sort $< e, e >$, $ent(\alpha)$ is of sort nf, and $pred(ent(\alpha)) = \alpha$

I is an algebra of information units:

(145) $\mathbf{I} = < I, \wedge, \neg, \bigcap_r, \equiv >$

The basic connectives and operators include conjunction ($\wedge$, a function from $[[I \times I \rightarrow I]$), negation ($\neg$, $[I \rightarrow I]$), and the universal operator ($\bigcap$, relativized to a non-complex sort r, $[[E \rightarrow I] \rightarrow I]$). The identity relation ($\equiv$) takes two entities of any sort to yield an information unit ($[[E \times E] \rightarrow I]$). As these connectives are unremarkable, I will not discuss them here.

In PT_1, **P** is the Boolean algebra generated by a set of propositions, where the nature of a proposition is not specified; in PT_2, it is the Boolean algebra generated by the power set of a set of possible world-time pairs ($\mathcal{P}(W \times J)$)). Chierchia and Turner then define a homomorphism T from the information unit algebra **I** into **P** (however P is characterized):

(146) $T(i \wedge i') = T(i) \wedge T(i')$
$T(\neg i) = \neg T(i)$
$T(e \equiv e') = T(e) \equiv T(e')$
$T(\bigcap_r f) = \bigcap_r \lambda e.T(f(e))$

I will follow PT_2 here (though leaving the temporal index aside) and take **P** to be the Boolean algebra generated by the power set of a set of worlds $\mathcal{P}(\mathcal{W})$.

Finally, the frame contains a truth operator, Δ, and its correspondent on the homomorphism from **I** to **P**, namely S:

(147) $T(\Delta(e)) = S(e)$

I will leave open the question of what exactly the value of $S(e)$ is, as it will not be crucial in what follows.

C&T relativize interpretation in a model to a choice of assignment function g. In order to make the semantics here dynamic, I will not relativize interpretation in this way but will rather take all interpretations to be functions whose domain is the set of assignment functions. Assuming an interpretation function i, we get the following interpretations to expressions of PT, where for all g:[10]

(148)

i. If $x \in Var_r$, $[\![x]\!](g) = g(x)$; if $\alpha \in Cons_r$, $[\![\alpha]\!](g) = i(\alpha)$

ii. $[\![\mathbf{ent}(t)]\!](g) = ent([\![t]\!](g))$

iii. $[\![\mathbf{pred}(t)]\!](g) = pred([\![t]\!](g))$

iv. $[\![\lambda x[t]]\!](g) = \lambda e.[\![t]\!](g(e/x))$

v. $[\![f(t)]\!](g) = [\![f]\!](g)([\![t]\!](g))$

vi. $[\![\dagger t]\!](g) = \Delta([\![t]\!](g))$

vii. $[\![t = t']\!](g) = [\![t]\!](g) \equiv [\![t']\!](g)$

viii. $[\![\neg\psi]\!](g) = \neg[\![\psi]\!](g)$

ix. $[\![\psi \wedge \phi]\!](g) = [\![\psi]\!](g) \cap [\![\phi]\!](g)$

x. $[\![\forall x_r \psi]\!](g) = \bigcap_r \lambda e \in E_r [\![\psi]\!](g(e/x_r))$

This characterization of ME_{PT} does not incorporate tense or modality. Aside from the treatment of **P**, the broader definition of what can be a complex sort, and the restatement of the interpretation rules in terms of functions whose domain is G, PT is exactly like C&T's PT_1.

3.4 Interpreting the Existential

3.4.1 A Dynamic PT Fragment of English

DP Interpretations in PT

Perhaps the most important aspect of the fragment for our purposes is the availability of nominalized functions[11] as the interpretations of nonquantificational DPs. Indeed, I will take the nf-sort interpretation as basic in the sense that I will define the other possible DP interpretations in terms of it.

It will also have to be possible for a DP like *a child* to be interpreted *referentially* (a term I will reserve for DPs interpreted as entities of sort u). Consequently, following Partee and Rooth 1983 and Partee 1987 (though differing in detail from these proposals),

I take nonquantificational DPs to be associated with a family of interpretations.[12]

To arrive at this family of interpretations it is first necessary to introduce some assumptions about the interpretation of nominal expressions and to define the notion of *extension of a property*.

The fragment of English will be interpreted indirectly, via translation into PT. In general, I will indicate the translation of English expressions whose values are constants of PT by simply bold-facing the English expression (e.g. **dog** for *F(dog)*, *F* the translation function); this same representation will also generally stand for the interpretations of those constants (i.e. their value on the interpretation function *i*). Where no confusion will arise, I will usually skip explicit mention of the translation step, using e.g. $[\![dog]\!]$ for what is more precisely $[\![F(dog)]\!]$.

Intransitive nouns and their projections are going to be translated as constants of one of the complex sorts $< e, e >$, $< u, e >$, $< nf, e >$, or $< i, e >$ and are, correspondingly, interpreted as properties; the specific sort is determined by the lexical semantics of the predicate. Thus, we have:

(149) a. $F(dog) = \mathbf{dog}$

b. For all g, $[\![\mathbf{dog}]\!](g) = i(\mathbf{dog})$, a function in $[U \rightarrow E]$

In assigning property- rather than nominalized function-sort interpretations to nominal projections (NP),[13] I follow Chierchia 1985, rather than C&T, who take bare nominals (though not DPs) to be interpreted as the entity correlates of properties, rather than as properties themselves. Although the decision in favor of properties rather than nominalized functions is perhaps not crucial in this case, it may allow us to capture certain differences between DP on the one hand, and bare nominals (and VP and AP, see below) on the other. For example, modal copular sentences such as (150)a are ambiguous with a predicate nominal, but unambiguous with an bare nominal, AP, or VP predicate:[14]

(150) a. I could have been a president.

b. I could have been president.

c. I could have been famous.

d. I could have been living in the White House.

(150)a shares a reading with the rest of the examples in (150), which is true just in case there is some counterfactual possible world in which the speaker, say Joan, is a president rather than e.g. a teacher. The second reading of (150)a manifests itself in a scenario such as the following: someone arrives at the Bellevue hotel late at night, and the desk clerk is sleeping on the job. It's just the hotel manager checking up on her employees, but she admonishes the clerk by uttering (150)a. On this reading, the sentence would be true just in case there is a counterfactual world in which, rather than seeing the manager at the desk, the clerk sees George Bush. None of the other sentences in (150) (including, notably, (150)b) have this second kind of interpretation. I take this as some evidence that we want to maintain a distinction between the interpretation of DP vs. bare nominals such as *president*, VP, and AP. Since by hypothesis DPs are interpretable as nominalized functions, the other categories will not be so interpreted.

It will be useful, in addition, to define an *extension* function, *ext*, for each property, viz. the set of (n-tuples of) individuals that, for any given model, world, and time, have that property. We can say that an n-tuple $< x_1, \ldots, x_n >$ is in the extension of an n-place property P^n at some index (a world-time-location triple) just in case the property combined with that n-tuple, at that index, yields a true proposition (i.e. just in case that world is among those determined by homomorphism T applied to the information unit corresponding to the assertion that $P^n(x_1, \ldots, x_n)$ is true). That is, for all g:

(151) $ext_{<w,t,l>}(P^n(g)) =$
$\{< x_1, \ldots, x_n > | w \leq T(\Delta((P^n(x_1, \ldots, x_n))(g))$ at
$< t, l >\}$

So imagine we want to know what individuals have the "dog" property in some world at some time/place. We apply *ext* to $[\![dog]\!]$ and

we get a set of individuals x (since $[\![dog]\!]$ will be a 1-place property) for which it is the case that the relevant world is included in the set of worlds determined by the assertion that $[\![dog]\!](x)$ at $< t, l >$ is true. I will suppress the subscript to *ext* and reference spatio-temporal indices where they are not crucial.

With a basic interpretation assigned to the category N and this notion of extension in hand, we may now turn to the interpretations for DP. Given that expressions projected from N are interpreted as properties, to yield an nf-sort interpretation for the DP *a dog*[15] we can interpret the indefinite article as the function *ent*, which maps properties onto their nf-correlates.

(152) For all g, $[\![[\text{a NP}]_{DP}]\!](g) = [\![a]\!]([\![\text{NP}]\!](g)) = ent([\![\text{NP}]\!](g))$

That is, the DP *a dog* will be interpreted as the nominalized function corresponding to the property *dog*. This is what I will refer to as the "nf-sort" interpretation of *a dog*; I claim that it is the interpretation selected by the verb *be* both for the predicate nominal position and in the existential construction. The nf-sort-interpreted DP should be understood as naming the nf, in a way similar to the way that the name *Sally* names an individual.

However, DPs also have referential uses. Intuitively, when we use *a dog* referentially, we are designating an individual that has the property *dog* at the relevant index, that is, we are identifying an individual in the extension of *dog*;[16] for reasons that will become clear when we consider kind terms more closely, this individual must be of a particular sort, viz. a member of U as opposed to NF. Adapting from Heim and the DRT literature, a referential DP will be translated into PT as an variable of sort u, such that the value of that variable under an assignment function g is in the extension of the nf-interpretation the DP ($ext'([\![DP[+nf]]\!])$), where I take the extension of a DP to be identical to the extension of its internal nominal. (For bookkeeping purposes, I will sometimes mark DPs as [+u], mnemonic for "u-sort," or as [+nf].):

(153) If α is a DP indexed with variable x, then for all g, $[\![\alpha[+u]]\!](g) = g(x_u) \in ext'([\![\alpha[+nf]]\!](g))$

(154) For all g, $ext'([\![[\text{D NP}]_{DP}[+nf]]\!])(g) = ext([\![\text{NP}]\!](g))$

Thus, $[\![a\ dog[+u]_x]\!](g)$ will be the entity $g(x)$, $g(x)$ subject to the condition that it must be a dog.

We have assigned two interpretations to the DP *a dog*; definite DPs, names and pronouns, and DPs with other, not necessarily quantificational determiners (e.g. *two dogs*) will be introduced in subsequent sections. Once quantification is incorporated into the semantics, we will assign additional, lifted interpretations to *a dog*.

Logical Form, Quantification, and Dynamic Interpretation

The interpretation of an English sentence is going to be mediated by a logical form (lf)[17] derived from the S-Structure of the sentence; the constituents of this lf are translated into PT. The purpose of lf-construction in this system is largely to simplify the analysis of quantification and negation; nothing crucial depends on the adoption of this particular method of interpreting the surface syntax. As we will be adapting the dynamic approach to quantification proposed in Heim 1982, the lf-construction rules largely resemble those she employs. Specifically, we posit the following (where "DP[Q]" stands for "necessarily quantificational DP"):

(155) Logical Form Formation Rules

a. Indexation: Superscript all nonexpletive DPs with an alphabetic variable.

b. Quantifier Raising (QR): Adjoin each DP[Q] to the minimal IP that most immediately dominates it, replacing the DP[Q] with a variable that exactly matches the variable-index of the DP[Q] it replaces.

c. Quantifier Construal (QC): Adjoin every quantificational determiner (and no other determiner) to be a sister to the DP from which it originates.

The Indexation rule assigns each nonexpletive DP a unique alphabetic subscript ($x_\alpha, y_\alpha, z_\alpha, \ldots$, where α codes the sort of the semantic argument associated with the position in which the DP appears). Since the fragment for the moment will contain only indefinite and necessarily quantificational DPs, it is safe to assume that every DP gets a novel index.

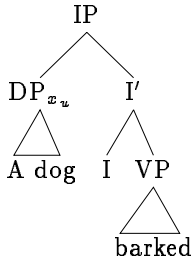
We can illustrate logical form construction using the sentences in (156):

(156) a. A dog barked.

b. Every dog barked.

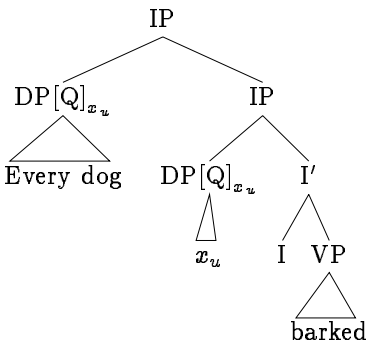
Assume that the verb *bark*[18] is interpreted as a property of individuals of sort u, on the intuition that barking is a property that only certain sorts of "ordinary" individuals have;[19] its subject DP receives an index of sort u. Since that DP in (156)a is nonquantificational, QR (and, consequently, Quantifier Construal), do not apply, and the lf shown in (157) is only trivially different from the S-Structure from which it is derived:

(157)



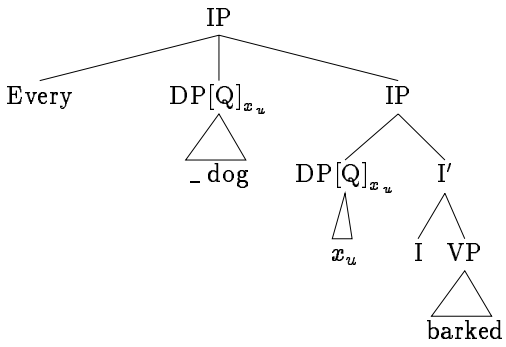
Now consider (156)b. Again, since the argument of $[\![bark]\!]$ is of sort u, the subject DP will receive the index x_u. However, since that DP is quantificational, QR will apply with the result in (158):

(158)



The output of QR then undergoes Quantifier Construal, yielding (159):

(159)



These lfs will be interpretable once translations for each of their parts is provided. We have already seen how nonquantificational DPs will be interpreted; verbs, like nouns, will be interpreted as properties:

(160) a. *F(bark)* = **bark**

b. For all g, $[\![\textbf{bark}]\!](g)$ is a function in $[U \rightarrow E]$

Since *bark* requires a referential argument, in order for *A dog barks* to be interpretable, we will need to make use of the referential interpretation of *a dog* in (161), rather than the nf-sort interpretation.

(161) $F(a\ dog[+u]_x) = x_u$;
for all g, $[\![\textbf{ent}(\textbf{dog})]\!](g) = ent(\textbf{dog}(g))$ $[\![a\ dog[+u]]\!](g) = g(x_u) \in ext'([\![a\ dog[+nf]]\!](g))$

The syntactic and semantic combination of *F(a dog)* and *F(barked)* appear in (162)a and b, respectively:

(162) a. $F(bark)(F(a\ dog)) = \textbf{bark}(x_u)$

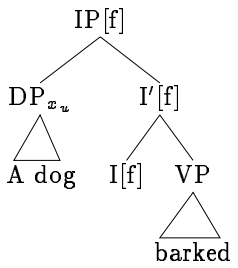
b. For all g, $[\![bark]\!](g)([\![a\ dog[+u]]\!](g)) = \textbf{bark}(g(x_u))$, where $g(x_u) \in ext'([\![a\ dog[+nf]]\!](g))$

In order for $\textbf{bark}(x_u)$ in (162)a to be able to serve as input to various sorts of logical predicates, we must first combine it with the information-unit-creating predicate, †.

What part of an lf, if anything, might contribute †, and therefore, the truth operator that is its interpretation? One possibility

is some part of the projection of INFL. I will make the technically simplest assumption, namely that INFL projects a feature up to the IP most immediately dominating it, and that this feature is translated at the IP-level as †. Thus, a more precise representation of the lf in (157) is as in (163):

(163)



This lf now translates as a true information unit, one which, when interpreted with respect to some assignment function, corresponds to the assertion of the truth of $[\![A\ dog\ barked]\!]$:

(164) a. $F(f)(F(A\ dog\ barked)) = \dagger\mathbf{bark}(x_u)$

b. For all g, $[\![f + A\ dog\ barked]\!](g) = \Delta\mathbf{bark}(g(x_u))$, where $g(x_u) \in ext'([\![a\ dog]\!](g))$

Since $[\![f + A\ dog\ barked]\!]$ is really a function from assignment functions to information units, it can be equivalently characterized as a set of ordered pairs of assignment functions and information units:

(165) $[\![f + A\ dog\ barked]\!] = \{< g, i > | \Delta[\![A\ dog\ barked]\!](g) = i\}$

Given (165), it will be completely straightforward to define a context change potential for any formula.

In a dynamic system, the extension of a sentence is a function (for example, from discourse models to discourse models), rather than (for example) a truth value. As noted above, I will define a discourse model as consisting of a set D of entities which constitute its domain and a set G of world-assignment function pairs $< w, g >$ that satisfy the utterances that make up the discourse. If we allow our assignment functions to be partial, we can define D in terms of them. Specifically:

(166) $D(c) = \{x | \forall g$ such that there is some $< w, g > \in G$, $g(x)$ is defined$\}$

Thus, the addition of a sentence (translated as a formula ϕ) to a set of sentences, or context, c will take us from the pair $< D, G >$, where G satisfies c, to a new $< D, G >$, where G satisfies $c + \phi$. I will refer to this function associated with ϕ as its context change potential and follow Heim in using "$Sat(c + \phi)$" to stand for the pair $< D, G >$ which is the value of the context change potential of ϕ applied to c.[20]

We can straightforwardly define a set of world-assignment function pairs that satisfy ϕ in terms of the set of assignment function-information unit pairs we associate with ϕ via the PT homomorphism T. Recall that T maps information units into the power set of a set of worlds. The context change potential for an atomic formula ϕ, then, can be defined as in (167), which is based on the definition in Heim 1982:363 (α ranges over variables and constants of sorts *i,u,nf,e*):

(167) If ϕ is a formula of the form $\dagger P^n(\alpha^1, \ldots, \alpha^n)$:
$Sat(c + \phi) = < D, G >$, D a set of entities, G a set of ordered pairs $< w, g >$ such that:
1. $D = D(c) \cup \{\alpha^1, \ldots, \alpha^n\}$
2. $G = \{< w, g > \in Sat(c) | w \leq T(\Delta([\![\phi]\!](g)))\}$

(Note that G could be equivalently defined as in (168), given the definition of *ext* in (151), above:

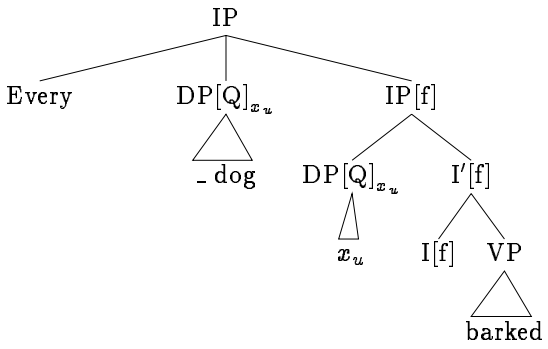
(168) $G = \{< w, g > \in Sat(c) |$
$< [\![\alpha^1]\!](g), \ldots, [\![\alpha^n]\!](g) > \in ext_{<w,t,l>}([\![P^n]\!](g))$ at some $< t, l >\})$

Applying this to the formula derived from the lf in (157), we get (169), which says that the effect of adding *A dog barks* to a context c is (a) that a discourse referent x_u will be added to the domain of the discourse and (b) that the resulting context will be satisfied by that set of world-assignment function pairs $< w, g >$ satisfying c in which it is true that $g(x_u)$, a dog, barked:

(169) $Sat(c + \mathbf{bark}(x_u)) =< D, G >$, such that:
1. $D = D(c) \cup \{x_u\}$
2. $G = \{< w, g > \in Sat(c) | g(x_u) \in ext'_w([\![a\ dog[+nf]]\!](g))$ and $w \leq T(\Delta(\mathbf{bark}(g(x_u))))\}$

Now, consider again the quantified lf from (159), repeated in (170):

(170)



To interpret this lf, we first need translations for *every* and the material that gets left behind when Quantifier Construal applies. I will assume the following:

(171) a. *F(every)* = **every**, a constant of sort $< i, < i, i >>$

b. Where the DP containing α bears the index β, $F(\_\alpha) = \dagger F(\alpha)(\beta)$

Plugging these into our example, we get (172):

(172) $\mathbf{every}(\dagger\mathbf{dog}(x_u), \dagger\mathbf{bark}(x_u)) \in ME_i$

The interpretation of this formula appears in (173):

(173) $[\![\mathit{every}(\dagger\phi', \dagger\phi'')]\!] = \{< g, i > | [\Delta([\![\mathit{every}(\dagger\phi', \dagger\phi'')]\!](g))] \wedge [[\![\mathit{every}(\dagger\phi', \dagger\phi'')]\!](g) = i]\}$

$\Delta[\![\mathit{every}(\dagger\phi', \dagger\phi'')]\!](g)$, in turn, is subject to the following condition (where an assignment function h is an extension of another assignment function g iff for all x such that g assigns a value to x, $g(x) = h(x)$):

(174) If ϕ is a formula of the form $\mathbf{every}(\dagger\phi', \dagger\phi'')$, then for all g, $\Delta[\![\phi]\!](g)$ iff for all h an extension of g such that $[\![\dagger\phi']\!](h)$, there is some h' an extension of h such that $[\![\dagger\phi'']\!](h')$.

In order to characterize the context change potential for this quantified formula, we must first define the context change potential of a complex formula consisting strictly of a string of atomic formulas; this definition, adapted from Heim 1982:363, appears in (175). It says that the context change potential of such a complex formula is arrived at by computing sequentially the context change potential of each of its atomic parts:

(175) If ϕ is a formula with immediate constituents $\phi_1, \ldots, \phi_n$, then:
$Sat(c + \phi) = < D, G >$, such that:
1. $D = D(\ldots(c + \phi_1)\ldots + \phi_n)$
2. $G = Sat(\ldots(c + \phi_1)\ldots + \phi_n)$

Appealing to (175), we can define Sat(c + **every**(ϕ', ϕ'')) as in (176), again adapting from Heim. In prose, (176) says that the addition of the quantified formula to a context has no effect on the domain of the context, and that the resulting context will be satisfied by those world-assignment function pairs $< w, g >$ for which the following is the case: for every g' that assigns the same value as g to every variable for which $g(x)$ is defined, such that $< w, g' >$ satisfies the result of adding ϕ' to the context, there is some g'' that assigns the same value as g' to all variables for which $g'(x)$ is defined, such that $< w, g'' >$ satisfies the result of adding ϕ'' to the original context plus ϕ':

(176) If ϕ is a formula of the form **every**(ϕ', ϕ''), then:
$Sat(c + \phi) = < D, G >$, such that:
1. $D = D(c)$
2. $G = \{< w, g > \in Sat(c) |$ for every $< w, g' >$ (where g' agrees with g on every element in $D(c)$) in $Sat(c + \phi')$, there is some $< w, g'' >$ (where g'' agrees with g' on every element in $D(c + \phi')$) in $Sat((c + \phi') + \phi'')\}$.

Thus, $Sat(c +$ **every**$($**dog**$(x_u),$ **barked**$(x_u)))$ is as in (177). In prose, it says that *Every dog barked* can be consistently added to a context c just in case, for every way one can imagine satisfying a (temporary) context consisting of the original context plus the sentence x_u *is a dog*, there is some way of satisfying that temporary context plus the sentence x_u *barked*:

(177) 1. $D = D(c)$
2. $G = \{< w, g > \in Sat(c) |$ for every $< w, g' >$ (where g' agrees with g on every element in $D(c)$) in $Sat(c + \mathbf{dog}(x_u)$, there is some $< w, g'' >$, (where g'' agrees with g' on every element in $D(c + \mathbf{dog}(x_x)))$ in $Sat((c + \mathbf{dog}(x_u)) + \mathbf{barked}(x_u))\}$.

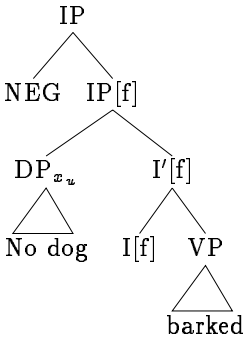
To round out the fragment, I incorporate an analysis for negated sentences such as those in (178):

(178) a. No dog barked.

b. Fido didn't bark.

I follow Ladusaw 1992 in taking both clausal negative elements such as *not, never, n't* and negative DPs such as *no dog* to be subject to a condition that they be governed at lf by an expression of negation (representable as a univalued feature [NEG]).[21] On this analysis, *no dog* in the scope of [NEG] is assigned the same interpretation as the indefinite *a dog*,[22] and *not, n't* will appear to make no semantic contribution to the lfs in which they appear, as the semantic negation will be associated with [NEG]. For example, the lf for (178)a appears in (179):

(179)



Though *no* will be subject to whatever conditions govern its cooccurrence with [NEG], it will otherwise be assigned the same interpretation as the indefinite article, viz. *ent*; F([NEG]) will be the standard negation predicate:

(180) a. $F(no) = F(a) =$ **ent**

b. $F([\text{NEG}]) = \neg$

Negated formulas will be interpreted as specified in PT ((148), clause (viii)):

(181) For all g, $[\![\neg\psi]\!](g) = \neg([\![\psi]\!](g))$

The context change potential for a negated formula appears in (182). It says that the addition of a negated sentence to a context will have no net effect on the domain of the context and, moreover, that the set $< w, g >$ satisfying a context plus the negated sentence will consist of just those which cannot be extended in such a way that they could satisfy the original context plus the sentence's affirmative counterpart:

(182) If ϕ is a formula of the form $\neg(\phi')$, then:
$Sat(c + \phi) =< D, G >$ such that:
1. $D = D(c)$
2. $G = \{< w, g > \in Sat(c)|$ there is no $< w, g' >$ (where g' agrees with g on all elements in $D(c)$) such that $< w, g' > \in Sat(c + \phi')\}$

We now have enough of a fragment to consider the interpretation of the existential construction. Every sentence in the fragment (whose elements consist simply of an intransitive verb, an intransitive noun, *a, no*, and *every*) has been assigned an interpretation in PT as well as a context change potential. In the rest of what follows, we will be interested principally in context change potentials.

3.4.2 Interpreting Existential Sentences

Our next step is to add a lexical entry for the existential predicate, call it be_{exist}, which has exactly one internal argument, whose semantic role might be described as "the instantiated," and no external argument. I assume that this internal argument receives inherent Case from be_{exist}:

(183) be_{exist}: <*instantiated*>

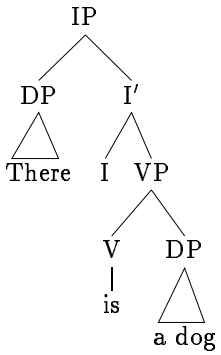
By hypothesis, $[\![be_{exist}]\!]$ is a property of nominalized functions; therefore, its argument must be a nominalized function. I assume that a clause containing this be_{exist} picks up an expletive subject[23] to satisfy the syntactic requirement that it have a subject, and that the expletive does not contribute a semantic argument.

As an example, consider (184):

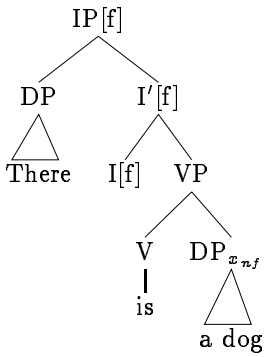
(184) There is a dog.

The S-Structure for (184) in (185) has the logical form in (186):

(185)



(186)



The verb selects for the nf-sort interpretation of *a dog*; as I mentioned above, $[\![a\ dog]\!]$ on this interpretation will be the nf that corresponds to $[\![dog]\!]$. Using the method from the previous section, we get the translation in (187) for this lf; its interpretation is given in (187)b:

(187) a. $\dagger\mathbf{be_{exist}}(\mathbf{ent(dog)})$

b. $[\![\dagger\mathbf{be_{exist}}(\mathbf{ent(dog)})]\!] = \{< g, i > | \Delta\mathbf{be_{exist}}(\mathbf{ent(dog)})(g) = i\}$

(187)b is subject to the condition in (188), which effectively states that an existential sentence will be true at some index iff its extension at that index is non-empty:

(188) For all g, x_{nf}, $\Delta(\mathbf{be_{exist}}(x_{nf}))(g)$ at $< w, t, l >$ iff $\exists y$ such that $y \in ext'_{<w,t,l>}(x_{nf})$

Existentials, like other sentences, can be assigned a a context change potential. However, this context change potential will be special in that it will involve the addition of an extra discourse referent into the domain, namely a referent corresponding to the instantiation of the nf; consequently, any set of world-assignment function pairs satisfying the context resulting from addition of an existential sentence will have to fix the value of the variable corresponding to that extra discourse referent in such a way that it is in the extension of the nf. That is, the context change potential of an existential sentence is as in (189):

(189) $Sat(c + \dagger\mathbf{be_{exist}}(ent(P)) =< D, G >$, such that:
1. $D(c) \cup \{x_{nf}, y\}$
2. $G = \{< w, g > \in Sat(c) |$
$w \leq T(\Delta([\![be_{exist}]\!](ent[\![P]\!]))(g))$
and $g(y) \in ext'(ent([\![P]\!])(g))\}$

Nothing in (189) guarantees that y be novel, that is, that $y \notin D(c)$. I will address the novelty issue in Section 5.2; for now, simply assume that y will be novel.

The application of (189) to $\mathbf{be_{exist}}(\mathbf{ent(dog)})$ is completely straightforward. Note that $Sat(c + \mathbf{be_{exist}}(\mathbf{ent(dog)}))$ will have a domain D that includes $D(c)$ plus discourse referents corresponding to the entity-correlate of the dog-property (or, as I put it at the beginning of the chapter, the *description* of a dog) and to an instance of that description:

(190) $< D(c) \cup \{x_{nf}, y\},$
$\{< w, g > \in Sat(c) | w \leq T(\Delta\mathbf{be}(ent(\mathbf{dog}))(g))$ and
$g(y) \in ext'(ent(\mathbf{dog})(g))\} >$

We may now examine the source of the existential force that is typically associated with the existential construction.

Negated Existentials and the Narrowest Scope Effect

As mentioned in Chapter 1, Milsark 1977 and others have suggested that the existential construction contains as part of its interpretation a special existential operator. On Milsark's view, the definiteness effect could be attributed to a condition that this operator bind a variable corresponding to the entity whose existence is intuitively asserted; we also saw in Chapter 1, Section 3.2.1, that positing such an existential operator was problematic. In the interpretation presented here, no such operator is posited at all; nor, indeed, could it be, because the existential predicate is not even a property of the individual identified by that existentially bound variable in a Milsark-style analysis. That is, there is nothing in the translation of an existential sentence on the present analysis ((191)a) to correspond to the variable x in the traditional translation in (191)b:

(191) a. $\dagger\mathbf{be}_{\mathbf{exist}}(\mathbf{ent}(\mathbf{dog}))$

b. $\exists x[\dagger\mathbf{dog}(x)]$

The information embodied in the traditional translation corresponds to a rather different information unit than that embodied in (191)a, one whose principal predicate expresses a property of an individual such as Wes (my friend Clare's dog), rather than a property of a kind of thing Wes is. However, (191)b does characterize a necessary and sufficient condition on the truth of (191)a (cf. (188), above). That is, we can think of the existential force Milsark was trying to capture as being hidden in the satisfaction conditions associated with the existential predicate, and as being manifested in its context change potential in the addition of the extra discourse referent y to the domain.

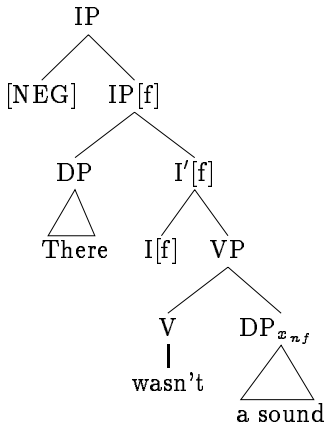
Note crucially that (191)a itself is completely nonquantificational; this fact will account for some of peculiar scope facts associated with the construction. For example, consider the negated existential in (192); as mentioned in Section 2, the absence of a wide scope construal for the indefinite in this sort of example has lacked a good explanation:[24]

(192) There wasn't a sound.

Since the indefinite in (192) must have narrowest scope, I will refer to this phenomenon as the "narrowest scope effect."

On the interpretation proposed above for existential sentences, the narrowest scope effect ceases to be mysterious. To see why, one need only see that (192) has just one lf–not two. This lf appears in (193); its translation, in (194):

(193)



(194) $\neg(\dagger\mathbf{be_{exist}}(\mathbf{ent}(\mathbf{sound})))$

The context change potential for (194) is determined by the rule for negation, (182) above; applying that rule to (194) we get:

(195) $Sat(c+\neg(\dagger\mathbf{be_{exist}}(\mathbf{ent}(\mathbf{sound})))) =< D, G >$ such that:
1. $D = D(c)$
2. $G = \{< w, g >\in Sat(c)|$ there is no $< w, g' >$ (where g' agrees with g on all elements in $D(c)$) such that $< w, g' >\in Sat(c + \dagger\mathbf{be_{exist}}(\mathbf{ent}(\mathbf{sound})))\}$

Spelling out $Sat(c + \dagger\mathbf{be_{exist}}(\mathbf{ent}(\mathbf{sound})))$ further, G becomes (196). It states that the satisfaction set for *There wasn't a sound* will be that set $< w, g >$ for which there is no $< w, g' >$ (meeting the usual conditions) satisfying the statement that $[\![\mathbf{ent(sound)}]\!]$ is instantiated:

(196) $G = \{< w, g >\in Sat(c)|$ there is no $< w, g' >$ (where g' agrees with g on all elements in $D(c)$) such that $[w \leq T(\Delta \mathbf{be_{exist}}(ent(\mathbf{sound}))(g'))$ and $g'(y) \in ext'(ent(\mathbf{sound})(g'))]\}$

The existence of any particular entity instantiating $[\![\mathbf{ent(sound)}]\!]$ would be sufficient to render the set G in (196) empty and therefore render (192) false. We thus get a narrow scope effect; note that "effect" really is the word, since the postcopular DP in (192) does not bear any interesting scope relation at all to the negation, beyond being the argument of a predicate that is itself interpreted within the scope of the negation. This example easily generalizes to cases involving more than one quantifier; *narrow* thereby generalizes to *narrowest.*

I have presented a basic interpretation and context change potential for simple affirmative and negated existentials. Its novelty lies in the claim that $[\![be_{exist}]\!]$ is a property of a nominalized function; already we have seen one benefit of this claim–insight into the narrowest scope effect.

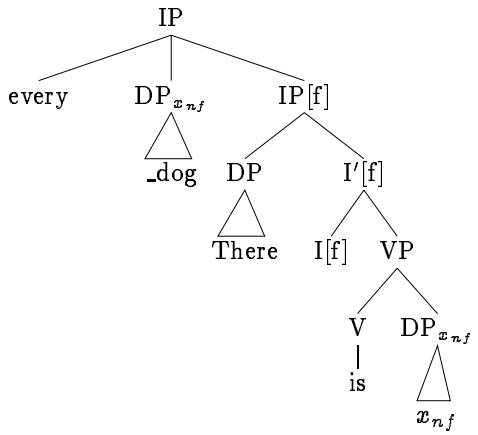
One Half of the DE: A Sort Mismatch

We are now ready to examine one of the two phenomena that fall under the definiteness effect, namely the exclusion of certain necessarily quantificational DPs. Note that in order to appear in the postcopular position at all, a candidate DP must be interpretable as an nf. Necessarily quantificational DPs will thus never appear in the postcopular position of the existential *unless* they quantify over nfs. To see this, consider (197):

(197) *There is every dog.

The logical form for (197), constructed according to the algorithm introduced in Section 4.1.2, appears in (198):

(198)



In order for (198) to be interpretable, the variable x must range over individuals of the same sort in the restriction (determined by $\_\ dog$) and nuclear scope (determined by *There is* x_{nf}) of the quantifier. But this is impossible since the domain of the function $[\![dog]\!](g)$ is drawn from U, while that of $[\![be_{exist}]\!](g)$ is drawn from *NF*. Consequently, the sentence cannot be assigned an interpretation and is predicted to be unacceptable.[25]

In contrast, if a DP quantifying over entities in *NF* appears in the construction, we expect it to be acceptable, since it will not give rise to a sort mismatch of the kind discussed in the previous paragraph. This expectation is in fact realized.

Quantified Kind Expressions in the Existential

I pointed out in Chapter 1 that previous accounts of the definiteness effect, with the exception of Lumsden 1988, have had little to say about the systematic acceptability in the existential construction of quantificational DPs whose nominal projection is headed by a kind noun[26], such as the example in (199)b:

(199) a. There was a kind of wine that Chris disliked.

b. There was every kind of local wine.

Note, that we have not only the sheer acceptability of (199)b to explain, but also the following fact: (199)a is ambiguous: on one

reading it asserts the existence of a kind itself, with no commitment to the existence of instances; on the other, it asserts the existence of instances of a kind (e.g. bottles of wine at a contextually determined location). In contrast, (199)b is unambiguous: it can only be felicitously used to assert the existence of instances of the kinds in question, not the existence of the kinds themselves.

Given the observation in the previous section that necessarily quantificational DPs are predicted to be acceptable in the existential construction when they quantify over entities in *NF*, an obvious explanation for (199)b presents itself: take *every kind of local wine* to quantify over nfs, rather than entities in *U*. That is, construct a translation for *kind of local wine* as in (200), whose interpretation is a property of nfs:[27]

(200) a. *F(kind [of])* = **kind[of]**, a constant of sort $< nf, < nf, e >>$

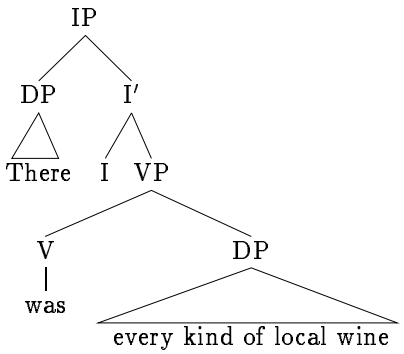
b. *F(local wine)* = **local wine**, a constant of sort nf

c. $[\![$**kind [of](local wine)**$]\!]$ = a function in $[NF \rightarrow E]$.

This treatment of *kind* is very much in the spirit of Carlson's 1977b analysis and those following it (e.g. Wilkinson 1988). It has some intuitive plausibility, since *kind of local wine* describes entities such as Pinot Noir, Zinfandel, etc., that are themselves descriptions.

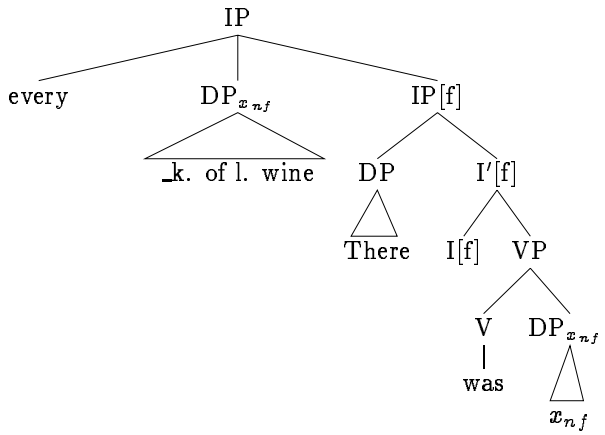
Consider, then, the S-Structure for (199)b in (201):

(201)



The existential predicate requires its argument to be an nf; consequently, the index assigned to the DP will be coded for the nf sort. QR and QC will apply to yield the lf in (202):

(202)



Since, by hypothesis, *kind of local wine* is interpreted as a property of nfs, (202), unlike the lf for *There is every dog* in (198), will be interpretable: the variable in both the restriction and nuclear scope of the quantifier can range over the same sort. The translation for (202) is unremarkable; it appears (simplified) in (203):

(203) $\mathbf{every}(\dagger\mathbf{kind[of]}(\mathbf{wine})(x_{nf}), \dagger\mathbf{be_{exist}}(x_{nf}))$

(203) has the context change potential in (204). (204) entails that (199)b will be true just in case every nf that is in the extension of *kind of local wine* is such that it is instantiated by some entity at the relevant index:

(204) $Sat(c + \mathbf{every}(\dagger\mathbf{kind[of]}(\mathbf{wine})(x_{nf}), \dagger\mathbf{be_{exist}}(x_{nf}))) =$
$< D, G >$, such that: 1. $D = D(c)$
2. $G = \{< w, g > \in Sat(c) |$ for every $< w, g' >$ (where g' agrees with g on every element in $D(c)$) such that $< w, g' > \in Sat(c + \dagger\mathbf{kind\ [of]}(\mathbf{wine})(x_{nf})$, there is some $< w, g'' >$ (where g'' agrees with g' on every element in $D(c + \dagger\mathbf{kind\ [of]}(\mathbf{wine})(x_{nf}))$ such that $< w, g'' > \in$ $Sat((c + \dagger\mathbf{kind\ [of]}(\mathbf{wine})(x_{nf}))) + \dagger\mathbf{be_{exist}}(x_{nf}))\}$

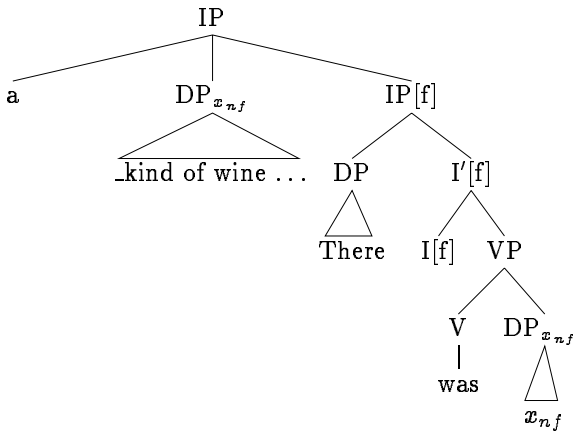
The context change potential assigned to (199)b precludes a net increment to the domain of discourse; the introduction of the instances of each kind takes place subordinate to the quantification.[28] This is the right result, given the failure of quantified kind expressions in the existential to license discourse anaphora:

(205) There was every kind of local wine at the festival. #It was very good./#They were reds.

Note also that, since QR must apply, (199)b can be assigned only one lf, as is consistent with its observed lack of ambiguity. In contrast, if we allow (as may be independently necessary) for a traditional interpretation of the indefinite article as an existential quantifier, alongside the interpretation advocated above (as *ent*), we can derive two lfs for (199)a and thus account for its two interpretations. I will provide only the lfs, rather than full interpretations, as the lfs will suffice to make the point.

The lf for the quantificational interpretation of the indefinite article will look just like that for (199)b, and its interpretation will proceed in the same fashion:

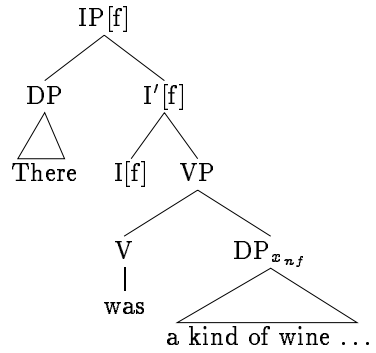
(206)



The only difference between this interpretation of (199)a and that of (199)b is that the former involves existential, rather than universal, quantification. Thus, the interpretation associated with the lf in (206) is the "existence of instances of a kind" interpretation.

If we interpret the indefinite article as *ent*, the postcopular DP will be nonquantificational, and so the lf for the sentence will be as in (207):

(207)



On this interpretation, *a kind of wine that Chris disliked* is interpreted as an nf–an nf whose extension will consist of other nfs, namely, those that are kinds of wine that Chris disliked (perhaps he doesn't like Sauvignon Blanc). This lf will therefore correspond to the "existence of a kind" interpretation, since nf associated with *a kind of wine that Chris disliked* is the direct argument of the existential predicate.

The last task before we turn to the issue of definites in the existential is to introduce additional intersective determiners into the fragment.

Adding Intersective Determiners to Fragment

We know from the work of Keenan 1987 and Keenan and Stavi 1986, discussed in Chapter 1, that any DP headed by an intersective determiner is licensed in the existential construction. The examples in (208) illustrate:

(208) a. There were three bears living in the cabin.

b. There were many arguments.

c. There were exactly two pieces of cake remaining.

Assuming that the nouns in (208) are interpreted as properties of u-sort individuals, the DPs in (208) will have to be interpretable nonquantificationally, as nominalized functions.

Two things must be added to the property interpretations of the nominal projections in the postcopular DPs in (208) (e.g.

$[\![bear]\!]$) to derive the nominalized functions that are the interpretations of those DPs (e.g. $[\![three\ bears]\!]$): the content contributed by the determiner and the nominalizing function *ent*. They can be added straightforwardly if it is possible to associate each intersective determiner with a property.

As mentioned in Chapter 1, it is a theorem of Keenan's intersectivity definition that:

(209) $f(A, B) \equiv f(A \cap B, A \cap B)$

Recall that (209) tells us that in order to decide whether "Det A's are B," it is necessary to look only at the A's that are B. But if the determination of the truth of *Det A's are B* depends only on inspection of a single set (viz. $A \cap B$) and not on comparison of two sets, then the truth of *Det A's are B* must depend on the presence or absence of some characteristic that $A \cap B$ can have. That characteristic is the contribution of the intersective determiner. For example, the interpretation of the determiner *two* requires that, for *Two A's are B* to be true, $A \cap B$ must have cardinality two. But once we have identified such a characteristic (or property) of sets, it should be adaptable to the semantic framework in use here. For example, the property of having cardinality two is a property any plural entity can have, including entities of the sorts being posited here. Thus we should be able to associate some property with every intersective determiner.

We need only to determine how the *ent* operator is contributed. There are two options: introduce *ent* as part of the interpretation of the intersective determiner, thus making even nonquantificational interpretations of the intersective determiners truly determiner-like, that is, semantically like *a*; or introduce it separately, e.g. via a null determiner, effectively reducing nonquantificational intersective determiners to adjectives. Perhaps there is empirical evidence that would point towards the superiority of one option over the other, but since the choice is not crucial for our purposes, I will simply adopt the position that intersective determiners contribute only a property and not *ent*. That is, I will assign the determiner *two* the following interpretation:

(210) a. *F(two)* = **two**, a constant of sort $< e, e >$ with a counterpart in sort $<< e, e >, < e, e >>$.

b. For all g, x, P, $\Delta\mathbf{two}(P)(x)(g)$ iff $\Delta(\mathbf{two}(x) \wedge P(x))(g)$, where for all g, $\Delta\mathbf{two}(x)(g)$ iff $|g(x)| \geq 2$.

Similar interpretations can be constructed for the others. The interpretation for existential sentences whose DPs are headed by such determiners will be just like those we saw earlier involving DPs headed by the indefinite determiner.

In addition, I will assume that each intersective determiner can also be interpreted as a quantificational determiner in the usual fashion. For example:

(211) $Sat(c + \mathbf{two}(\phi, \psi)) =< D, G >$, such that
1. $D = D(c)$
2. $G = \{< w, g > \mid$ there are at least two g' (where g' agrees with g on all elements in D(c)) such that: $< w, g' > \in Sat(c + \phi)$ and there is at least one g'' (where g'' agrees with g' on all elements in $D(c + \phi)$) such that $< w, g'' > \in Sat((c + \phi) + \psi)\}$.

The interpretation of existential sentences whose DPs are headed by quantificationally interpreted intersective determiners will proceed, mutatis mutandis, just as did the interpretation of existentials in which the postcopular DP was headed by *every*; those DPs will consequently be subject to the same sortal conditions as the universally quantified DPs.

Summary

To summarize the discussion so far, I have made the following claims: that the existential predicate is a predicate of nominalized functions; that DPs headed by the indefinite article and intersective determiners in general can be interpreted as nominalized functions, while necessarily quantificational DPs cannot be; and that $[\![kind]\!]$ in combination with its argument is a property of nominalized functions. Though these claims are cast in property-theoretic terms, they could be recast in some other fashion, provided that a semantic distinction is made between the argument of the existential predicate and the arguments of predicates like *bark, walk, eat,*

etc.; and provided that the analysis allows for quantification over the sort of object that serves as the argument of the existential predicate.

These claims have yielded two attractive results already: the contrast between the acceptability of quantified kind expressions and other necessarily quantificational DPs follows automatically, along with the failure of quantified kind existentials to license discourse anaphora; as does the narrowest scope restriction.

3.5 Definites and the Other Half of the DE

It is now time to consider the remainder of the definiteness effect, viz. the exclusion in unmarked contexts of certain definites, names, and pronouns:

(212) a. #There was the dinner on the table.

b. #There was Frank.

c. #There was him.

I begin by adding definites, names and pronouns to the fragment.

3.5.1 Augmenting the Fragment

Consider first the definites. Since we have adopted a nonquantificational analysis of indefinites, I will do the same for the definites. Specifically, *the*, like *a*, will be interpreted essentially as *ent*, the function that turns properties into their entity correlates; the two will differ only in that ⟦*the*⟧ will be associated with a uniqueness condition (see e.g. Prince 1981a, Kadmon 1987). (213)b introduces the translation and interpretation for *the*: ⟦*the*⟧ is a partial function that can be applied to a nominal projection ⟦NP⟧ iff under every assignment function, ⟦NP⟧ has a unique extension. For every argument on which ⟦*the*⟧ returns a value, that value is identical to that of *ent* on that argument (I use a prime (′) to distinguish the interpretation of the definite determiner from that of the indefinite determiner):[29]

(213) a. $F(the) = \mathbf{ent}'$

b. $[\![\mathbf{ent}']\!]$ = a partial function ent' such that $ent'([\![\text{NP}]\!])$ is defined iff for all g, $|ext_{<w,t,l>}([\![\text{NP}]\!](g))| = 1$. For all α for which $ent'(\alpha)$ is defined, $ent'(\alpha) = ent(\alpha)$.

Thus, when $[\![the]\!]$ is defined, $[\![the\ NP]\!]$ will be a nominalized function identical to $[\![a\ NP]\!]$.

Note that (213) requires relative, but not absolute, uniqueness.[30] To see this, consider a property such as $[\![lid\ to\ a\ jar]\!]$. *Lid [to]* will be interpreted as a two-place property of individuals whose extension will be a set of ordered pairs of entities of sort u that stand in the "lid to" relation. When it combines with an argument, the result will be interpreted as in (214), which carries the further condition that x_u be in the extension of $[\![jar]\!]$:

(214) For all g, $[\![\mathbf{lid\ [to]}(x_u)]\!](g) = [\![\mathbf{lid\ [to]}]\!](g)(g(x_u))$

But given (214), $[\![lid\ to\ a\ jar]\!]$, unlike the other properties we have so far seen, will potentially yield a different value for every assignment function it takes as its argument. Its extension at any index (relative to any assignment function) will be the set of entities that has the property of standing in the "lid" relation to some jar (whose identity may vary with the choice of g). The definite determiner requires that for every g, that extension is a singleton set, but there is no requirement that the member of that singleton set be identical across all g.

The absolute uniqueness (as I will refer to it) associated with a definite like *the dog* is, given (214), a consequence of the fact that $[\![dog]\!]$ is a constant function: for all g, $[\![dog]\!]$(g) will be identical; consequently, for all g, $ext_{<w,t,l>}([\![dog]\!](g))$ will be identical.

Of course, in addition to a uniqueness condition, definites are typically associated with a condition requiring that the referent of the definite be familiar, i.e. already in the domain of the discourse at the time of utterance. Whether this familiarity condition can or should be made to follow from other properties of definites is not clear;[31] what is clear is that the familiarity condition is associated only with those definites whose extensions are absolutely unique: for example, *the lid to a jar*, which does not refer absolutely uniquely, can be used to introduce a novel discourse referent. Thus,

since all DPs headed by a definite determiner satisfy the uniqueness condition embodied in (213), while only a subset of those DPs are subject to a familiarity condition, it is reasonable to have the determiner contribute the uniqueness condition, but not a familiarity condition.

For our purposes, it will suffice to characterize the familiarity condition as in (215):

(215) The extension of a DP must be familiar iff it must be absolutely unique.

At this point we should consider the implications of this characterization of familiarity for the indexation rule of our lf-formation algorithm. Currently our indexation rule assigns every DP a new index; if a new vs. old index is going to correlate with the novelty vs. familiarity of a discourse referent, that will have to change. In Heim's system, all indefinite DPs received a novel index, while definites, names, and pronouns all received old indices; however, since we have given up the perfect correlation between familiarity and morphosyntactic definiteness, our indexation algorithm will have to be somewhat more complicated where definites are concerned. We have a couple of choices. If we want to keep the indexation dependent strictly on morphosyntactic properties of DP, we will need to adopt a rule such as the following:

(216) Indexation:
1. All morphologically indefinite DPs receive a new index.
2. All necessarily quantificational DPs receive a new index.
3. All names and pronouns receive an old index.
4. A morphologically definite DP receives an old index iff all of its complement DPs receive an old index; otherwise, it receives a new index.

Clause 4 in (216) applies recursively: A complement to DP will receive an old index iff all of *its* complements receive an old index, and so on.

If, in contrast, we are willing to let indexation depend on interpretative properties of the DP, we can adopt a rule such as that in (217):

(217) Indexation: A DP receives an old index iff its extension (given a choice of $< w, t, l >$) is absolutely unique; otherwise, it receives a new index.

Since (217) is simpler than (216) and, all things being equal, therefore preferable, I will adopt it.

Finally, we incorporate names and pronouns. Because they pattern with definites in being licensed in the same restricted set of contexts (e.g. the "list" context), they should, like definites, not be excluded categorically from the existential construction. Consequently, they must be interpretable as nominalized functions. Like complementless definites, their nf-interpretations will have absolutely unique extensions and thus (215) will mandate that those extensions be familiar; by (217), names and pronouns will therefore bear an old index.

Proper names will be translated as constants of sort nf. To capture their unique reference and rigid designation properties, we can subject them a condition such as (218)b, which requires that a proper name refer to the same unique individual across worlds and times:

(218) a. If α is a proper name, then $F(\alpha[+nf]) \in Cons_{nf}$

b. If α is a proper name, then for all w, t, l, $ext'_{<w,t,l>}([\![\alpha]\!])$ is a constant function whose value is a singleton set.

Pronouns, in contrast, will be interpreted as variables of sort nf. The uniqueness condition on their extensions appears in (219)b:

(219) a. If α is a pronoun, then $F(\alpha[+nf]) \in Var_{nf}$

b. If α is a pronoun, then for all g, $|ext'(\alpha(g))| = 1$.

Of course, proper names and pronouns, like other DPs, will have corresponding u-sort interpretations as well, defined as in Section 4.1.1.

The interpretations we have assigned to definites, names, and pronouns are unremarkable given the treatment of indefinites we have adopted; we have preserved the essence of an analysis such as Heim's insofar as definites and indefinites are distinguished only presuppositionally.

3.5.2 A Felicity Condition on Existentials

Given the analysis of definites, names, and pronouns just proposed, we know that they cannot be excluded from the existential construction for the same reason as are the necessarily quantificational DPs. What, then, excludes them? The answer I offer is the one proposed in one formulation or another by Prince 1988, Lumsden 1988, and Zucchi 1995:

(220) Felicity Condition: The discourse referent corresponding to the instantiation of the nf-argument of the existential predicate must be novel.

Because I believe that the existential predicate occurs with expletives other than be_{exist} in English without sensitivity to definiteness (see Chapter 5), I will associate the felicity condition in (220) with the expletive *there*, restated as in (221):

(221) $y(\in ext'([\![DP]\!])) \notin D(c)$ (i.e. is not familiar)

Since (221) is pragmatic in nature, we might expect in some contexts that it can be exploited for communicative purposes. I will discuss such possible instances in Chapter 5; among them is the context that licenses "list" existentials.

This felicity condition is quite straightforward, but I will work through some examples to illustrate its effect.

Consider *There was Frank.* As mentioned in the previous section, *Frank* is interpretable as an nf whose extension must be absolutely unique and, therefore, familiar. Thus, while $[\![Frank]\!]$ is acceptable input to the existential predicate, the attempt to instantiate it will go awry because the felicity condition in (221) requiring that the instantiation (to be drawn from $ext'([\![Frank]\!])$) be novel will directly conflict with the condition that the unique entity in $ext'([\![Frank]\!])$ be familiar. Should the condition in (221) cease to apply, we predict *There was Frank* to be both interpretable and potentially felicitous.

Now consider the minimal pair in (222):

(222) a. There was the top to a box floating in the stream.

b. #There was the top to the box floating in the stream.

The difference in the acceptability of these examples results from the fact that *the top to the box* carries a familiarity condition on its extension, while *the top to a box* does not. The presence vs. absence of the familiarity condition is directly related to the definiteness vs. indefiniteness of the DP complement to *top [to]*. Recall that if the complement to *top* is indefinite, the property resulting from combining it with *top* will vary with the choice of assignment function. Consequently, though the definite may demand a unique extension for each choice of assignment function, there is no requirement of what I have referred to as absolute uniqueness, viz. that for all g, $ext([\![top\ to\ a\ box]\!](g))$ be identical. But since the extension of $[\![the\ top\ to\ a\ box]\!]$ need not be absolutely unique, it need not be familiar either.

The context change potential for (222)a appears in (223):

(223) $< D(c) \cup \{x_{nf}, y, z_u\}, \{< w, g > \in Sat(c) |$
$w \leq T(\Delta \mathbf{be_{exist}}(ent'(\mathbf{top}\ [\mathbf{to}](z_u)))(g))$ and $g(y) \in$
$ext'(ent'(\mathbf{top}\ [\mathbf{to}](z_u))(g))$ and $z_u \in ext'(ent(\mathbf{box}))\} >$

For any given g, (223) will result in the introduction of a lid to some box that, while unique with respect to that box, is nonetheless novel.

To see why the extension of *the top to the box* must be familiar, assume $[\![top\ [to]]\!]$ is a function in $[U \rightarrow [U \rightarrow E]]$. It will combine with the referential (u-sort) interpretation of *the box*. But since *the box* is definite, the variable that is its u-sort interpretation will be subject to the condition that it be unique for any choice of g; since for all g, $\mathbf{box}(g)$ will return the same value, for all g, $ext(\mathbf{box}(g))$ will be the same–that is, it will be absolutely unique. In combination with the definite article, the absolute uniqueness of the extension of $[\![the\ top\ to\ the\ box]\!]$ will follow. Given the familiarity condition adopted in the previous section, the unique member of the extension of *the top to the box* will be familiar. Consequently, (222)b is unacceptable for the same reason as is *There was Frank.*

Incidentally, the acceptability of (222)a in contrast to (224) lends support to the nonquantificational treatment of the definite determiner:

(224) *There was every top to a box floating in the stream.

Given that $[\![$*top to a box*$]\!]$ is a property of entities in U, (224) is bad for the same reason as is **There was every dog.* Were the definite determiner to be assigned only a quantificational interpretation, we would expect (222)a to be bad for the same reason. The fact that it is not supports our decision to interpret the definite determiner as a partial function corresponding to *ent*.

Finally, consider (225)a, which makes a slightly different point from that made by the previous examples:

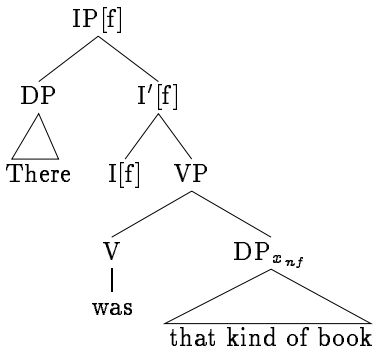
(225) a. There was that kind of book.

b. There was every kind of book.

c. There are two kinds of books.

Like (225)b, and unlike (225)c, (225)a has only a reading that intuitively corresponds to the assertion of the existence of instances of the kinds in question (see Section 4.2.3, above); it lacks a reading corresponding to the assertion of the existence of the kinds themselves. The absence of the latter reading follows from the novelty condition in an obvious way: It could only arise if we were drawing from the extension of an nf that itself corresponded to a property of nfs–that is, if the nf being instantiated by the existential predicate was $ent'([\![\textbf{kind [of](book)}]\!])$.[32] The lf corresponding to this interpretation appears in (226):

(226)

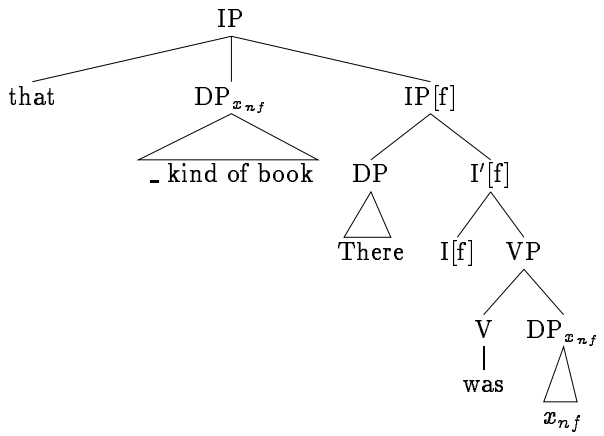


But given what we have said about the interpretation of definite determiners, $ent'([\![\textbf{kind [of](book)}]\!])$ will have a unique and familiar extension; consequently, combining it with $[\![be_{exist}]\!]$ will produce the same conflict we saw with *There was Frank*: The inherent

properties of the postcopular DP dictate that its extension is familiar, while the felicity condition associated with the existential construction require that it not be. Consequently, the lf in (226) will not yield an acceptable context change potential, and the "existence of kinds" interpretation is blocked.

Consider now the derivation of the reading (225)a does have. This interpretation is exactly analogous to the quantificational example in (225)b, suggesting that *that* is being interpreted as a quantifier in (225)a. Assume that the definite determiners (like the numerals and, as I suggested above, the indefinite article) have quantificational interpretations alongside the interpretations we have assigned. This assumption allows us to assign the lf in (227) to (225)a:

(227)



This lf will be translated into PT, interpreted, and assigned a context change potential in exactly the same way as was done earlier for lfs containing the quantifier *every*. The only difference will involve the particular contributions of the two quantifiers. Thus, we assign (226) the translation in (228) and the context change potential in (229):

(228) $\mathbf{that}(\dagger\mathbf{kind[of]}(\mathbf{book})(x_{nf}), \dagger\mathbf{be_{exist}}(x_{nf}))$

(229) $Sat(c + \mathbf{that}(\dagger\mathbf{kind}[\mathbf{of}](\mathbf{book})(x_{nf}), \dagger\mathbf{be_{exist}}(x_{nf}))) = < D, G >$, such that:
1. $D = D(c)$
2. $G = \{< w, g > \in Sat(c)|$ there is some $< w, g' >$ (where g' agrees with g on every element in $D(c)$) such that:
(a) $< w, g' > \in Sat(c + \dagger\mathbf{kind}\ [\mathbf{of}](\mathbf{book})(x_{nf})$;
(b) For all $< w, g'' >, < w, g''' > \in Sat(c + \dagger\mathbf{kind}[\mathbf{of}](\mathbf{book})(x_{nf}), g''(x_{nf}) = g'''(x_{nf})$ in w; and
(c) there is some $< w, g'''' >$ (where g'''' agrees with g' on every element in $D(c + \dagger\mathbf{kind}[\mathbf{of}](\mathbf{book})(x_{nf}))$) such that $< w, g'''' > \in Sat((c + \dagger\mathbf{kind}[\mathbf{of}](\mathbf{book})(x_{nf})) + \dagger\mathbf{be_{exist}}(x_{nf}))\}$

The fact that our analysis has forced a quantificational interpretation of *that kind of book* in the existential construction predicts that, as in the quantification existentials we have seen above, discourse anaphora to the instantiated entity should be blocked. The examples in (230) confirm this prediction:[33]

(230)
a. There was that kind of book listed in the library card catalog. #However, it was checked out.

b. There is that type of student in the class. #She does better than most.

c. There was the sort of person you don't usually find at a corporate party. #But I didn't get to meet him.

The failure of discourse anaphora in the examples in (230) poses a problem for one kind of explanation that has been offered for the acceptability in existential sentences of definite kind DPs, namely that they are licensed in virtue of being "covertly" indefinite or having an interpretation equivalent to that of an indefinite (e.g. *that kind of book* equivalent to *a book of that kind*; see most recently e.g. Wilkinson 1988). For if they had an existential indefinite interpretation, we would expect discourse anaphora to be possible, as it is possible in (231):

(231) a. There was a book of that kind listed in the library card catalog. However, it was checked out.

b. There is a student of that type in the class. She does better than most.

c. There was a person of the sort you don't usually find at a corporate party. But I didn't get to meet him.

I will return to this point in Section 6.

3.5.3 Summary

I have completed the exposition of our PT-fragment of English, incorporating an analysis of the existential construction and showing how the facts encompassed under the definiteness effect are accounted for. Definites, names, and pronouns were our final addition and were interpreted in fundamentally the same way as indefinites, differing only in that their extensions must be unique (and in most cases, familiar).

We have already seen some attractive consequences of the analysis developed above; we should now subject it to a closer comparison with previous analyses. The principal focus of comparison will be on the decision to treat the argument of the existential predicate as a nominalized function as opposed to an ordinary (u-sort) entity; the discussion will take us back to the data introduced in Section 2.

3.6 Advantages of the Analysis

The difference between the analysis advocated here, which I will refer to as the *property-argument analysis*, and an *entity-argument analysis* (as I will refer to any analysis on which the existential predicate expresses a property of an ordinary entity)[34] simply involves the semantic sort attributed to the argument associated with the postcopular DP. Since we know in any case that predicates may be sensitive to the sort of their arguments (witness the "kind-level" predicates such as *widespread* (Carlson 1977a)), our only innovation has been to allow all nonquantificational DPs (as opposed to

just e.g. nominalizations or mass terms, see e.g. Chierchia 1985) to be interpretable as nominalized functions.

A property-argument analysis makes at least three general predictions that an entity-argument analysis does not make. First, it predicts no cross-linguistic variation in the range of necessarily quantificational DPs licensed in the construction, because the licensing and exclusion of such DPs depends on an essential semantic characteristic of the existential predicate. If there is a true counterpart to the existential predicate in other languages, we expect that predicate never to license DPs that quantify over entities in *U*–if it did, it would not express the property I take the existential predicate in English to express–but always to license DPs that quantify over nfs. However, since the restriction on definites in existential sentences is attributed to a relatively superficial felicity condition rather than to the nature of the property expressed by existential predicate, we might expect cross-linguistic variation in the range of the definite and indefinite DPs licensed in the construction–that is, we might expect the felicity condition associated with the construction to vary. Moreover, any such variation should be sensitive to independently motivated discourse-functional classifications of nonquantificational DPs. For example, we might find a language which, rather than requiring the instantiated referent contributed by the utterance of an existential sentence to be *hearer new* (which is effectively what I have claimed; cf. Prince 1992 and Chapter 1), requires it merely to be *discourse new*;[35] or, we might find a language in which there is no *definiteness* effect at all–only a "*quantification* effect."

The predictions of an entity-argument analysis concerning cross-linguistic variation in the range of DPs licensed in the construction will depend on the account of the DE associated with that analysis. However, in general (and as reflected in previous works) such analyses have nothing to gain by positing a nonunified account of the DE. For what would such an account be like? To rule out definites, something like the novelty condition adopted above would be necessary; but to rule out the right subclass of quantificational DPs on grounds meaningfully different from those ruling out definites, some stipulation would have to be made, for a condition on DP[Q]s such as (232) (the distillation of Lumsden's proposal suggested in Chapter 1) encompasses the definites in any case, undercutting the

point of a nonunified account:[36]

(232) A DP is licensed in the existential construction iff it can be used to introduce a (persistent or temporary) hearer new discourse referent.

To avoid undercutting a nonunified account of the DE in this way, the only choice is a completely unmotivated condition such as: "necessarily quantificational DPs are excluded unless their nominal is a kind expression." Consequently, advocates of an entity-argument analysis will try (and have tried) to capture the exclusion of definites and the relevant class of quantificational DPs under a single generalization.

However, any analysis positing a unified generalization covering the DE makes rather different predictions about cross-linguistic variation; in particular, it offers no reason to expect asymmetric degrees of variation in the licensing of quantificational vs. non-quantificational DPs. So what kind of cross-linguistic differences does a generalization like (232) lead us to expect? Since (232) is a felicity condition on use, the claim underlying it (in conjunction with the assumption that the argument of the existential predicate is of sort u) is that the DE is entirely a discourse-functional phenomenon. Ultimately, a purely discourse-functional account of the DE predicts not only the kind of variation predicted by the property-argument analysis (see the preceding paragraphs), but also variation in the licensing of necessarily quantificational DPs. The reason it predicts the latter sort of variation is that quantificational DPs are not naturally covered by discourse-functional classifications such as "introduces a hearer new discourse referent"; consequently, languages are likely to classify DP[Q]s arbitrarily with respect to discourse-functional categories.

Thus, the analysis advocated in this chapter, with a nonunified account of the DE, predicts a more limited range of cross-linguistic variation than does an entity-argument analysis with a unified account of the DE cast as a felicity condition; and it is superior to an entity- argument analysis with a nonunified account of the DE in that it need not separately stipulate the condition governing the distribution of necessarily quantificational DPs. In addition, the property-argument analysis, unlike such an entity-argument analysis, predicts that, should there be any context in English in which

the novelty condition can be defeated, only definites and not quantificational DPs, should be affected.

This second prediction is realized. In the next Chapter, I will offer evidence that the appearance of definites in list existentials such as (233)b exemplifies the possibility of violating the existential construction's novelty condition (Hannay 1985, Lumsden 1988, and Abbott 1992 have all suggested a discourse-functional explanation of this sort for list existentials). Notice that the necessarily quantificational DPs generally excluded from the existential construction do not sound any better in list contexts (e.g. (233)c,d):

(233) a. Who can help us?

b. Well, there's the plummer in that shop.

c. *Well, there's each plummer in that shop.

d. *Well, there's every plummer in that shop.

The contrast between (233)b vs. c,d must be stipulated on a unified analysis of the DE.

The prediction concerning cross-linguistic variation remains to be tested. But looking at just one language that manifests a weaker DE in the existential construction than English, namely Catalan, we find nothing to contradict the prediction of the analyses we have advocated. Proper names and definites are quite acceptable in Catalan existential sentences in contexts where they would not be allowed in English, such in (234) (note that the question is understood to be rhetorical, and both question and answer are uttered by the same speaker; compare the oddness of the English translation):

(234) Vaig anar a la festa i saps qui hi havia?
AUX-1sg go to the party and know-2sg who there-was

Hi havia la Joana!
there-was the Joan
I went to the party and do you know who there was? There was Joan!

In contrast, DPs quantifying over u-sort entities are bad ((235)), even though quantified kind expressions are licensed ((236)):[37]

(235) *Hi havia cada un dels cotxes a la cursa.
there-was each one of-the cars at the race.

(236) Hi havia tota classe de cotxes a la cursa.
there-was every class of cars at the race.
There was every type of car at the race.

This array of facts has no straightforward explanation if there is a single, nondisjunctive felicity condition associated with the post-copular position in existential sentences.

Though much more cross-linguistic investigation needs to be done, we see preliminary evidence from the distribution of DPs in list existentials supporting a nonunified account of the DE and, along with it, the general type of analysis developed in this chapter.

The second prediction made by a property-argument analysis, but not an entity-argument analysis, is that any linguistic generalizations sensitive to the semantic sort or referentiality of an argument will likely distinguish the argument of the existential predicate from the argument of a verb such as *bark*. In contrast, if we adopt an entity-argument analysis, we expect, if anything, that linguistic generalizations sensitive to the semantic sort of an argument or its referentiality will group them together. One such generalization will be discussed shortly; we will again see that the facts support the property-argument analysis.

Third, the property-argument analysis predicts there should be a correlation between the licensing of necessarily quantificational DPs in the existential construction and the behavior of the DP with respect to "sort-sensitive" generalizations, because the licensing of those DPs is determined by the sort of entity over which they quantify. For example, suppose, contrary to the expectation raised by this analysis, we do find one or more languages that license quantificational DPs such as *each dog* in their equivalent of the existential construction. In any such languages we should find that any phenomena that target u-sort (as opposed to nf-sort) arguments should target the argument of that existential predicate as well. An entity-argument analysis of the construction makes no such prediction.

These, then, are some general differences between the two kinds of analyses. I now turn to the data introduced in Section 2. We will

see that, while an entity-argument analysis can account successfully for some of the data, the property-argument analysis accounts more successfully for more of the existential construction's peculiarities.

3.6.1 Acceptability of Quantified Kind DPs

The first special property of the construction noted in Section 2 was the contrast in acceptability of quantified kind DPs and other necessarily quantificational DPs. In order to account for the acceptability of quantified kind expressions under an entity-argument analysis of the construction, two strategies can (and have been) be pursued: (1) find a way to analyze quantified kind terms as covert indefinites of some sort (cf. e.g. remarks in Milsark and Wilkinson 1988); or (2), assuming a treatment of the DE that is entirely grounded in presupposition, find a way to distinguish the presuppositions associated with quantified kind terms vs. other quantificational DPs (cf. Lumsden 1988 and the discussion in Chapter 1).

The latter strategy is reasonably successful; the statement in (237), a version of which was introduced in Chapter 1, will do the job:

(237) A DP is licensed in the existential iff it can be used to introduce a (persistent or temporary) hearer new discourse referent.

Assuming that all quantificational DPs carry the presupposition that their domains are non-null, the temporary discourse referents they introduce will not generally correspond to hearer new individuals; consequently, such DPs will not be licensed in the existential construction. The exceptions are the quantified kind terms, which can introduce hearer new referents corresponding to instances of those kinds.

In contrast, the covert indefinite strategy faces empirical problems, one of which was alluded to at the end of Section 5.2. As mentioned there, Wilkinson 1988, 1991 hypothesizes that DPs of the form *Det kind of X* are licensed in the existential construction because they have an existential indefinite interpretation equivalent to that of *a(n) X of Det kind.*[38] But we have already seen facts such as the contrast in (238), which shows that *Det kind of X* cannot have an existential indefinite reading, since it is unable

to license discourse anaphora to instances of the kind, suggesting that, when Det is definite or quantificational, it must be interpreted quantificationally:[39]

(238) a. There is that type of student in the class. #She does better than most.

b. There is a student of that type in the class. She does better than most.

One might try to account for the data in (238), while maintaining that the argument of the existential predicate is of sort u, by adopting the hypothesis of Heim 1987 that the existential construction is subject to the following condition at the relevant level of logical representation:

(239) * *There be* x, where x is an individual variable.

Heim takes (239) to follow from what is essentially a presupposition-based account of the DE; in particular, it is clear from her discussion (especially her footnote 4) that (239) is meant to exclude pronouns and wh-traces and is orthogonal to the theory of indefinites as "variables" developed in her dissertation.[40]

Heim points out that, given the right assumptions, (239) correctly blocks binding of the full postcopular position by a quantifier (e.g. after QR has applied) but does not itself block binding of some *part* of the postcopular position. She then suggests that some cases of apparent full binding of the postcopular position, such as in the questions in (240)a and b, can be accounted for by positing reconstruction to derive interpretations as in (240)c,d, respectively (where questions are interpreted as sets of propositions):

(240) a. What is there in Austin?

b. How many people were there at the party?

c. {p: There is a kind x such that p is true and p is the proposition that there are (is) things (a thing/stuff) of kind x in Austin}

d. {p: There is a degree d such that p is true and p is the proposition that there were d-many people at the party}

Although Heim does not discuss definite/quantified kind terms, the interpretation she gives for (240)c suggests strongly that the licensing of those kind expressions in the existential construction should fall under the same generalization. Combining her proposal with some version of Wilkinson's, the sentence in (241)a could be assigned the interpretation in (241)b, paraphrasable as (241)c:

(241) a. There was that kind of wine.

b. $(\mathbf{THAT}x : \mathbf{kind\ of\ wine}(x))$
$[\exists y[\mathbf{wine}(y) \wedge \mathbf{kind}(y, x)]$

c. That kind x of wine is such that there was wine of kind x.

The fact that the quantifier denoted by *That kind* takes scope over the variable x in the quantifier denoted by *wine of kind* x in (241)b could account for the failure of discourse anaphora in (238)a and like examples.

The idea underlying this analysis is essentially the same as that underlying the analysis proposed in this dissertation. But its implementation raises some questions. First, why should *that* have to be interpreted quantificationally in (241)b? This has no explanation on the reconstruction analysis, though we saw in Section 5.2 that it does have an explanation on the property-argument analysis.

A second question is more general. What conditions govern the reconstruction needed to derive e.g. (241)b above? Are they the same as those governing other putative cases where reconstruction is posited? To answer these questions, we will need to consider some of the scope and quantification facts to be discussed in the next section.

To summarize, an entity-argument analysis of the existential predicate can account for the distribution of definite and quantified kind expressions without trouble if they are licensed in virtue of their presuppositional properties, but we have seen some reason to think that a "covert indefinite" analysis of their distribution will run into difficulties. However, the former type of entity-argument analysis offers no insight into the similarity between the argument of the existential predicate and the predicate nominal with respect to the distribution of quantificational DPs, since the predicate nominal is not a referring expression. In contrast, as I have shown

above, the similarities between the two sorts of arguments follow directly if we take them both to be nominalized functions.

3.6.2 Quantification and Scope

In Section 2.2, I observed that though the postcopular DP, like the predicate nominal but unlike DPs in other argument positions, generally manifests a narrowest scope effect (compare (242)a vs. b), this effect goes away when the postcopular position is filled by a quantified kind DP ((242)c):

(242) a. Andy didn't invite some student to the party.

b. *There wasn't some student at the meeting.

c. The food critic was annoyed because there wasn't some variety of wine on the list.

On the property-argument analysis, this array of data is fully expected: The fact that *some* must be interpreted wide with respect to negation entails that whenever it heads the postcopular DP in a negated existential, that DP will have to undergo QR–that is, that it will have to be interpreted quantificationally. Since this analysis prohibits from the existential construction DPs that quantify over u-sort entities, (242)b is bad; (242)c is acceptable because its postcopular DP quantifies over an acceptable sort. And since the DP in (242)c can be interpreted quantificationally, we expect it to be able to interact scopally with other material in its clause.

An entity-argument analysis that posits (237) has nothing to say about these facts, since there is no requirement that DPs introducing hearer new referents be interpreted as if they had narrow scope with respect to other operators in the sentence.

In contrast, though the reconstruction analysis does predict the narrowest scope effect, it is less clear that it accounts successfully for the scopal properties of quantified kind expressions. On this analysis, the narrowest scope effect results from the fact that the postcopular DP must in general be interpreted fully in situ: if QR takes place with no reconstruction, a variable is left behind in the postcopular position, in violation of (239), and the requisite kind of partial reconstruction is not an option for DPs such as *some student*. Thus, the only possibility is interpretation in situ, which

will either yield consistently narrowest scope for the DP or, in the case of (242)b, correctly result in an uninterpretable formula.

However, it is unclear that the reconstruction analysis should predict sentences such as (242)c to have an interpretation on which the DP does not receive narrowest scope. To see why, consider the following schematic post-reconstruction representation of the relevant portion:

(243) (Some x: x is a variety of wine)
¬ [there wasn't wine of variety x available]

In the scope configuration corresponding to (243), negation intervenes between the quantifier contributed from within the DP and the DP itself. But Roberts 1987, citing earlier work by Larson, observes that when a DP-internal quantifier takes scope over the DP containing it (that is, on the inverse linking reading), it must have immediate scope over that DP; another quantifier (such as the negation in (243)) cannot intervene. For example, consider (244):

(244) Two politicians spied on someone from every city.

Of 6 logical possibilities, (244) can have only the scope configurations in (245)a; those in (245)b, in which *two* takes scope between the universal and existential operators contributed by the object DP, are impossible:

(245) a. $\forall\exists 2, 2\forall\exists, \exists\forall 2, 2\exists\forall$

b. $*\exists 2\forall$, $*\forall 2\exists$

In light of this immediate scope constraint, the interpretation assigned to (242)c is surprising; we might have expected the sentence to lack this interpretation, since *some* does not take immediate scope over the DP from which it originates. Perhaps we could try to derive the exceptional relaxing of the immediate scope restriction from the fact that reconstruction is being posited. But since reconstruction is an operation that can apply to quantificational DPs in all kinds of positions, we would have no explanation for the fact that partial reconstruction cannot provide a sentence like (244) with interpretations that violate the immediate scope restriction–unless there was something fundamentally different between a DP like *a senator from every state* (or *an animal of every kind*) and one like *every kind of animal*.[41]

3.6.3 Contact Clauses

The contact clause facts introduced in Section 2.3 exemplify a phenomenon that distinguishes the argument of the existential predicate from typical (extensional) u-sort arguments.

Recall that contact clauses are restricted to certain copular and existential contexts such as those in (246), along with modal and intensional contexts ((247)a,b); they are prohibited from typical extensional contexts ((247)c,d):

(246) a. There's a student in my class went to America.

b. This is the girl wants to see you.

c. Here's the boy'll fix it for you.

d. I have a brother works in Dublin.

e. I'm the only one knows how to act.

(247) a. I'd like to marry a man always pays his debts.

b. I wouldn't hit a fella said that.

c. *I married a man always pays his debts.

d. *I didn't hit a fella said that.

What do the copular/existential and intensional contexts have in common? On the basis of these data, Doherty 1993 proposes that contact clauses are possible only in contexts where the DP may be construed "nonreferentially." Recasting this hypothesis more precisely in the terms developed in this chapter, we can say:[42]

(248) A DP modified by a contact clause cannot have a u-sort interpretation when evaluated with respect to the actual world.

That is, a DP modified by a contact clause cannot be referential, as the term is defined in Chapter 1. This condition allows DPs containing contact clauses to appear in nf-sort argument positions when those positions are interpreted with respect to the actual world (e.g. in the existential or copular construction), and in u-sort positions when interpreted with respect to nonactual worlds.

The fact that DPs modified by contact clauses sometimes receive a generic or kind interpretation (Doherty (p.c.)) lends further support to this proposal.

Neither variety of entity-argument analysis we have considered has anything to say about the distribution of contact clauses. Their distribution cannot be related to the felicity condition associated with the use of the construction, since no similar felicity condition holds for argument positions within the scope of modals or intensional predicates to the exclusion of extensional argument positions; nor does their distribution correlate in any obvious with the condition that the postcopular position may not contain a variable at the relevant level of representation.

The reader may object that this is not a fair criticism of these analyses. Could we not propose that existential *be* is a kind of intensional predicate and capture the distribution of the contact clauses while preserving the essence of the entity- argument analysis? For example, suppose we took the existential predicate to express a property of an intensional generalized quantifier, that is, a function from possible worlds to generalized quantifiers, building on Montague's proposal that the predicate nominal (in the relevant cases) and arguments of intensional predicates have such an interpretation.[43] We would then have the semantic distinctions necessary to account for the contact clause facts. But this change in the analysis is an admission that there is something special about the interpretation of the postcopular DP that goes beyond the novelty condition. And one of the points of this chapter is to argue that, once this admission is made, it is worth trying to make as many properties of the postcopular DP as possible follow from its basic interpretation. I have shown one way of imputing a kind of intensionality to the postcopular position that allows for a much simpler statement of the definiteness restriction than either of the alternative accounts, one which may extend more successfully to other languages as well.

3.6.4 Relativization

Finally, consider again the relativization facts introduced in Section 2.4. First, when the postcopular DP is relativized out of the existential or copular constructions, many speakers will accept only

that or $\emptyset$ as the relative pronoun:

(249) a. %The people who there were at the party were drunk.

b. The people (that) there were at the party were drunk.

c. *They dressed like the eccentric women who they were.

d. They dressed like the eccentric women (that) they were.

On the analysis we have developed, the selective distribution of the relative pronoun reduces to a case of sensitivity to semantic sort: we can say that just as relative pronouns must match the case marking that would be assigned to a constituent in the gap position, they must be able to match the semantic sort associated with the gap position. If *who* can identify only entities of sort u, then it should be prohibited from marking the postcopular gaps in (249).

An entity-argument analysis with the presupposition-based account of the DE represented in (237) has nothing to say about the distribution of relative pronouns. Consider an example like (250):

(250) A doctor to whom I spoke yesterday recommended surgery.

There is no reason to suppose that either the doctor identified in (250) or the fact that the speaker spoke to anyone at any time are familiar to the hearer of the sentence. Consequently, we have no reason to suppose that there is any connection between the impossibility of *who* in (249)a and the condition licensing DPs in the postcopular position. Thus, the analysis fails to shed light on yet another similarity between the existential and copular constructions.

In contrast, relative pronoun distribution could be accounted for on the reconstruction analysis with the condition that *who* be licensed only when the gap in the relative clause is filled by an individual variable at LF. Such a condition would plausibly extend to the predicate nominal case as well.

The second peculiarity of relativization out of the postcopular position is the limited range of determiners that can cooccur with the noun modified by the relativization:

(251) a. All the/What/The people there were at the party were drunk.

b. *Some people there were at the party were drunk.

These facts are less simple to explain. Carlson 1977b claimed that the only kind of relativization possible out of the existential construction was what he called "amount" relativization, a special form of restrictive relativization. Amount relatives are so called because the DPs in which they appear denote quantities (or degrees) or else quantify over quantities or degrees. For example, the DP in (252)a can be paraphrased as *the amount of champagne they spilled that evening*, and as such does not require identity of champagne, but rather only identity of quantity, as Heim 1987 (38) observed:

(252) a. It will take us the rest of our lives to drink the champagne they spilled that evening. (Heim 1987)

b. Max put everything he could in his pocket. (Carlson 1977b)

Similarly, the preferred interpretation of (252)b can be represented along the lines of (253)a, as opposed to (253)b:

(253) a. (MAX d: Max could put d-many things in his pocket) [Max put d-many things in his pocket]

b. ($\forall x$: x is a thing that Max could put in his pocket)[Max put x in his pocket]

These examples indicate that one of the defining properties of amount relatives is that the head of the relative contributes a different kind of condition on the referent of the DP as a whole than does the relative clause. Intuitively, the relative clause provides a measure or quantity while the head contributes information about what is being measured, or in some cases, the unit of measure (as in: *It would take me a year to earn the dollars Kent owes the bank.*). This intuition apparently lay behind Carlson's decision to treat the determiner+relative clause as a complex quantificational determiner taking the head noun as its argument.

As with relative pronoun distribution, an entity-argument analysis with a presupposition-based account of the DE has nothing to say about this constraint. However, Heim 1987 addresses these facts directly. Taking up Carlson's analysis, Heim suggests that amount relatives are licensed in the existential construction because, at the relevant level of representation, the postcopular position in a relativized existential is filled by a reconstructed expression such as *d-many books*; for example, the relative clause in (254)a (adapted from Safir 1982) would have a representation like (254)b:

(254) a. The books there were on his shelf

b. (THE d: There were d-many books on his shelf)

The idea is that amount relativization should involve binding of a variable over amounts or degrees, as opposed to a variable over individuals. We saw in previous sections that Heim posits the condition in (239), repeated in (255):

(255) * *There be* x, where x is an individual variable.

Since (254)b does not violate the constraint in (255), the amount relative is licensed.

In contrast, in order for an example like (254)a to have an ordinary restrictive relative interpretation, it would have to have a representation such as (256):

(256) (THE x: x is a book and there was x on his shelf)

Since this representation violates (255), the restrictive relative interpretation is blocked.

However, this line of analysis results in insufficiently strong satisfaction conditions for sentences containing relatives formed from existentials. Given the representation in (254)b, the truth of the sentence in which an amount relative appears should depend only on the quantity identified by the DP, and not on the particular individuals or matter identified by that DP. Consequently, if it is the case that relative clauses formed from existentials can only have the type of representation shown in (254)b, the truth of any sentence containing a relative clause constructed from an existential sentence should only ever depend on a quantity of individuals

or matter, and never on the identity of particular individuals or matter.

But this is not the case. The truth of (257)a depends on the speaker's having talked to a set of particular people, and not merely to a particular cardinality of people. That is, it does not have the interpretation schematized in (257)b:

(257) a. I talked to the people there were at that party.

b. (MAX *d*: There were *d*-many people at the party) [I talked to *d*-many people at the party]

Though (257)a entails (257)b, satisfaction of the weaker truth conditions associated with (257)b is not sufficient to guarantee the truth of (257)a. This indicates that the DP containing the relative clause in (257) is not interpreted simply as quantifying over degrees and, therefore, that the amount relative analysis cannot stand as is. But if the interpretation of relatives formed from existential sentences does not in general follow from the reconstruction-based analysis, we lose one of the more interesting pieces of motivation for that analysis.

Though the relativization facts also fail to follow in any direct way from the interpretation proposed in this chapter for the existential construction, we can consider how the property-argument analysis might illuminate them. Clearly there is a similarity between the relativization of quantity expressions and the relativization of the postcopular DP in existential sentences that led Carlson to give them similar analyses in the first place. Notably, a relativized quantity expression must be headed by a determiner with universal force, as the contrast between (258)b and c shows:

(258) a. The cargo weighed 5 tons.

b. The tons the cargo weighs make little difference.

c. *Some ton/two tons/most tons the cargo weighs make little difference.

We might begin to get at the source of the similarity by asking what the relata of the predicate *weigh* are. Does *weigh* express a relation between an entity and a quantity, or a relation between an entity and a *quantity description*?

Suppose, for the moment, that *weigh* expresses a relation between an entity and a quantity description. This relation must be mediated by another entity not explicitly a part of the argument structure of the predicate, namely the actual weight of the cargo. The weight of the cargo (at any given world-time-location index) is presumably determined by a weight-measure function, call it W. The *weigh* relation between some entity x and some quantity description Q is mediated by $W(x)$ in that the *weigh* relation will hold iff $W(x)$ is in the extension of Q (as stated in (259)a), where $W(x)$ is in the extension of Q iff the value of $W(x)$ on the measure function corresponding to the unit constituent of Q is equal to the numeric constituent of Q ((259)b):

(259) a. For all x, Q, $\mathbf{weighs}(x, Q)$ iff $W(x) \in ext(Q)$

b. For all x, n a number, U a unit,
$W(x) \in ext([n(U)]_Q)$ iff $U(W(x)) = n$

The *weigh* relation needs to be mediated in this way for two reasons: (1) despite the fact that for any x, there will be exactly one value for $W(x)$ at any given index, the *weigh* relation may hold between x and any number of quantity descriptions at the same time; and (2) the quantity descriptions to which x bears the *weigh* relation at any given time are systematically related. That is, our cargo may weigh five tons, but if it weighs five tons, it also weighs 10000 pounds, 160000 ounces, some number of kilograms, etc.

Since there is exactly one value for $W(x)$, it will be describable by exactly one quantity description for any given unit in which the $W(x)$ is measured.[44] This fact could give the beginning of an explanation for the contrast between (258)b and c. The DP *the tons the cargo weighs* intuitively identifies the value for the weight function on the cargo, measured in ton-units:

(260) a. $\lambda w[w \in ext([\![tons]\!]) \wedge W([\![the\ cargo]\!]) = w]$

b. For all x, U a unit, $W(x) \in ext(U)$ iff
$\exists!1n[U(W(x)) = n]$

If we take (260)a to be a reasonable representation of the interpretation of the nominal *tons the cargo weighs*, then the fact that the value of W on the cargo is necessarily unique will require that

it combine with a determiner entailing uniqueness or maximality. Observe that other nominals characterizing unique or maximal individuals sound anomalous with determiners that do not guarantee uniqueness or (where relevant) maximality:

(261) a. *Some weather of the day was lovely.

b. The weather of the day was lovely.

c. *Some grandparents of Sally raised her well.

d. The grandparents of Sally raised her well.

An analysis similar to that in (260)a could be assigned to a DP containing a relative clause built from an existential sentence if we could motivate some function whose value was the (perhaps plural) individual introduced via that sentence. An example of such a function would be one that gives a "population" value for a given index in terms of the description associated with the postcopular DP. That is, we might assign a relative clause such as *The people there were at the party* the representation in (262):[45]

(262) $\lambda u[u \in ext([\![person]\!]) \wedge Pop(< w, t, l >) = u]$

Though the representations in (260)b and (262) leave much to be explained, they suggest what is similar to DPs modified by relative clauses headed by expressions of quantity-units and those modified by relative clauses built from the existential construction: in each case, the DP as a whole expresses the value of a function: the weight-function in the former case, and the "population" function in the latter. Moreover, the head of the relative clause in each case provides the description by which the function value is identified. The distinguishing feature of these relatives is that the gap does not transparently identify the sort of entity in the extension of the DP containing the relative clause: the sort of the gap in each case is an abstract object, that is, a description, while the DP as a whole determines a group of entities of a different sort, viz. the sort in the extension of the sort corresponding to the gap. Finally, since the "population" function posited for the existential construction returns a (perhaps plural) individual and not an amount, the truth of a sentence such as (257)a will depend on the identity of those individuals, and not merely on their quantity.[46]

3.6.5 Summary

In the preceding subsections I have compared the analysis of the existential construction developed in this chapter to analyses that take the argument of the existential predicate to be an "ordinary" entity, and pointed out some of its advantages. Specifically, the property-argument analysis, as I have called it, both makes stronger predictions about cross-linguistic variation in the range of DPs found in the existential construction and stands a chance of accounting for a wider range of phenomena than do what I have called entity-argument analyses.

The discussion is in many ways incomplete. At a descriptive level, I have not considered, for example, what other sorts of extraction facts might reveal about the construction, nor have I looked much beyond English. At a theoretical level, I have not talked about the possible costs of allowing nonquantificational DPs quite generally to have both nf- and u-sort interpretations. Clearly, an important issue concerns the implications of this proposal for the analysis of natural kind expressions and genericity, since the range of DPs that give rise to natural kind and generic readings is only a very small subset of those that I assign nf-interpretations. It is clear that what is called for is a better understanding of the contribution made by the cardinal and other intersective determiners, whose nature remains somewhat opaque and which I have treated with a certain amount of equivocation. Finally, comparison of the existential predicate with intensional predicates remains largely a promissory note.[47] Nonetheless, the present proposal is explicit enough to allow for serious consideration of these issues in the future.

The next task is to provide a semantics for the optional predicative phrase. This is the topic of Chapter 4.

Notes

[1]Let me emphasize that I am not claiming that the argument of the existential predicate is *identical to* a Carlsonian kind. The postcopular DP in the existential construction can take many forms that cannot be used to express natural kinds; cf. the anomaly of (i), for example:

(i) *Two cats are widespread.

When I use the phrase "kind expression" or "kind DP" throughout this chapter, it should be understood to refer only to certain bare plurals and those expressions containing a noun such as *kind* in the relevant position.

Nonetheless, the special behavior of kind expressions in existential sentences clearly points to a similarity between the Carlsonian kind and the argument of the existential predicate, though the exact nature of that similarity remains to be explored.

[2]Technically, however, what I call a context change potential will differ somewhat from Heim, as will become clear below. See e.g. Kamp 1981 and Groenendijk and Stockhof 1991 for other implementations of dynamic interpretation.

[3]Whether it is interesting or useful to extend the analogy between copular and existential sentences to cases involving definite descriptions is not entirely clear at first glance. Definite descriptions are licensed in predicate nominal position, though they generally result in a "specificational" interpretation:

(i) Fred is the doctor.

Definite DPs in the existential construction will be discussed in Chapter 5.

[4]On a GB analysis, some functional node (e.g. TenseP) would presumably have to dominate VP in order for tense to be licensed. Since the syntactic analysis of these clauses is not our concern here, I will stick with the more descriptive label. See Doherty 1993 for discussion.

[5]Specifically, contact clauses are excluded from predicational copular sentences:

(i) *Bill is a man owns one.

In addition to the context mentioned in the text, contact clauses show up frequently in it-clefts, for example:

(ii) It's Bill owns one.

I will have nothing to say about it-clefts here.

[6]There are a couple of exceptions to this prohibition, viz. DPs containing contact clauses have been attested as the complements to the verbs *know* and *meet*. I do not have an explanation for why these verbs are exceptional.

Note, incidentally, that (134)c, below, confirms that the noun-contact clause string does form a constituent: since *does that* is not the sort of unit that could intervene between subject and verb, it must be a part of the subject DP.

[7]The definition of complex sorts is taken from C&T's PT_2.

[8]There is variation in the literature as to whether properties themselves, rather than or in addition to information units (or propositions), should be treated as primitives. I will not address this issue here. See Chierchia et al. 1989 for various perspectives.

[9]I will leave this characterization of the truth predicate as is in the interest of remaining as faithful as possible to C&T's system; it seems more appropriate for natural language applications to redefine † so as to combine only with information units.

[10]$[\![\alpha]\!]$ stands for "the interpretation of α." It is assumed to be relativizable to different models. $g(e/x)$ is a function just like g except perhaps in that $g(e/x)(x) = e$.

[11]More precisely, functions from assignment functions to nominalized functions, but I will generally leave out reference to assignment functions when talking about interpretations in the text.

[12]I will further assume below that definite and indefinite DPs also have quantificational interpretations; I take these to be due to ambiguity in the interpretation of the determiner, i.e. that the articles may also be interpreted as existential quantifiers (the definite carrying an additional uniqueness condition).

Note, however, that necessarily quantificational DPs like *each student* will have only one interpretation–the quantificational one. See McNally 1995a for further justification for these assumptions.

[13]Following Abney 1987, I take NP to be the complement to D. In systems that do not posit DP, what I refer to as NP is equivalent to N′.

[14]I am grateful to Geoff Nunberg for bringing this contrast to my attention.

[15]For now I will consider only the indefinite article.

[16]With other conditions applying, e.g. that the individual is designated as novel to the discourse model.

[17]Which should not be identified with the GB stratum of LF.

[18]Throughout this discussion I will abstract away from tense; therefore, [[*bark*]] will be taken as equivalent to [[*barked*]].

[19]I will ignore the fact that properties such as barking can systematically be construed as generic properties of kinds of things on the basis of generalization from instances of the kinds. See Carlson 1977b.

[20]Note, however, that for Heim a context change potential consists of a domain and a set of sequences, not a set of world-assignment function pairs.

[21]The precise nature of the relation between the appearance of [NEG] and a negative element or DP in an lf will not concern us here, and no attempt will be made to account for sentences containing more than one negative element. See Ladusaw 1992 for further discussion of these issues.

[22]*No dog* may also have a necessarily quantificational interpretation, but that will not concern us here.

[23]Not necessarily exclusively *there*; see Chapter 5.

[24]Though see Heim 1987. I will address her suggestion concerning this fact in Section 6.

[25]Note that whether or not a DP such as *every dog* can be taken to quantify over the appropriate sort of entity is partly a function of the context. That is, if we can construct a context in which it is possible to interpret *every dog* as meaning *every kind of dog*, then it should be possible to use the DP in an existential sentence (see below). See Carlson 1977b, Chapter 6, for discussion of this issue.

[26]Where by "kind noun" I intend nouns like *kind, sort, type, flavor, variety, etc.*

[27]I have not attempted to account for the limited range of nominals that appear in the complement position to *kind [of]*, in particular, singular bare nouns (see Carlson 1977b for examples and discussion), since the peculiarities of this internal argument will not be relevant in what follows.

[28]See e.g. Roberts 1987 for a variety of examples and for discussion of the relation between quantification and discourse anaphora.

[29](213) abstracts away from such well-known exceptions to uniqueness such as *the leg of a table*.

[30]In this sense it closely resembles the characterization of uniqueness proposed in Kadmon 1987.

[31]See Kadmon 1987:293ff. and Roberts 1993 for pertinent discussion of the relation between familiarity and uniqueness.

[32]For the sake of discussion, I assign *that* the same interpretation as *the*.

[33]However, discourse anaphora may be licensed by the nf argument itself, e.g.

(i) There were those kinds of beer at the bar. And we tried them all.

[34]Although technically, on the analysis presented here, the existential predicate takes an entity as its argument (specifically, the entity correlate of a property), the term "property-argument analysis" will serve as a useful way of describing the essence of the proposal.

[35]According to Prince 1992, proper names, but not e.g. pronouns, can identify a *discourse new* referent, viz. one that may be in the common ground of the discourse, but not salient.

[36]The same can be said for a Keenan-style account of the DE (viz. "a DP will be licensed in the existential construction iff its determiner is existential").

[37]The contrast between (235) and (236) does not depend on the simple difference between the determiners *cada un* and *tota*. I have used different determiners here in order to obtain the most natural sounding DPs in each sentence, but both are necessarily quantificational. I am grateful to Josep M. Fontana for discussion of these examples.

[38]Wilkinson 1991 does not explicitly suggest that this equivalence holds for any determiners other than the definites; however, for the sake of argument I will take the proposal to extend to all determiners.

[39]Similar problems arise for this proposal in the other two contexts where it has been claimed that DPs such as *that kind of animal* can have an existential indefinite interpretation, viz. in what could be termed "vanilla" stage-level argument positions (such as in (i), the example is Wilkinson's) and in the scope of an adverb of quantification (as in (ii)):

(i) That kind of book is on the shelf.

(ii) That kind of animal usually eats oats.

Like the DP in (238)a, (i) does not license discourse anaphora to instances of the book (see (iii)), even though its putative coun-

terpart (in (iii)) does:

(iii) #It has a broken spine.

(iv) A book of that kind is on the shelf. It has a broken spine.

Similarly, if the kind DP has an existential indefinite reading, the unavailability of wide scope for that interpretation of *that kind of animal* in (ii) goes unexplained (compare (v), which is ambiguous):

(v) An animal of that kind usually eats oats.

[40]To emphasize this point, she assigns indefinites generalized quantifier-type denotations that are interpreted in situ, rather than raised.

[41]The fragment presented in this chapter could be extended with minor modifications to include inverse linking. For example, Quantifier Raising could be reformulated so that DP-internal quantificational expressions adjoin to DP rather than IP, and so that DPs to which quantifiers have been adjoined obligatorily undergo QR; Quantifier Construal could be reworked to allow determiners in those DP-adjoined expressions to take scope beyond DP (see e.g. Barker 1991 for a similar proposal involving possessive DPs). With these revisions, the lf for e.g. (i) would be as in (ii):

(i) There was a top to every bottle.

(ii) $[_{IP}$ every $[_{DP_{x_{nf}}}$ $[_{DP_{y_u}}$ _ bottle] $[_{DP_{x_{nf}}}$ a top to $y_u]]$ $[_{IP[f]}$ There was $x_{nf}]]$

The only question raised by (ii) concerns the translation of the string *a top to* y_u, which corresponds to a function from entities to nfs. Since the phrase contributes to the restriction on the quantifier and as such must contribute information conjoinable with the formula that is the translation of _ *bottle*, a plausible candidate for its translation is (iii):

(iii) $x_{nf} = \lambda z_u[\mathbf{ent}(\mathbf{top}[\mathbf{to}](z_u))](y_u)$

The translation for the entire sentence appears in (iv):

(iv) $\mathbf{every}(\dagger\mathbf{bottle}(y_u) \wedge x_{nf} = \lambda z_u[\mathbf{ent}(\mathbf{top}[\mathbf{to}](z_u))](y_u), \dagger\mathbf{be}_{\mathbf{exist}}(x_{nf}))$

The interpretation of (iv) is straightforward and the reader can verify that it matches intuition.

[42](248) is not complete in that it does not account for the impossibility of contact clauses in predicational copular clauses, but this does not affect the present point.

[43]Pace the criticisms that have been leveled against this analysis

of the former.

[44]Abstracting away from the fact that if the cargo weighs five tons, by entailment it (that is, some portion of it) also weighs e.g. four tons.

[45]Similarly, if we take *have* to express the possession function from the entity identified by the subject of *have* to the individuals instantiating the post-*have* DP, we can explain the contrast between (i) and (ii) (cf. Carlson 1977a) in the same way as we explain the existential facts in the text:

(i) *a daughter he has

(ii) the daughters he has

[46]This discussion of relativization would have been strengthened by consideration of the additional extraction facts discussed in Postal 1992 and his analysis of them. Unfortunately, I received that paper too late to include examination of its findings.

[47]See Zimmermann 1992, Moltmann 1995 for recent work in this area.

Chapter 4

Adjunct Predicates and the Predicate Restriction

4.1 Introduction

This chapter is concerned with the rest of the semantics of the existential construction. We found motivation in Chapter 2 for assigning the XP to the same syntactic position as a VP-adjunct such as the depictive, rather than treating it as a complement of *be*. We might expect, then, that whatever interpretation rule governs the semantic contribution of such adjuncts will cover the existential's XP as well. Since it has been independently argued (e.g. in Rapoport 1991) that circumstantial and depictive adjuncts manifest the same kind of predicate restriction we have seen in existential sentences, a very attractive consequence of assimilating the XP to such adjuncts is that the existence of the predicate restriction in the existential will follow from its membership in that adjunct class.

However, in order for this account to work, two issues must be addressed. First, since the interpretation of the XP's controller in the existential construction (viz. the postcopular DP) is different than that of the usual depictive controller–it is interpreted as a

nominalized function rather than an ordinary entity–, we have to look carefully for any effects this difference might have and ensure that they are not problematic. Second, Milsark used examples such as (263)a to argue for an independent XP in the existential, but depictive and circumstantial adjuncts cannot have an eventive interpretation, as (263)b,c show; these latter two sentences express impossible states of affairs in which some pig is simultaneously live and roasted:

(263) a. There has been a live pig roasted.

b. We have eaten a live pig roasted.

c. A live pig lay there roasted.

This contrast must be explained, and the eventive interpretation of (263)a must be accounted for.

The rest of this chapter is organized as follows: I begin by presenting a semantics for predicative VP-adjuncts of the sort we have been concerned with. I then extend this analysis to the existential construction. Once it has been shown that the proposed analysis works for adjectival and present participle XPs, I turn to existentials with past participle XPs. I resolve the contrast in (263) by arguing that Milsark incorrectly concluded that *a live pig roasted* must be treated as a DP-XP sequence; I argue instead that it is a single DP.

4.2 Interpreting Depictive Adjuncts

The literature on depictives (inter alia, Halliday 1967, Green 1973, Jackendoff 1990 and Rapoport 1991) is quite consistent in its characterization of the adjunct: the depictive contributes a property that the interpretation of its controller must have while participating in the state of affairs described by the main predicate. That is, the addition of the depictive in (264) contributes the condition that the tea Margaret is drinking must be cold while she is drinking it on the occasion in question:

(264) Margaret is drinking the tea cold.

This condition contrasts with (and in some sense is simpler than) the semantic contribution of other kinds of predicative VP-adjuncts, such as the resultative or the purpose clause.

There are at least two ways one could set up the semantics for the depictive. One way would be to take some notion of state of affairs or event as primitive, redefine predicative expressions to be interpreted as properties of states of affairs (or relations between individuals and states of affairs), and assign the depictive a semantics in which it functions as a secondary predicate on the state of affairs variable which is the target of the main predication:

(265) $\exists e[\mathbf{drink}(\mathbf{m}, \mathbf{t}, e) \wedge \mathbf{cold}(\mathbf{t}, e)]$

Jackendoff's 1990 treatment of depictives is in the spirit of this approach.

A slightly different position would be to claim that the depictive constrains the *spatio-temporal parameters* over which the state of affairs associated with main predicate holds. This latter position would keep the tea drinking event and the tea being cold (in (264)) logically independent; however, since the same tea must simultaneously have the property of being in a cold state and being drunk, the net result is quite similar to (265). Brief remarks in Gawron 1986a suggest this view.[1]

I will adopt the latter of these approaches because thinking about states of affairs and property ascription relations in terms of the intervals over which they hold will be more helpful when we examine the predicate restriction associated with the depictive. Consequently, we need to add a set of intervals, T and a set of locations L, along with the partial orders $\leq_T$ and $\leq_L$ to our model. The partial order is taken to give each of these domains the structure of a complete join semilattice (see e.g. Link 1987, Lasersohn 1988 for similar proposals). We will also want to adopt a standard overlap relation over objects in each of these domains, as in (266), defined for elements of L ($\wedge$ stands here for the meet relation):[2]

(266) For any $l, l' \in L$, $l \circ l'$ iff there is some l'' such that $l \wedge l' = l''$

The overlap definition for intervals is exactly analogous.

We can now augment our system to include the temporal interval and location over which properties hold of entities. These

intervals will be the values of the functions *int* and *loc*, respectively. *Int* ("hold time") and *loc* ("location") are defined on ordered pairs of 1-place propositional functions and entities, that is, they are functions of type $[[E \rightarrow E] \rightarrow [E \rightarrow T]]$ and $[[E \rightarrow E] \rightarrow [E \rightarrow L]]$, respectively.:[3]

A word on how *int* and *loc* should be understood: Although I will not modify the system adopted in the previous chapter beyond the addition of these two functions, the notion of a delimitable state of affairs is obviously implicit in the thinking behind these functions, and they should return values that match one's intuitions about what constitutes the relevant boundaries for the hold time and location of such states of affairs. For instance, *int* should be understood as picking out a maximal interval for atelic states of affairs, and a minimal interval for telic states of affairs: if Martha runs for a total of 20 minutes, it is necessarily true that she runs for 10 minutes, but we want *int* to return the value 20 minutes for $(\mathbf{run}, \mathbf{m})$. If she runs from her house to my house in 20 minutes, it is also true that she does so in 30 minutes; however, the relevant interval is again the former, and not the latter.

The value for *loc* should depend on similar criteria: we want its value to be no bigger or smaller than necessary. For instance, the location of Martha's running from her house to my house should include a region of space large enough to include her house, my house, and the path between–no more, no less. See Lasersohn 1988:100ff. for related comments.

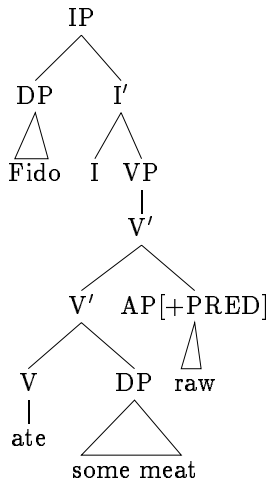
4.2.1 The Adjunct Rule

With these modifications, we can now propose a depictive rule and incorporate it into our semantics. The sentence in (267) will illustrate; I will consider only its object-controlled reading:

(267) Fido ate the meat raw.

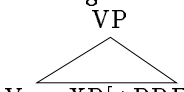
(267) has the S-structure in (268), where [+PRED] indicates a predicative XP:

(268)



The interpretation of this structure requires the designation of a controller for the adjunct predicate; Williams 1980 shows that the requisite controller is what can for present purposes be referred to as the "theme" argument of the main predicate.[4] There is no controlled PRO in (268); I will take the control relation to be represented in the lf of a sentence via coindexation of the adjunct with the designated controller, according to the following rule:[5]

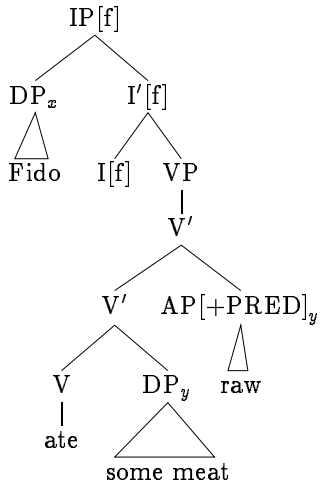
(269) Controller-Controllee Coindexation: If XP[+PRED] in the configuration:



is not an argument of V, then label XP[+PRED] with the index of the theme argument of [[V]].

This rule, combined with the other lf-construction rules from Chapter 3, yields the lf in (270):

(270)



We need to augment our interpretation rules from the previous chapter to allow for the incorporation of the information added by the adjunct. I will use the following:

(271) Adjunct Rule: $[\![[\mathrm{V}'_1\ \mathrm{XP}[+\mathrm{PRED}]_{x_i}]_{\mathrm{V}'_2}]\!]$ is a function f of the same sort as $[\![\mathrm{V}'_1]\!]$, such that for all $y \in ext_{<w,t,l>}([\![\mathrm{V}'_1]\!]), y \in ext_{<w,t,l>}(f)$ iff $int([\![\mathrm{V}'_1]\!], y) \leq_T int([\![\mathrm{XP}[+\mathrm{PRED}]]\!], x_i)$ and there is some l such that $loc([\![\mathrm{V}'_1]\!], y) \wedge loc([\![\mathrm{XP}[+\mathrm{PRED}]]\!], x_i) = l$.

The rule in (271) treats the predicative VP-adjunct essentially as a function from properties to properties that serves to constrain the interval over which the property identified by the main predicate holds. It further requires that there be some overlap between the spatial regions in which the main and adjunct properties hold.

As an example, consider (270). $[\![ate]\!]$ (I abstract away from tense) will combine with $[\![the\ meat]\!]$, and the result is a 1-place propositional function whose extension at some index is a set of entities that ate the meat. The combination of this propositional function with the function identified by the adjunct yields a new 1-place propositional function $[\![ate\ some\ meat\ raw]\!]$, whose extension will be a subset of the extension of $[\![ate\ some\ meat]\!]$: the subset of meat-eaters that ate some meat in question when it was raw. If the only meat Fido ate was cooked, Fido will not be

in the extension of *ate some meat raw*, since, for the relevant choice of meat, $int([\![ate\ some\ meat]\!], [\![Fido]\!])$ is not a subinterval of $int([\![raw]\!], [\![some\ meat]\!])$.

What will the values for $int(f, y)$ and $loc(f, y)$ be for a complex propositional function f formed via the Adjunct Rule? Given what the rule says, $int(f, y)$ will never be larger than the interval over which the ascription relation holds between the adjunct and its controller, and it can conceivably be less than that interval: The meat Fido ate could have been raw long before he ate it (and, should any of it remain when Fido is done, it will surely still be raw). Consequently, it is reasonable to suppose that $int(f, y)$ will be the meet of $int([\![\mathrm{V}']\!], y)$ and the interval $[\![\mathrm{XP}[+\mathrm{PRED}]]\!]$ holds of its controller.

Things will be slightly different for $loc(f, y)$ because the Adjunct Rule places a weaker condition on spatial regions,[6] requiring that merely an overlap relation, rather than an inclusion relation, hold between the location associated with the main property ascription and that associated with the adjunct ascription. However, we want to preserve the intuition that the location associated with the complex property ascription should be no larger than necessary. Thus, we may take $loc(f, y)$ to be the join of $loc([\![\mathrm{V}']\!], y)$ and the location over which $[\![\mathrm{XP}[+\mathrm{PRED}]]\!]$ holds of its controller.

This concludes the exposition of the basic depictive Adjunct Rule. I now turn to the issue of the individual/stage sensitivity of the adjunct.

4.2.2 Individual/Stage Sensitivity

Both subject- and object/theme-controlled VP-adjuncts appear to manifest a sensitivity to individual-level predicates quite similar to that found in the existential construction. The examples in (272) and (273) are anomalous:

(272) a. *Margaret is drinking her tea green.

b. *Sue played the piano a grand.

c. *Fido is eating a shoe leather.

(273) a. *Jay built the house naïve.

b. *Kent was cooking dinner a student of Hegel.

c. *Mary was flying the plane altruistic.

Rapoport's 1991 analysis of this contrast builds on the assumption that individual- and stage-level predicates differ in that the latter, but not the former, have an event argument in their semantic representation.[7] She then adopts the licensing principle in (274):

(274) Licensing Principle (Rapoport 1991:170): Every phrase in a syntactic structure must be licensed through the direct linking of a position in its theta-structure [= argument structure + event structure, LMcN.] to a position in the theta-structure of the head of its clause, within the government domain of that head.

From this principle it follows that only the combination of a stage-level main predicate with a stage-level depictive predicate will be licensed: the licensing of the adjunct predicate depends on its having a position in its event structure that can link to some position in the main predicate's event structure; and that main predicate must in turn have a position to which the adjunct predicate can link an argument. Rapoport proposes that an event argument is the necessary mediator of this linking: without an event argument in both the main and adjunct predicates' theta-structures, the appropriate linking will not be possible.

While the intuition behind this proposal is one I share, its specific formulation can be improved upon once we take a closer look at the facts. Rapoport takes the prohibition on individual-level adjunct predicates to be absolute. However, it is not. First, a typically individual-level main predicate can sometimes co-occur with a stage-level adjunct predicate:

(275) a. Sam disliked Paul angry.

b. Dan never believed Mary drunk.

On the intended readings, Sam disliked Paul when Paul was angry (either on a particular occasion, or in general); Dan never believed Mary when she was drunk. Observe that these sentences are interpreted in such a way that the main predicate holds of its subject

argument only during the time when the adjunct predicate holds of the object argument. In effect, the presence of a stage-level adjunct induces "stage-level-like" behavior in the main predicate.

Second, individual-level predicates do show up as controlled adjuncts under certain circumstances. Subject-controlled individual-level predicates of various sorts co-occur principally (though not exclusively) with main predicates associated with states of affairs classifiable as achievements (i.e. telic and punctual; Dowty 1979):[8]

(276) a. Yesterday, Matt went to work nihilistic; today, he is a changed person.

b. Today, Joe is sitting in church a convert to Catholicism.

c. Martha went to Europe naïve and excited and came back a jaded pseudo-intellectual.

For reasons I do not understand, similar sentences with non-subject controllers sound much less natural:

(277) a. ?Five years ago they came upon Fido scrawny and ill-tempered, but they quickly turned him into a prize-winning show dog.

b. ?We got to know Max young and naïve, but ended our friendship once he became jaded and cynical.

The issue of available controllers is orthogonal to the present point; only the following two observations are relevant. First, the adjuncts in these sentences make the same kind of semantic contribution as do the other adjuncts we have seen above: it is entailed that the controller have the property identified by the adjunct while participating in the state of affairs associated with the main predicate. Second, in addition to this simultaneity, these sentences strongly implicate that the controller either has undergone a change of character shortly before the hold time of the main ascription begins, or is about to undergo such a change soon after the hold time culminates.

Observe further that individual-level predicates are never modified by individual level predicative adjuncts:

(278) a. *Everyone admired the rescuers courageous.

b. *Felix knows methods effective.

When individual-level secondary predicates appear in VP with individual-level main predicates (as in (279)), they can do so only as (parts of) complements to those predicates, as can be seen from at least two facts.

(279) a. Sara believes Ann sincere.

b. Betty doesn't like Fred so naïve.

First, subject control in the examples in (279) is absolutely impossible; object control is obligatory. Since, this is exactly the opposite of what we just saw above, positing adjuncthood in (279) would render such examples exceptions to the rule that if anything in a given sentence can be an adjunct predicate controller, it is the subject. Second, the main predicates of the acceptable examples in (279) differ in meaning depending on the presence vs. absence of the secondary predicate, as can be seen by considering certain entailments of these sentences. For example, (279)a does not entail that Sara believes Ann; rather, it means something paraphrasable as "She believes that Ann is sincere." Similarly, (279)b doesn't entail that Betty doesn't like Fred (though in fact she may not like him)–its truth only depends on her not liking a character trait of his. Recall that adjuncts, whether individual- or stage-level, do not affect the interpretation of the main predicate in this way: (276)a, for example, still entails that Max went to work.

Rapoport's analysis could be augmented to account for the first kind of exception to her generalization, viz. the stage-level behavior of individual-level main predicates, by positing a second, event argument-containing, lexical entry for each of those predicates; however, the second sort of exception is a real problem. The adjunct predicates in (276) do not have a stage-level flavor, so positing an event argument in their theta-structure fails to preserve the standard intuition about the information that the event argument is supposed to encode; moreover, we are left with no insight into the implicature associated with those examples.

Clearly, the way we choose to characterize the individual/stage-level distinction is the crucial ingredient in a successful account of

these exceptions. I will draw on the proposal in Condoravdi 1992a that the distinction rides on the presence vs. absence of an inference of temporal persistence both into the past and into the future. Individual-level properties carry an inference that they hold continuously of the entities to which they are ascribed (and generally over some extended period of time), unless information is provided to defeat that inference; that is, $int(P, x)$, where P is an individual-level property, will be assumed to be unbounded. Stage-level properties carry no such inference. For example, if someone is a child or is naïve, it is a fact about childhood and naïveté that that person cannot alternately have and not have the property of being a child or naïve.[9]

What about the location (*loc*) value for individual- and stage-level predicates? Intuitively, an individual-level predicate holds of that individual wherever s/he happens to be: If Mother Teresa is altruistic, she is going to have that property whether she is in Calcutta or California. In this sense, any location external to the individual is irrelevant, which is surely the source of the frequent claim (e.g. Carlson 1977b, Gawron 1986b, Kratzer 1989) that individual-level predicates are "unlocated." But arguably certain predicates commonly classified as stage-level can have this characteristic as well. If I get sick with the flu, I can carry the flu around with me for quite awhile. However, the difference between a stage-level property like sickness and an individual-level property like altruism is that it is not necessary that a property like sickness "follow around" the individual to whom it is ascribed, precisely because sickness is not a property guaranteed to hold of me or anyone else for any length of time. In contrast, it is inconsistent with the inference of temporal persistence carried by individual-level predicates that they *not* "follow around" their bearers. Of course, certain stage-level predicates are necessarily fixed in location: If I am sitting at the computer, as soon as I leave I'm no longer going to have the property of sitting at the computer.

Consequently, I suggest the following: For certain predicates P^1 (all of which will come from the standard stage-level category), $loc(P^1, x)$ will be a simple value from L, the set of locations. However, for the remainder of the stage-level and all of the individual-level predicates, $loc(P^1, x)$ will return another function, call it *x-loc*, whose value when applied to an entity-interval pair gives the

location of that entity at that interval:

(280) $x\text{-}loc(x,t) = l$

x-loc will help capture the fact that some properties "follow around" their bearers, without making it impossible to assign, at any given time, some real region of space at which an individual has a property such as sickness or altruism. Note that it is indeed possible to assign a real spatial parameter to an individual-level property ascription at some interval: It is not necessarily untrue or anomalous to say that Mother Teresa is altruistic in Calcutta–it's just rather strange, altruism being the kind of property one is likely to have irrespective of where one is. But generally, if the value of the location function associated with the individual-level property ascription is itself a function (viz. *x-loc*) whose value depends on a choice of temporal interval, while ascription of the property generally does not depend on or make reference to any particular choice of interval, we get the effect that the property holds of its bearer at no location in particular or, more precisely, wherever its bearer happens to be at the time.

The power to assign a specific location to an individual-level property ascription at some interval (in terms of *x-loc*) is crucial in order for those predicates to be licensed by the Adjunct Rule, since the rule demands that there be some spatial overlap between the *loc* value of the main predicate-argument pair and that of the secondary predicate-argument pair (an example will be discussed shortly).

This view of the individual/stage distinction is slightly different from the recently prevalent view that the distinction rides on the absence vs. presence of an event or spatio-temporal argument in the argument structure or semantic representation of the predicate (see Kratzer 1989, Diesing 1992, Parsons 1990, inter alia). The two views differ principally in that the approach advocated here attributes a spatio-temporal parameter to all predicates, individual-level and stage-level alike; however, for most purposes, the spatial and temporal parameters associated with individual-level predicates is simply irrelevant. In contrast, the event-argument view holds that individual-level properties are essentially unlocated in space-time and that, should spatio-temporal parameters be assigned to an individual-level property, it will "turn into" a stage-

level property.

There are notable advantages to appealing to a temporal persistence inference rather than the presence or absence of an event argument.[10] First, it obviates the need to appeal to lexical ambiguity in order to account for the fact that sometimes individual-level predicates behave as if they were stage-level; moreover, it makes predictions about the contexts in which we are likely to find this behavior, and which predicates will allow it. The lexical ambiguity analysis of stage-individual alternations makes no such predictions without ancillary assumptions. For example, locative predicates such as *in the room* are paradigm examples of stage-level predicates. Like stage-level predicates, locatives license existential readings for bare plural subjects in the copular construction (Carlson 1977a), and they license universal quantification in *when*-clauses (Kratzer 1989):

(281) a. People were in the room.

b. When Mark is in the room, he makes a lot of noise.

However, there is a class of nouns for which locative predicates behave as if they were individual-level. These are nouns such as *dent, hole, space*, which are interpreted as relations between some entity and a location (Kuno 1972, Kimball 1973, McNally 1992a). These license neither existential readings for bare plurals nor sensibly interpretable universal quantification in a *when* clause:

(282) a. #Holes were in the wall.

b. #When the hole is in the wall, it is easy to look through.

I have suggested elsewhere (McNally 1992a) that these facts are explainable if locative predicates express individual-level properties for the entities identified by this class of nouns. Holes, dents, and spaces are special in that they are defined by their location: A dent that is in my car door cannot be moved to the rear fender. This kind of relativization of the notion "individual-level" is understandable, and indeed expected, when the notion is characterized in terms of a temporal persistence inference. In contrast, taking the individual/stage distinction to consist in the presence vs. absence of an event or spatio-temporal variable leaves us with the

task of explaining why a non-specific indefinite DP such as *dents* could not be the argument of the stage-level version of *in the car door*. Though one could develop such an explanation while maintaining the ambiguity, it is difficult to see what the appeal to an event argument contrast really buys when it is possible to account for facts such as these without it.

Another advantage to characterizing the individual/stage distinction in terms of a temporal persistence inference is the insight it offers into the exceptional licensing of individual-level predicative adjuncts introduced in (276) and their prohibition in examples like (278). If those individual-level predicates lacking an inherent temporal dimension license an inference of unbounded temporal persistence both back into the past and forward into the future, they will not be very useful as temporal modifiers, that is, as restrictors of the interval over which the principal property ascription associated with the clause holds.

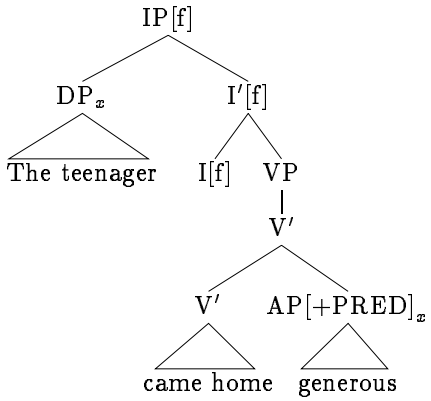
However, we predict that if it is possible to establish such a relevant connection, the predicate should be a licit adjunct. This is what happens in the examples in (276). I mentioned above that sentences such as these (another example is provided in (283)) carry the implicature either that the adjunct property has begun to hold of the referent of its controller within some relevant interval just prior to the hold time of the principal ascription (which is what happens in (283)), or else that it will cease to hold shortly thereafter:

(283) After a year of working with Mother Teresa, the teenager came home generous and altruistic.

The relevant connection is established in this case by defeating in one direction the inference of temporal persistence for the individual-level property, rendering the hold-time of the property bounded at one end (though leaving it potentially unbounded at the other): we infer that the teenager was neither generous nor altruistic before his experience with Mother Teresa. Observe that this really is just an inference: nothing in (283) entails that there is any particular relation between the coming home and the onset of generosity and altruism, other than that the interval over which the coming home takes place must be contained within the interval that the generosity and altruism hold of the teenager. Nor is there any causal

connection between the two: the most likely cause of the onset of generosity and altruism is not the coming home, but rather some part of the experience for which the coming home marks an end point. That is, the interpretation for the main clause in (283) is just like what we saw for the example worked through in the previous section. Consider its lf, in (284) (I leave out the coordination for simplicity):

(284)



According to the Adjunct Rule, the ascription of the property identified by *came home generous* to the entity identified by *the teenager* will be subject to the following condition:[11]

(285) $[\![$*the teenager*$]\!] \in$ *ext*($[\![$*came home generous*$]\!]$ iff *int*($[\![$*came home*$]\!]$,$[\![$*the teenager*$]\!]$) $\leq_T$ *int*($[\![$*generous*$]\!]$,$[\![$*the teenager*$]\!]$) and there is some l such that $l =$ *loc*($[\![$*came home*$]\!]$, $[\![$*the teenager*$]\!]$) $\wedge$ *loc*($[\![$*generous*$]\!]$, $[\![$*the teenager*$]\!]$)

In order to determine whether the second clause of the biconditional in (285) is satisfied, a real-space value for the *loc* function on $[\![$*generous*$]\!]$ and $[\![$*the teenager*$]\!]$) is going to have to be fixed via the function *x-loc*; consequently, we have to choose an appropriate interval as input. It is reasonable to suppose that this interval is going to be the interval during which the teenager came home. The value that will become the value for *loc*($[\![$*generous*$]\!]$,$[\![$*the teenager*$]\!]$) at the relevant interval will be *x-loc*(*int*($[\![$*came home*$]\!]$, $[\![$*the teenager*$]\!]$), $[\![$*the teenager*$]\!]$), which will be a subpart of the interval during which

the teenager came home, and the condition that there be some overlap between the location parameter of the main and adjunct predications will be satisfied.

So the interpretation for (283) is just the same as for a sentence like *Fido ate some meat raw* (in fact, *raw* is even the kind of adjective whose location parameter should have been treated as we have treated that of *generous* here). The only difference is that the inference of temporal persistence associated with the individual-level predicate gives rise to certain implicatures in order to make sensible the use of that predicate as a temporal modifier. In the case of (283), the fact that the teenager's coming home in all likelihood marks the endpoint of the experience that induces the new personality traits renders it a natural and useful a reference point for the onset of the hold-time of these traits, because the coming home presumably takes place at a relevantly minimal interval after that onset; and we therefore infer that the teenager's coming home marks a point after which we may consider him to be generous and altruistic.

This pragmatic sort of explanation could extend to the failure of individual-level secondary predicates to modify individual-level main predicates, observed in (278). Here we are faced with the task of using one temporally persistent property ascription to restrict the interval over which another holds. But if both ascriptions are taken to persist indefinitely into the past and future, there would not appear to be any useful sense in which the ascription relation associated with the adjunct could provide a temporal restriction on that associated with the main predicate, nor will the property associated with the main predicate have the aspectual characteristics that facilitated the interpretation of (283).

Finally, an individual/stage distinction grounded in the presence vs. absence of temporal persistence accounts naturally for the coercion of certain individual-level main predicates into stage-level-like behavior. If the interval over which the adjunct predicate holds of its controller determines the bounds within which the principal property ascription must hold, the boundedness of the interval associated with the adjunct predication will obviously defeat any inference of temporal persistence associated with the property denoted by the main predicate.

With an interpretation rule for VPs containing depictive adjuncts and a more fully-developed notion of the individual/stage contrast, we can now return to the existential construction. Our first task is to work through any consequences the special semantic properties of the postcopular DP might have for the depictive adjunct interpretation rule. We will then examine in detail the interpretation of "eventive" existentials with past participle XPs.

4.3 Extending the Analysis

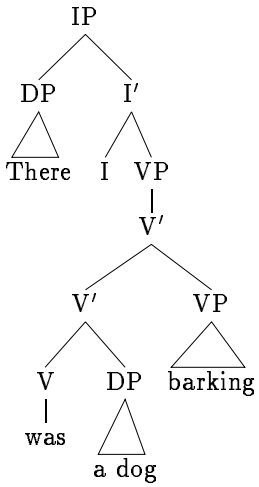
4.3.1 Nominalized Functions as Controllers

Consider the following existential with a final predicative phrase:

(286) There was a dog barking.

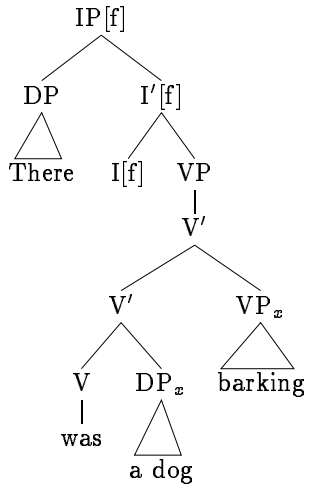
Based on the discussion in Chapter 2, this sentence has the D-Structure in (286):

(287)



Applying the Controller-Controllee Coindexation rule in (269) along with the other relevant lf construction rules, we derive (288):

(288)



Notice that the coindexation rule has assigned the index of postcopular DP to the adjunct. Recall from Chapter 3 that, as a complement to the existential be_{exist}, this index corresponds to a nominalized function, not an individual in U. However, the correct interpretation of this lf depends on the adjunct predicate holding of the (singular or plural) entity instantiated by the existential. Consequently, we need to be careful about how the effect of control is worked out.

In addition, we must work around the fact that, even though we have a VP-internal controller, that controller is the argument of a monovalent predicate on the analysis in Chapter 3. Thus, if we keep our adjunct rule the same, the interpretation of the XP will have to combine with that of be_{exist} before the latter combines with the interpretation of the postcopular DP. Given the syntactic structure we have adopted, this order of composition will not be strictly compositional. There are a variety of ways to work around this problem. For example, we could revise the adjunct rule, allowing the adjunct to combine with fully saturated properties (i.e. objects of sort e that become information units in combination with the † predicate) in addition to unsaturated properties. Another option would be to recharacterize be_{exist} as a bivalent predicate whose interpretation is stipulated to be identical to that we have been assuming (cf. Dowty 1985). However, since it is not crucial for

our immediate purposes which of these solutions (or any other) is adopted, I will simply ignore this problem and assume that the adjunct predicate can combine with verb before the verb combines with the its DP complement, as doing so will not require us to adjust any existing rules or definitions.

According to the Adjunct Rule, the result of combining $[\![be_{exist}]\!]$ with the interpretation of the XP *barking* is going to be a 1-place propositional function whose extension is a set of *nf*s. An nf α will be in this extension iff: (1) An individual $\beta \in U$ that is in $ext_{<w,t,l>}(\alpha)$ is in $ext_{<w,t,l>}([\![barking]\!])$; and (2) $int([\![be_{exist}]\!],\alpha)$ $\leq_T int([\![barking]\!],\beta)$ and there is an l such that $l = loc([\![be_{exist}]\!],\alpha)$ $\wedge loc([\![barking]\!],\beta)$.[12]

We must first calculate *int* and *loc* for bare existential sentences. Consider the sentences in (289):

(289) a. There is exactly one even prime.

b. There was a woman.

If nothing in the context explicitly precludes it, such sentences are interpreted as holding indefinitely, within the limits pragmatically admitted by the nature of the individual instantiating the post-copular DP. For example, $int([\![be_{exist}]\!], [\![exactly\ one\ even\ prime]\!])$ will be a maximally large interval; in contrast, the interval over which (289)b holds will not be infinite, but in the absence of other information will be assumed to hold over the natural lifespan of a woman. To the degree that the interval is taken to be persistent, the existential predicate is reminiscent of individual-level predicates as discussed in Section 2.2.2. $loc([\![be_{exist}]\!]), nf)$, for any $nf \in NF$, is simply the space occupied by the instantiation of the individual that supports the existential assertion.

In contrast, a existential sentence with a final predicative phrase like *There was a dog barking in the yard* describes a state of affairs that most likely holds for a delimited period of time, rather than indefinitely, and, depending on the semantics of the final predicative phrase, it might well describe one whose location is larger than the individual supporting the truth of the main predication. That is, it appears that the final predicative phrase or other information in the context is what provides interesting values for the temporal and spatial parameters of the states of affairs described by an existential sentence.

Now, we must ensure that the individual that is instantiated in order to meet the satisfaction conditions associated with be_{exist} is the same individual that has the property contributed by the XP. For instance, consider a sentence like (290):

(290) There was exactly one dog barking in the yard.

What prevents this sentence being satisfied by a situation in which Fido is instantiated as the only dog barking in one part of the yard; and in which, simultaneously, Fifi is the only dog instantiated in a nearby part of the yard (perhaps doing something else)?

The answer lies in the condition that there must be some overlap in the location values for the main and adjunct predications, coupled with the general principle we have adopted that the spatial parameter associated with any given ascription should be no larger than necessary. $[\![be_{exist}]\!](nf)$, for any $nf \in NF$, will always hold within the location associated with the adjunct predication (here, $loc([\![barking]\!], u)$, $u \in ext_{<w,t,l>}([\![exactly\ one\ dog]\!])$), since whatever individual guarantees the satisfaction of the adjunct predication will automatically guarantee the satisfaction of the existential predication. Moreover, the minimal region in which the location values for the main and adjunct predications overlap is one in which the individual supporting the existential assertion is a participant in the adjunct state of affairs. The exactly one dog we have barking in the yard (290) must therefore be the exactly one dog that supports the bare existential assertion.

4.3.2 The Predicate Restriction Revisited

It is now time to see how the predicate restriction in the existential construction follows from what we have laid out. Recall from Section 2.2 that individual-level predicates are acceptable predicative adjuncts when certain pragmatic conditions are met, for example, if the main predicate contributes information useful in demarcating a boundary at which the individual-level property begins or ceases to hold. Consequently, if the analysis advocated here is correct, there must be no such pragmatically determined connection available between the hold time of the individual-level property ascription and that associated with the existential property ascription.

One case in which no such connection could be established was when both the main and adjunct predicates were inherently associated with temporally unbounded intervals, as in (278)a, repeated here in (291):

(291) *Everyone admired the rescuers courageous.

We may therefore hypothesize that the prohibition on individual-level predicates in the case of the existential construction arises for the same reason: Bare DP existentials express property ascriptions that are associated with an inference of temporal persistence. One need only compare sentences such as the following to see that this is so:

(292) a. There are women.

b. There are women cycling.

The effect *cycling* has on (292)a is just like the effect we found stage-level adjunct predicates to have on individual-level main predicates in Section 2.2. (292), in the absence of any contextualization, describes a state of affairs that holds as long as instantiations of $[\![women]\!]$ exist; in contrast, (292)b describes a state of affairs circumscribed by the temporal and spatial parameters associated with the women's cycling. In this sense, the adjunct induces "stage-level-like" behavior for the existential predicate.[13]

This concludes the extension of the Adjunct Rule to the existential construction, and our account of the predicate restriction. The final task is to construct an interpretation for eventive existentials.

4.4 Eventive Existentials

4.4.1 The Problem

As mentioned in the introduction to this chapter, one very obvious difference between the XP in existential sentences and the depictive adjuncts we have looked at involves the interpretation of past participles. This difference is exemplified in the contrast between (293)a and b: A past participle in an existential sentence licenses

an "eventive" interpretation ((293)a), whereas the same participle in a standard depictive context licenses only a result interpretation, as evidenced by the anomaly of (293)b:

(293) a. There has been a live pig roasted.

b. #We have eaten a live pig roasted.

Examples such as (293)a are part of the traditional motivation for relating existentials and passives derivationally, since existentials usually have synonymous passive counterparts (cf. *A live pig has been roasted*). However, I will argue that, to the extent that such a relation entails that the XP is the main predicate of the sentence (as opposed to a bare predicative complement or adjunct predicate), it should not be maintained. More recently, Hannay 1985 has used such examples to argue that the object of assertion of an existential utterance is not typically an individual but rather a state of affairs.

While the intuition that (293)a is about a roasting event rather than about a pig is quite strong, such an analysis has to confront the fact that the XP cannot be analyzed as a complement to be_{exist}. Observe that extraction of a measure phrase, shown in Chapter 2 to be acceptable out of complements but not adjuncts, is impossible out of the past participle in the existential construction (compare (294)b):

(294) a. Ann wanted the car driven 1000 miles.

b. How many miles did Ann want the car driven?

c. There was a new plane flown 10000 miles last week.

d. *How many miles was there a new plane flown last week?

An additional problem is that an analysis that takes (293)a to assert the existence of a roasting state of affairs raises questions about why the definiteness restriction manifests itself in such cases, since such an analysis requires the postcopular DP to combine semantically with the XP before it combines with be_{exist}, and the DP should therefore not be subject to influence by that verb (see the

discussion in Chapter 1, Section 3.1). Thus, if we can avoid treating the XP as a complement while still accounting for the facts, we will have a more successful analysis than we would have otherwise, since on any other analysis the failure of extraction in (294)d remains unexplained, and the DE is not easily accounted for.

The solution I defend here is to treat the postcopular string in examples like (293)a and (294)c as a DP, rather than a DP-XP string–just as Williams 1984 suggested. This move is perhaps surprising, given that (293)a was a central part of Milsark's argument for the independence of the XP. Nonetheless, it is less problematic than an analysis taking the XP to be either a complement or an adjunct to be_{exist}, and it accounts for the failure of extraction in examples like (294)d as cases of failed extraction from DP.

I begin this section begins by showing why an adjunct analysis of the past participle in (293)a is unlikely. I then turn to the evidence against treating examples such as (293)a as some mutated form of the passive. Finally, I suggest how an analysis that takes the postcopular material in (293)a to be a DP can account for the facts.

4.4.2 Eventive Participles Are Not Adjuncts

The adjuncts we have seen so far have been mainly adjectives and present participles, including subject- and object-controlled present participles which are identifiably VP (in virtue of taking a direct DP complement):

(295) a. Harry ran into her lecturing the students.

b. We recognized him wearing those sunglasses.

Let me justify briefly the claim that the adjunct XP can be VP, by showing that VP secondary predicates in (295) are adjuncts.

The fact that the postverbal DP is a pronoun rules out the possibility that the present participle is a postnominal modifier in these examples, as does the unacceptability of it-clefting:

(296) a. *It was Mary lecturing the students (that) Harry ran into.

b. It was Mary Harry ran into.

c. *It was him wearing those sunglasses (that) we recognized.

d. It was him we recognized.

To confirm that these have a complement-adjunct structure rather than a small clause complement structure, note that expletive-subject present participle VPs are unacceptable substituted into these sentences (compare (297)c):

(297) a. *Harry ran into it raining.

b. *We recognized it raining.

c. We noticed it raining.

The unacceptability of the expletive subject is predicted if the verb requires a contentful DP-type complement.

Further evidence for the adjuncthood of these VPs comes from the fact that, as the reader may verify, their omission does not significantly change the verb's interpretation or render the sentence ungrammatical, as it does with a XP complement-taking verb such as *consider*. And a final piece of support for treating them as adjuncts is that it is impossible to extract a selected adverbial out of them:

(298) a. We encountered him behaving quite badly.

b. *How badly did you encounter him behaving?

c. We recognized her behaving badly.

d. *How badly did you recognize her behaving?

Now, though we have just seen that present participle-headed VPs are acceptable predicative adjuncts, past participle-headed VPs are not:

(299) a. *We recognized Harry served a steak.

b. We recognized Harry being served a steak.

c. We recognized Harry after he had been served a steak.

d. *They ran into Sally sold a new car.

e. *They brought the baby to the party given a bath.

The problem in (299)a is clearly linguistic and not conceptual: Two sorts of states of affairs the sentence might be trying to characterize are described felicitously in (299)b and c. There must therefore be a clash between the semantics of the past participle and the linguistic conditions governing the possible relations that may obtain between the intervals over which the main and adjunct property ascription relations hold.

We can begin to understand this clash by considering the fact that past participles entail culmination (to borrow Parsons' term), while present participles do not. That is, the participial morphology on *served a steak* entails that the interval during which Harry was served a steak ends prior to the relevant reference time, while the present participle counterpart *being served a steak*, carries no entailment of culmination–$int(\llbracket serve\ a\ steak \rrbracket, \llbracket Harry \rrbracket)$ may overlap with the relevant reference time. If the reference time to which the past participle morphology is sensitive is the onset of the interval of the principal property ascription, then the clash becomes apparent: the use of the past participle in (299)a entails that the interval during which Harry was served a steak precedes the interval during which we ran into him. This conflicts with the requirements of the Adjunct Rule, and the result is unacceptability.

We might wonder whether an individual can have the property of *having had* a property. That is, can Harry have the property associated with $\llbracket serve\ a\ steak \rrbracket$ once the steak has been served to him, or alternatively, is there a property corresponding to the denotation of *having been served a steak*? McCoard 1978 claims not; Parsons 1990 disagrees, but suggests that such a property is a strange one to ascribe to the extent that it must a property that an individual necessarily has forever. Some support for McCoard's view comes from the unacceptability of subject- or object-controlled *ing*-form

perfect participle VP-adjuncts, whether active or passive:[14]

(300) a. *We recognized Harry having been served a steak.

b. *Nobody encountered the VIP having properly dressed.

c. (cf. Nobody encountered the VIP properly dressed.)

The problem, then, is not merely the morphosyntactic form of the VP, but its temporal and aspectual properties: though we can felicitously use the result state of dressing as an adjunct property (as in (300)c), we cannot so use the putative property of having dressed.

We therefore should not be able to maintain the position that past participial phrases in existential sentences are predicative adjuncts without predicting that a similar kind of clash should emerge in sentences such as *There was a live pig roasted.* But if we give up the connection between predicative adjuncts and the final predicative phrase in existential sentences, we lose any explanation of the predicate restriction. Consequently, rather than pursue this avenue, I will take the position that past participle VPs that give rise to eventive readings in the existential construction are not adjuncts of the kind we have been looking at.

4.4.3 Why These Existentials Are Not Passives

Let us now consider why these participial phrases are not directly related to passives. Contrary to what one might predict given the view that passives and existentials are structurally related, adverbs that can appear post-participially in ordinary passives are downgraded for many speakers, and ungrammatical for some, in existential sentences:

(301) a. A child who lives down the street was taunted cruelly by that bully.

b. Last night a man was beaten mercilessly by the police.

c. A proposal to encourage development has been opposed vociferously by the city council.

(302) a. %There was a child who lives down the street taunted cruelly by that bully.

b. %Last night there was a man who was carrying a knife beaten mercilessly by the police.

c. %There has been a proposal to encourage development opposed vociferously by the city council.

Moreover, on the original "*There*-insertion" analysis and its descendants, one would expect any past participle to be licensed in the construction. However, this does not appear to be the case. The native speakers I consulted found past participles of dative-shifted verbs in the XP position ungrammatical, or very awkward at best:

(303) a. *There has just been a student who likes syntax [assigned that article for class presentation].

b. *Recently there have been two professors who study muons [awarded a Nobel prize in Physics].

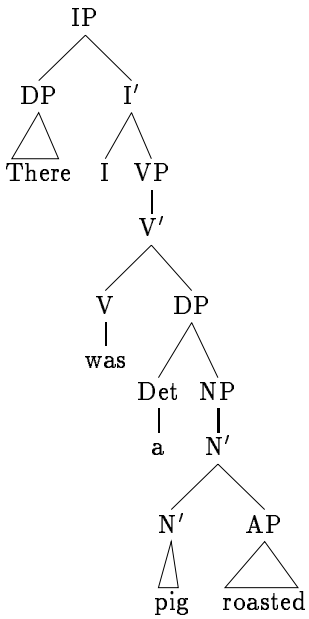
c. *Just now there was someone who represents Century 21 [shown the new house].

This array of facts is unexpected if the existential and passive constructions are directly related, e.g. by derivation. Consequently, I reject such a relationship here.

4.4.4 A Proposal

Having found reasons to reject analyses on which an eventive past participle VP is a complement or part of a complement to existential *be*, on which it is an adjunct, and on which it is an analog of the passive, I now want to explore the consequences of treating it as an adjunct to the postcopular nominal, as in (304):

(304)



Note that I am *not* claiming that all existentials have this structure; my claim is simply that eventive existentials are associated with this structure.

The immediate appeal of the DP analysis is that it dissociates the reference point for the culmination of hold time of the ascription associated with the past participle from the interval during which the main predication holds. The examples in (305)a,b show that the state of affairs associated with the past participle may culminate after that associated with the main predicate (cp. (305)c, where the past participial phrase is not a part of the postverbal DP and such a construal is impossible):

(305) a. $[_{DP}$ The people telephoned yesterday] had all voted for Brown.

b. Farmer Jones sold us $[_{DP}$ the pig roasted yesterday].

c. They bought it roasted.

This dissociation will prevent the kind of clash discussed in earlier in this section and open the door for the eventive interpretation

of existential sentences. Crucially, among the possible reference points for the culmination of the ascription associated with the past participle is the moment of utterance, as is made explicit by the use of *yesterday* in (305)a,b.

At least two facts support the structure in (304). First, when postcopular material is extracted, leaving behind the past participle, as in (306), the result is either bad, as in (306)a, or if acceptable, has only a reading on which the participle is interpreted adjectivally, as in (306)b:

(306) a. *What has there been shot?

b. What has there been roasted?

These data are unexpected if the DP and past participial phrase in eventive existentials are distinct constituents, but unsurprising if they must form a single constituent in order to have an eventive reading.

Second, it is possible to coordinate a phrase like *a live pig roasted* with appropriate DPs, something that should not be possible if the DP and XP are distinct constituents (and do not form e.g. a small clause):

(307) a. At the picnic, there was a volleyball game and a live pig roasted.

b. In the last month, there have been riots and peasants murdered in the countryside.

This kind of coordination sounds much worse in cases where the XP is demonstrably external to the DP, as in (308)c and (309)c:

(308) a. There was constant protesting.

b. There was a political leader who supported revolution calling for the cabinet to resign.

c. ??There was constant protesting and a political leader who supported revolution calling for the cabinet to resign.

(309) a. At the picnic, there were volleyball games.

b. At the picnic, there were people that played well showing off for the crowd.

c. ??At the picnic, there were volleyball games and people that played well showing off for the crowd.

In addition, one of the main diagnostics for the eventive existential, viz. the licensing of expressions such as *just now* or the present perfect with *just*, is not as reliable as one might expect. Milsark based one of his arguments for DP-XP independence on the following contrast:

(310) a. There has just been a man shot.

b. #There has just been a man.

The argument was that if *a man shot* had the interpretation normally associated with DPs, (310)a should be as anomalous as (310)b. However, this argument is weak because any DP that carries implicit reference to a temporally bounded interval can appear in this context, not just those DPs that are strictly speaking event-describing ((311)b):[15]

(311) a. There has just been a riot.

b. There has just been a visitor.

c. There has just been a visit by the inspectors.

We can see that the DP in (311)b picks out an individual, and not a covert state of affairs (as one might be tempted to argue), by comparing the felicity of anaphoric pronouns in subsequent discourse. (312)a may be continued by a sentence containing pronoun referring to a person (e.g. (312)b), but not by one referring to a state of affairs (e.g. (312)c; compare with (311)c, for which the opposite is true):

(312) a. There has just been a visitor.

b. She stayed 10 minutes.

c. #It lasted 10 minutes.

That is, reference to short periods of time via the existential construction is not inconsistent with the instantiation of ordinary individuals as opposed to states of affairs. Consequently, the structure in (304) cannot be dismissed out of hand on the basis of examples involving *just now* or the present perfect tense.[16] Indeed, the facts we have just laid out lend support to the structure proposed in (304). The discourse in (313)a is as strange as that comprised by (312)a and c:

(313) a. Yesterday there was a live pig roasted. ??It was over in an hour.

b. Yesterday there was a visit by the authorities. It was over in an hour.

I conclude that there is no strong reason not to pursue the structure in (304). Let us see, then, how it might be interpreted.

Consider the pig-roasting example once again, comparing it to (314)b and c:

(314) a. Yesterday, there was a live pig roasted.

b. #Yesterday, there was a pig.

c. Yesterday, there was a visitor.

(314)b is, of course, perfectly felicitous in certain contexts, e.g. as a response when I ask what animals were put up for sale this week at the farmers' market. The problem with (314)b out of context is that the use of *yesterday* implicates that the state of affairs described by the clause it modifies no longer holds. This implicature of temporal boundedness is, in turn, incompatible with the intuition that the interval over which *There was a pig* holds is inferred to persist, since we infer that any individual that instantiates *a pig* will be a pig for a persisting interval (see Section 3, above). Apparently no such implicature is associated with the main clause in (314)a or c. Why not?

Consider the case involving *visitor* first. On the basis of the contrasts in (315), I take *visitor* to be interpreted as a relation between a temporal interval and an individual:

(315) a. the table's top/#the top's table

b. the day's man/the man's day

c. the day's visitor/#the visitor's day

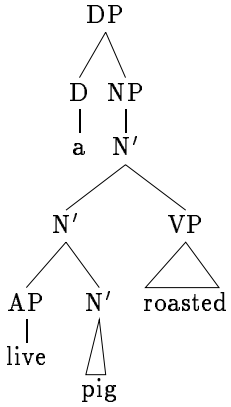
Barker 1991:59ff. observes that relational nominals cannot form prenominal possessives with DPs intended to supply a value for the nominal's internal argument (hence the asymmetry in (315)a). The cross-hatched DP in (315)a can be interpreted with an arbitrary possession relation (cf. Barker 1991), just as the relation between *man* and *day* is arbitrary in (315)b, but it cannot be assigned an interpretation on which the denotation of the possessor is a part of the table. A similar asymmetry emerges with *visitor* in (315)c, suggesting that it too, unlike e.g. *man*, is relational and, moreover, that its internal argument is an interval: the interval during which the visitor pays his or her visit.[17]

But if *visitor* is interpreted as a relation between an interval and an individual, then it is reasonable to suppose that for any pair t,x, $int((\llbracket visitor \rrbracket(t)), x) = t$ and, moreover, that this value could be quite short. This has implications for the existential construction because the interval over which the existential predicate holds of some nominalized function is parasitic on the interval over which an individual is taken to instantiate that nominalized function. Since $int(\llbracket pred(\textbf{a visitor}(t)) \rrbracket, x)$, for any x,t, can be quite short, $int(\llbracket be_{exist} \rrbracket, \llbracket a\ visitor \rrbracket)$ can be similarly short. Consequently, (314)c is acceptable with a modifier like *yesterday*, while (314)b is not.

If we can extend this sort of explanation to the pig-roasting cases, we will have no reason not to adopt the DP structure proposed at the beginning of the section. Consequently, we must ask under what circumstances, and for what interval, an individual x will be in the extension of the interpretation of an N′ like *live pig roasted*, and whether that interval is inferred to persist (as with $\llbracket pig \rrbracket$) or not (as with $\llbracket visitor \rrbracket$).

I will assume for the purposes of this discussion that *a live pig roasted* has the syntactic structure in (316):

(316)



I adopt this structure because the DP will not describe anything sensible unless ⟦*live*⟧ modifies ⟦*pig*⟧ directly, with the combination in turn modified by ⟦*roasted*⟧: Our target of description is a pig that was alive at the time it underwent a now-finished roasting and that (presumably) is no longer alive now that the roasting has finished.

I will take (317), a version of the standard treatment of adjectival modification, to determine ⟦*live pig*⟧:

(317) $[\![[\text{AP N}']_{\text{N}'}]\!]$ = a function f of the same sort as $[\![\text{N}']\!]$, such that, for any choice of $< w, t, l >$, $\forall y \in ext_{<w,t,l>}([\![\text{N}']\!]), y \in ext_{<w,t,l>}(f)$ iff $y \in ext_{<w,t,l>}([\![AP]\!])$.

All this rule says is that an individual is in the extension of e.g. ⟦*live pig*⟧ at some index iff it is both live and a pig at that index. We have no reason to suppose that the inference of temporal persistence associated with ascription of the property ⟦*pig*⟧ is defeated by the addition of *live*: (318) sounds just as odd as (314)b:

(318) #Yesterday, there was a live pig.

We must therefore look to *roasted*. I maintained in Section 4.1, above, that an individual could have the property of participating in a state of affairs only while that state of affairs is in progress, not before or after. What the past participle morphology tells us is that the property the participle identifies is one that its controller

had at an interval prior to some reference point. Therefore, we can maintain the same rule as in (317) for the combination of N′ with a past participle postmodifier, assuming the participle carries with it the condition that the interval at which the individual has the property identified by the past participle terminate prior to some contextually determined reference point.

If we maintain (317) for the interpretation of [N′ VP] strings as well, then by what we have said about the interval over which an individual can have the property identified by a past participle, any inference of temporal persistence will be defeated. An individual x instantiating *live pig roasted* will do so only while it has the property of being live, being a pig, and being roasted. The inflection of *roasted* indicates that the interval associated with this latter property has culminated with respect to the relevant reference time. This temporal restriction associated with $[\![roasted]\!]$ will be inherited by the description as a whole; that is, for any x, $int([\![live\ pig\ roasted]\!], x)$ will at most equal $int([\![roasted]\!], x)$. Since it was suggested above that for any choice of x_{nf}, $int([\![be_{exist}]\!], x_{nf})$ is determined by the interval over which the requisite individual(s) instantiate x_{nf}, we may conclude that the interval over which $[\![be_{exist}]\!]$ holds of $[\![a\ live\ pig\ roasted]\!]$ can be quite short; short enough to accept modification by a temporal adverb such as *yesterday*. Since the interval over which the existential ascription holds is, on this view, entirely parasitic on the interval over which the past participle property holds of its controller, it is unsurprising that existential sentences such as *There was a live pig roasted* seem to be about a state of affairs rather than about an individual.

This section has not by any means done full justice to the facts concerning past participle postmodifiers. For example, I have not investigated the differences between bare participle postmodifiers such as those under discussion and full relative clauses. DPs with full relative clauses differ from the strings I am calling DP here in at least two ways. First, indefinites with full relative clauses take wide scope quite successfully, as in the ambiguous (319)a, while we saw in the text above, and it can be seen in (319)b as well, that indefinites with reduced past participle postmodifiers strongly prefer narrow scope:

(319) a. Everyone admired a scientist who was awarded the Nobel Prize.

b. Everyone admired a scientist awarded the Nobel Prize.

Second, DPs with full relative clauses do not give rise to "eventive" existentials:

(320) a. #There has just been a man who was shot.

b. #Yesterday there was a man who was shot.

c. #Yesterday, there was a live pig that was roasted.

I suspect that these facts are related; however, I must leave their analysis for future research. Nor have I attempted to explore any generalizations concerning the behavior of predicative postmodifiers of N vs. V.

4.5 Chapter Summary

In this chapter I have presented an interpretation for predicative adjuncts along with an extension of that interpretation to existential sentences containing final predicative phrases. The requirement that, in most cases, the adjunct be a stage-level predicate was argued to follow from the fact that the adjunct imposes a kind of temporal restriction on the interpretation of the VP in which it appears, in concert with pragmatic considerations. I then suggested how eventive existentials, which are not amenable to either the DP-complement, XP-adjunct analysis or to a small clause analysis, could be interpreted appropriately if all of the postcopular material was contained within DP.

We now have a complete picture of the existential construction and its interpretation within a property-theoretic semantics based on that presented in Chierchia and Turner 1988. As mentioned previously, it is likely that the facts discussed in this chapter could be handled more elegantly if an algebra of events was incorporated directly into the system along with a more sophisticated treatment of aspect. I have avoided incorporating events directly into the

semantics in order to keep things simple, but I see no reason why they could not be added if necessary.

Notes

[1]Rapoport 1991 has an analysis that looks very much like (265); however, it is unclear whether she takes the event argument to stand for a primitive notion of state of affairs or a discourse-anchorable spatio-temporal parameter.

[2]A precedence relation should also be defined over the intervals in T, but I will not do this here as it will play no role in the analysis.

[3]Link 1987 uses the terms "temporal trace" and "spatial trace" to characterize the analogous functions in his system; Lasersohn 1988, "running time" and "running space."

[4]"Theme" here includes participants that are transferred (*We handed her the box unopened*); that are consumed or destroyed *They ate the meat raw, They blew up the cave unexcavated*); that appear (*They found him crying*); that are simply present (*They waited embarrassed*). It excludes those that are created (**They made the box wooden*), as well as those which might be called "patients": **She kissed him feeling sorry for himself, *She kicked the box unopened.* Though the precise descriptive generalization governing the class of possible nonsubject controllers remains to be determined, it clearly does not reduce to either "direct object" (as Williams 1980 observed) or "direct internal argument."

[5]See e.g. Carrier and Randall 1992 for arguments against positing PRO in these structures. Like Jackendoff 1990:207ff., I consider the issue of whether or not PRO belongs in these structures to be largely orthogonal to the issue of principal concern here.

[6]The rule treats the locative and temporal parameters differently in virtue of the fact that, while full temporal simultaneity is quite possible for distinct states of affairs, full locational overlap is not the norm.

[7]In locating the event argument in the semantics (her "event structure") but not argument structure, Rapoport's proposal differs from the treatment of event (or spatio-temporal) arguments in e.g. Kratzer 1989 and Diesing 1992.

[8]See below and also McNally 1994 for more on why this might be so.

[9]Unless we redefine what we take that property to mean (as in *Max is being a child*, where the child property corresponds to a particular kind of behavior); or unless the property is relativized in some way (as in *Terry has been naïve in his view of politics before,*

and he will be again, where the naïveté is not necessarily a general property of Terry but rather characterizes an attitude or reaction of Terry along a particular dimension).

[10]See Condoravdi 1992a for additional remarks to this effect.

[11](285) presupposes the existence of some mechanism that I have not specified in the text that allows the subject to be an adjunct predicate controller; however, the Adjunct Rule is exactly the same whether the controller is the subject or a non-subject theme.

[12]Some question might arise concerning the fact that *barking* selects an argument of a different sort than does be_{exist}. Note, however, that this happens in other control contexts as well, as in (i), in which the sort of the subject argument selected by the verb *try* is an ordinary individual, while that selected by the controlled predicate *extinct* is a kind:

(i) It is as if human beings are trying to become extinct.

[13]On this analysis, it is surprising that examples such as (ii) are bad, even though the hold-time of a riot is imaginably quite circumscribed, and so could conceivably license an individual-level adjunct as in *Martha returned a new person*:

(i) There was a riot.

(ii) *There was a riot horrible.

I do not have a good explanation for the unacceptability of (ii). However, the fact that (iii) is also bad suggests that the problem involves the fact that events such as a riot have no existence independent of when and where they occur (cf. Kimball 1973):

(iii) *Yesterday, a riot occurred horrible.

That is, the riot could never have the property of being horrible except while it was occurring. Perhaps this fact is the source of the problem.

[14]However, subject-controlled progressive perfect participles may be, and often are, used as free adjuncts (Stump 1985). Sentence-final free adjuncts are identifiable by an intonation break, by obligatory subject control, and by the fact that they cannot be controlled by a necessarily quantificational DP.

[15]The class of non-eventive nouns that show up in the existential in this context appears to be limited. Other examples I have found are: *burglar, speaker, guest, band*, and perhaps *noise*, as well.

[16]There is a contrast between these facts and those associated with the wh-cleft examples used by Hannay 1985 to argue that

existential sentences are used to assert something about a state of affairs rather than about an individual. (ii) is just as acceptable as (i), even though (iii) is bad, a fact that cannot be a consequence of *a visitor* describing a state of affairs:

(i) What happened yesterday was (that) there was a live pig roasted.

(ii) What happened yesterday was (that) there was a visitor.

(iii) #What happened yesterday was (that) there was a woman.

I do not have an explanation for this contrast.

[17]Of course, *visitor* may also be interpreted as a 1-place property of an individual (perhaps one who has the habit of being a visitor), and the second possessive in (315)c is interpretable as identifying, for example, a particular day assigned to that visitor. However, the phrase lacks an interpretation on which it refers to the day on which the visitor arrived, which is what is relevant.

Chapter 5

Some Final Remarks

5.1 Introduction

I have argued in the preceding chapters that the existential predicate is interpreted as a one-place property of a nominalized function. However, felicitous use of the existential construction also requires, in all of the cases we have seen so far, that a novel discourse referent (fitting the description associated with the nominalized function) be introduced, in effect to support the truth of the existential predication. The first goal of this chapter is to show how the attested examples of true definites in existentials fit into and support the overall structure of the proposal.

The specifics of the proposal raises certain expectations about what we might find elsewhere in English. For example, adding the novel discourse referent condition on to the construction independently of be_{exist} (via the expletive *there*) makes two predictions: first, that we might find the condition in other places where we find expletive *there*; and second, that we should not find the condition associated with be_{exist} if be_{exist} occurs with other sorts of expletive subjects (as I will suggest it does). The second goal of this chapter is to offer some programmatic evidence that both of these predictions are borne out in English.

Of course, this way of parceling out the informational contribution associated with the existential construction also opens itself to the criticism of insufficient cross-linguistic generality: For

instance, isn't there the equivalent of a novel discourse referent condition associated with the equivalent construction in languages such as Spanish, which lack an overt expletive? The answer is yes. However, this sort of objection is not so strong in the larger scheme of things.

The key to understanding why it is not is to remember that the basic interpretation of the existential construction, the interpretation I take to be cross-linguistically consistent, is the ascription of the property "is instantiated" to a description. As interpretations go, this is extremely general, and since the novelty condition is logically independent of it, we might expect cross-linguistic variation to start there. For example, it is perfectly possible to imagine a language that does not require the instantiation of a novel discourse referent to support the truth of the existential assertion. Such a language is Catalan.[1] It may be the case that languages are overwhelmingly likely to conventionalize use of existential sentences in such a way as to exclude definites because of the presuppositions generally associated with them. However, that does not necessarily mean that the definiteness restriction should be built overly deeply into the semantics of the construction.

Similarly, since the basic interpretation of the existential is so general, it is also possible to imagine a language that uses the same basic predicate to express different, and fairly specific, sorts of instantiation, distinguishing them by supplementing the basic predicate with a paradigm of particles or phrases; I will suggest below that such a language is English, and that existential sentences in English forms a paradigm with sentences such as these (see Carlson 1991 for arguments that sentences of the form in (321)b,c are not equative statements):

(321) a. It is Mary.

b. This is my mother.

c. That was the mail carrier just now.

If the informational contribution of the existential construction is not divided up in English as I suggest, the similarities between the examples in (321) will go unaccounted for.

In other words, the positing of very specific locations for the pieces of the interpretation is not inconsistent with the capturing

of broader generalizations.

5.2 Definites in the Existential

5.2.1 List Existentials

It was observed at least as early as Milsark 1974 that one or more definite DPs in the postcopular position are acceptable with the interpretation that the DP(s) identify individuals in a list. An example appears in (322):[2]

(322) a. Who is there available to fix the computer?

b. Well, there's Alice.

List existentials are often identified in the literature by the context in which they occur (often after questions, as in the example here) and by their intonation–they tend to have rising intonation at the end, rather than falling intonation (Rando and Napoli 1978). However, as Abbott 1992 observes, it is important to note right away that the issue of whether or not a sentence is properly classified as a list existential is independent of whether or not its DP is definite. (323) would be an equally felicitous response to (322)a, and could be given the same rising intonation contour standardly associated with the list existentials:

(323) Well, there's a guy at Gunther.

The distinction is important because several interesting properties have been ascribed to list existentials that are more appropriately described as properties of existentials containing definite DPs. For example, it has also been claimed[3] that list existentials cannot contain a secondary predicate (Hankamer 1973, Safir 1985), as seen in the oddness of (324)b and (324)c:[4]

(324) a. Who is there available to fix the computer?

b. ??Well, there's Alice free right now.

c. ??Well, in the back room, there is the guy.

d. Well, in the back room, there is a guy who's competent.

However, the fact that (324)d is an appropriate response to (324)a (with the list intonation) indicates that the badness of an adjunct phrase is associated with the definite, and not the context in which the existential is being used.

Another putative property of list existentials is that they cannot be negated (Hankamer 1973):

(325) a. Who is there available to help me?

b. ??Well, there isn't Alice.

c. Well, there isn't a technician, a sales rep, or a manager anywhere to be found.

To the extent that (325)b is interpretable, it is with metalinguistic negation. Again, we can see from the acceptability of (325)c that the definite is responsible.

An additional notable property of existentials containing definites is that they make poor non-negated questions ((326)b), though they make very good negated questions ((326)c):[5]

(326) a. Who can help us?

b. ??Is there Alice?

c. Isn't there Alice?

d. Is(n't) there a technician around?

Again, indefinites in the same context behave differently.

The fact that definites and indefinites behave differently in the same list-inducing contexts supports the position taken by Hannay 1985, Lumsden 1988, and Abbott 1992 that these peculiarities are not the result of a semantically distinct "list interpretation," as has been suggested by e.g. Milsark 1974 and Safir 1985.[6] Rather, they have all argued that ordinary and list existentials differ only pragmatically, the presuppositional properties of the definite DP being responsible for the differences between the two sorts of sentences.

Indeed, there is a bias in the analysis developed in the preceding chapters towards a pragmatic explanation of the facts, since the analysis does not exclude definites from the construction for any reason other than the familiarity presuppositions they carry.

Now consider the role of the individual instantiated when an existential sentence is added to a context: that individual is necessary to support the truth of the existential predicate as applied to its argument. But since that argument is not the individual itself, but rather the *description* of the individual, there is no reason to suppose that the truth of a sentence such as *There is Alice* could not be supported by individuals already instantiated in the discourse. We thus might expect existential sentences containing definite DPs to be licensed just in case the conflict between the act of instantiation associated with the utterance of an existential sentence and the definite's familiarity presupposition can in one way or another be resolved.

Since it is a fact that the familiarity condition associated with definites cannot be shut off, the only possibility must be that in some cases we can shut off the condition that a novel discourse referent be introduced when the existential construction is used. For example, imagine that the novelty condition could be blocked or defeated when the truth of an existential sentence was presupposed, the rationale being that conversation participants should be willing to acknowledge that the individuals needed to support the truth of the utterance have already been instantiated and, consequently, that no further individuals should be instantiated upon repeat utterance. That is, assume the following (language particular) principle:

(327) If an existential sentence is presupposed to be true in the context in which it is uttered, its (re-)introduction into the context is not accompanied by the instantiation of any discourse referent.

With (327), the door is open for the felicitous use of existentials containing definites: Bare-DP existentials will be licensed, since the (effective) familiarity condition on the use of a definite DP entails the truth of *There is DP* in any context where the use of the DP is felicitous (as Barwise and Cooper 1981 observed).

However, (327) correctly predicts that the facts will be different when the definite appears with a secondary predication. Secondary predicates introduce information that is potentially informative; for example, nothing independent of the particular context guarantees that Alice will have any particular property at any given time.

Consequently, we expect that sentences such as *There is Alice free* will be bad if their truth is not already entailed by the context; likewise, if their truth *is* entailed, such sentences should be acceptable. The unacceptability of the examples in (324)b,c show that the former expectation is realized. Whether the latter is realized as well is somewhat less clear; while the third sentence in the sequence in (328) is reasonably acceptable as an echo of the answer to the question in (328)a, that is, in the wake of explicit introduction of information that will guarantee the truth of the existential clause, it is still seems a little strange.

(328) a. Who is available to help?

b. Alice is free right now.

c. ?That's right, there's Alice free.

Perhaps (327) should be modified on the basis of the facts in (328); for now, however, I will move on, leaving (327) as it is.

Presumably the presupposed truth of a sentence such as *There is Alice* can be exploited by the speaker, as a flouting the Gricean (sub)maxims that one's utterances should be informative and relevant. If someone asks a question such as *Who can help me?*, it is reasonable to suppose that a trivially true response that makes salient a particular individual's name or description would license the inference on the part of the hearer that the speaker believes the individual fitting the description can help him/her. Trivially true assertions may also be useful as affirmations of previous comments in the discourse, as in sequences such as the following, with the unstressed anaphoric pronoun *that*, which I have found quite common in naturally occurring conversation:

(329) a. I couldn't vote for Smith; how can you trust anyone who was considered a potential donor to the Contras?

b. Yeah, there's that, and let's not even mention his apparently uncompromising personality.

Further support for the position that speakers might exploit the triviality of an existential sentence by appealing to something like (327) comes from the contrast in acceptability between negated

questions, on the one hand, and non-negated questions and negated assertions, on the other. The utterer of the negated question *Isn't there Alice?* implicates that s/he believes that *There is Alice* is true; the negated question is simply a slightly hedged version of the positive assertion (as are negated yes-no questions and tag questions in general) and, given (327), can be exploited in similar contexts as the non-hedged assertion. In contrast, the utterer of the non-negated counterpart *Is there Alice?* explicitly does not assume that *There is Alice* is true, and whoever utters *There isn't Alice* explicitly denies it. Both of these positions conflict with the felicity condition associated with the use of the name. Consequently, only the negated question is acceptable.

A final source of support for (327) could be adduced from the behavior of entailed existentials with indefinite DPs, such as B's remark uttered in a context immediately following A's comment:

(330) A: There were [15 people]$_i$ at the meeting.
B: So that means there were [10 people]$_j$ at the meeting, which is enough for a quorum.
B: Did they$_{i/*j}$ agree to vote on the measure?

The existential sentence uttered by B is necessarily true in this context; consequently, (327) should apply to it just as it applies to existentials with definites, and no new discourse referents should be introduced. In fact, none are: The use of the pronoun *they* in subsequent discourse may pick out the 15 people who were at the meeting, but not the 10 people B mentions, as B's continuation in (330) shows.[7]

I have pointed out that one way to guarantee that an existential containing a definite is entailed by the context is to exclude any secondary predication. However, there is at least one other way to guarantee the entailment and, hence, to license definites in the construction.

5.2.2 Focus and the Existential

For many speakers, the presence of *only* can improve the acceptability of definites in the existential, as in the examples in (331):

(331) a. There was only Kent available.

b. Among those in the cage, there was only the brown dog barking.

These examples are of interest because, contrary to the generalization introduced above, they have an independent final phrase. The obvious difference is the contribution of *only*. One look at the semantics for *only* (see e.g. Rooth 1985) reveals the crucial property:[8]

(332) $[\![only]\!](\alpha)$ (Rooth 1985:120):
Assertion: $\forall p[C(p) \wedge p \rightarrow p = \alpha]$
Conventional Implicature: α is true

One of the effects of *only* in (331) is to introduce the presupposition that the propositions associated with the sentences in (333) are true:

(333) a. *There was Kent available.

b. *Among those in the cage, there was the brown dog barking.

Since they are not asserted but rather are presupposed, by the principle in (327) there will be no discourse referent instantiated and consequently, no problem. That is, the acceptability of these sentences in spite of this final phrase is completely in keeping with the general pragmatic approach we have been taking.

Consistent with this is the fact that replacement of *only* with *even* renders the examples in (331) as bad as the examples in (333) for a number of speakers:

(334) a. %There was even Kent available.

b. %Among those in the cage, there was even the brown dog barking.

The difference is that the addition of *even* does not change the fact that the main assertion of the sentence is $[\![be_{exist}]\!]([\![DP]\!])$, where the DP is definite, as inspection of Rooth's semantics for *even* shows:

(335) $[\![even]\!](\alpha)$ (Rooth 1985:120):
Assertion: α is true
Conventional Implicature: $\exists p[C(p) \wedge p \wedge [p \neq \alpha] \wedge$ **unlikely**$(p)]$

To summarize, the purpose of this section has been to suggest a way in which the licensing of definites under certain circumstances can be accounted for given the analysis proposed in the previous chapters. An appeal to Gricean principles, rather than to a distinct semantic interpretation, has been made: specifically, I have suggested that definites in are licensed in the existential in English iff the truth of the existential assertion is presupposed.

5.3 Other Expectations

5.3.1 Other Expletive *There* Sentences

As I mentioned at the beginning of this chapter, the association of the novel discourse referent condition with the expletive in English predicts that such a condition might show up in other contexts where the expletive appears. Of course, expletive *there* does co-occur with certain other predicates in English. These predicates have in the past been divided into various classes (see e.g. Ross 1974, Milsark 1974, Aissen 1975), a familiar classification distinguishing predicates such as *exist, occur, follow, ensue*, which one might be tempted to classify as essentially "existential"; the non-agentive verbs of motion and verbs of location and appearance (e.g. *fall, hang, appear*); and the agentive verbs of motion (e.g. *run, jump*). Sentences containing predicates from the latter two classes are often referred to in the literature as "presentational-*there*" sentences (Milsark 1974, Aissen 1975, hereafter abbreviated PT). These three classes of verbs are exemplified in (336):

(336) a. There exists an x such that x left at noon.

b. There hung a portrait of the Queen behind the counter.

c. There roared out from behind the bushes a huge white Continental with suicide doors.

It is quite commonly agreed that when the DP occurs immediately after the verb in PT sentences,[9] it is subject to the same definiteness restriction as we have seen in the existential:

(337) a. *There exists the x such that x left at noon.

b. *There hung the portrait of the queen behind the counter.

c. *There appeared Jane at my door.

This is exactly what we expect if expletive *there* has come to be associated with the condition that a new discourse referent must be introduced.

In addition, Milsark observed that definites can appear in these sentences when the DP is right dislocated (typically, to the right of a locative phrase), an observation that seems to conflict with the claim that expletive *there* in English is consistently associated with a novelty condition. Some examples supporting Milsark's claim appear in (338):

(338) a. Suddenly, there stood before me Michelangelo's David.

b. All at once, there appeared from nowhere my best friends from high school days long past.

c. There hangs in that museum the largest of the Calder mobiles.

But the licensing of definites in this context is not systematic. Many definites do not sound good at all in these sentences, suggesting that it is an overstatement to say that there is no novelty condition whatsoever associated with the right dislocated position in PT. Consider, for example, the rather odd-sounding sentences in (339):

(339) a. ??There hung behind the counter the portrait of the Queen.

b. ??There roared out from behind the bushes the huge white Continental with suicide doors.

c. ??There ran into the chamber the lawyer for the defense.

Though I have not attempted a thorough investigation of just what makes some definites sound better than others in PT, a comparison of these examples suggests that definites that do not have to

be used anaphorically (or, alternatively put, that can introduce *discourse new* referents (Prince 1992) or that are very easily "accommodatable" (see e.g. Heim 1982 and references there)) appear felicitously in PT, while those definites that must be used anaphorically (or: cannot introduce discourse new referents, are difficult to accommodate) are infelicitous. Proper names such as *Michelangelo's David*,[10] definite possessives, and superlatives all fall into the former category. The vanilla definite DPs in (339) fall into the latter.

It is important to observe that the oddness of definites in these sentences cannot be explained away as a general property of presentational focus or inversion constructions. The inverted DP in inversion constructions lacking *there* are subject to no such definiteness restriction (see Birner 1992 for a comprehensive discussion of inversion and relevant references):[11]

(340) a. In walked Bob.

b. Out in the corridor stood the candidate.

c. Voting in favor of a strike were the Spanish and French students.

Thus, despite the fact some definites are licensed in the right-dislocated position of the PT construction, it appears that they fall into a restricted category of DP that obeys a weakened version of the novelty condition we expected. In addition, it remains the case that PT sentences in which the DP immediately follows the verb are subject to the same novelty condition found in ordinary existential sentences. The facts therefore generally support the first of the predictions mentioned at the beginning of the chapter, namely that sentences containing the expletive *there* should consistently be associated with a novelty condition of some sort.[12]

5.3.2 The Existential and Other Indexicals

The second prediction made by an analysis that associates the novelty condition in the existential construction with the expletive is that, should be_{exist} appear with other expletive subjects in English, no novelty condition should manifest itself. Arguably, the sentences in (341), which discussion in Jenkins 1975 suggests should form a

natural class with existentials despite their lack of definiteness effect, bear this prediction out:

(341) a. It's Mary at the door.

b. This is my mother playing the piano.

c. That was the girls next door.

Jenkins observed that these constructions manifest a predicate restriction just like that found in the existential: When the final XPs in (341)a are replaced with XPs interpreted as individual-level predicates, the result is bad:

(342) a. *It's Mary intelligent.

b. *This is my mother devoted.

c. *That was the girls out of their minds.

These constructions further resemble the existential in that necessarily quantificational DPs over u-sort entities are not licensed in postcopular position:

(343) a. *It's each child at the door.

b. *This is most piano students performing.

c. *That was every girl next door.

Note that the lack of a novelty condition is expected if that condition is associated with *there* and not with the verb be_{exist}.

Though each of the expletives in (341) contributes something different, the similar conditions on the postcopular material suggest that there is something common to all of them. An account that assigned these various constructions essentially the same interpretation, varying only in the felicity conditions or other conventional information contributed by the different expletives, would be parsimonious in its unified interpretation of expletive-taking *be*; it might also allow us eventually to capture those similarities that have been observed (see e.g. Lakoff 1987) between deictic locative *there* sentences (which manifest e.g. the predicate restriction shown here) and the existential construction.

Notes

[1]See Chapter 3, Section 6.

[2]The term "definites" in this section covers proper names in addition to DPs headed by a definite determiner. See Chapter 3, Section 5 on the status of personal pronouns.

[3]Though such claims have occasionally been disputed (e.g. the negation claim, discussed below, by Rando and Napoli 1978; the claim concerning the restriction on the appearance of XPs, also discussed below, by Hannay 1985).

[4]An apparent counterexample is presented by the acceptability of infinitival XPs in examples such as (i)-(iii) (we can see that these are not simply DP in light of examples such as (iv)):

(i) There is her future to consider.

(ii) There is Martha to blame for this.

(iii) There is the drought to worry about.

(iv) *Her future to consider could be a bright one.

However, it appears that infinitival XPs of this sort are not part of the existential assertion: Question and negation examples involving indefinite DPs indicate that the infinitival phrase must escape the scope of negation and question: (i) and (ii) presuppose that someone must be considered; (iii) and (iv), that someone must be blamed.

(i) Is there anyone to consider?

(ii) There isn't anyone to consider.

(iii) Is there anyone to blame for this?

(iv) There isn't anyone to blame for this.

As will become clear in the text below, the fact that the infinitival phrase is not part of the basic existential assertion in these sentences must be crucial. However, exactly how and why infinitival phrases are different from other XPs in this context is a matter that must be left for future research.

[5]Abbott credits this observation to Bill Ladusaw.

[6]More precisely, Milsark's suggestion was that the special property of list existentials was that what was asserted to exist in the list case was the list itself, rather than the individuals in the list.

[7]Of course, this does not rule out the possibility of introducing additional discourse referents that in fact constitute one or more subgroups of this group of 15, e.g. via (i):

(i) There were 2 people from the Physics department.

Note that (i) is not entailed by A's comment or by anything else in the present context.

[8]The details of Rooth's proposal concerning the assertion associated with [*only* S] and the conventional implicature associated with [*even* S] (see below) are not important here; the reader is referred to Rooth 1985 for explication.

[9]Which appears to be possible only when the verb is non-agentive.

[10]Since right dislocation in PT also appears to carry a heaviness restriction, many proper names will be excluded on those grounds.

[11]I am grateful to Bob Levine for emphasizing to me the differences between the DPs licensed in PT sentences and locative inversion.

[12]See Ward 1995 for a similar analysis of the discourse conditions on PT sentences.

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