

No lack of determination

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1. Introduction

What are traditionally called Noun Phrases seem to come in two varieties--those that begin with a determiner (or a quantifier-like expression), and those that don't. So, at first glance, while phrases like *those desks* and *most new cars* show both a determiner-type element and a nominal, phrases like *Fred*, *her*, *linguistics papers*, and *wheat*, do not. The question of whether to analyze these latter types of noun phrases as being similar in structure to the former--and if so, how--has often boiled down to the question of the exact identity of the missing determiner element. It has been suggested, for instance, that proper names have a covert definite article associated with them, so that *Fred* should be analyzed syntactically and semantically along the lines of *the Fred*, with the proviso that the definite article is deleted or otherwise fails to surface phonetically in these and similar instances (see especially Sloat 1969). Or, with pronouns, it has been proposed (Postal 1969a) that they are a species of definite determiners themselves, and so *she* for instance should be analyzed as something like *she one* (parallel to *that one*), with the proviso that the nominal element be phonetically unrealized.

The set of issues with the other determinerless noun phrases like *linguistics papers* or *wheat* is a bit different, and it's what we're going to be discussing here. These have been discussed most often in connection with genericity (some of the basic background works being Dahl 1975, Smith 1975, and Lawler 1973). The terminology of "bare plural" and "mass term" to describe these has become most familiar in current generative linguistics, though a current term encompassing both is lacking; however, as the two have a great deal in common despite their well-known differences, the lack of an appropriate cover term is apparent. So somewhat irrationally, I'll use the term "Bare Plurals" (BP's) but in so doing I also intend to include mass terms (unless otherwise noted).

The basic fact about BP's is, first, that they appear to have more than one interpretation. In a given sentence they might be interpreted existentially, as in (1a), or as something like a universal, (1b).

- (1) a. Curious people crowded around the site of the accident. (i.e. Some curious people)
b. Curious people like to travel a lot. (All, or nearly all, curious people; curious people in general)

They also typically have just one of these interpretations available in any given sentence (on a constant interpretation of the sentence less the BP). So, for instance, (1a) has no universal or general reading, nor does (1b) have an existential reading. This observation is by no means hard and fast, however. In a sentence like (2), from Longobardi (1994), both readings appear accessible:

- (2) I only excluded old ladies (=Longobardi's (41a)).

Such a sentence can be understood as excluding only some older women (and admitting others), or as excluding all who are older.

Facts such as these have spurred a great deal of work, and controversy. It is possible to separate out two closely-related issues concerning the syntax and semantics of BP's:

- (A) What do BP noun phrases mean? Do they have a single, unified meaning which appears to be different in different contexts, or are there two or more meanings?
(B) How do the syntactic and semantic (and pragmatic) contexts determine which interpretation(s) of the BP is/are appropriate?

While these two questions are intertwined, we are going to focus on the former question.

2. An early unified analysis

Traditional grammars of English assume that BP's have covert determiners associated with them. One of these is the plural form of the indefinite singular *a(n)* and accounts for the existential interpretation; the other is a universal sort of determiner or quantifier, having something like the force of *all* or *any*. This analysis presents two quite different problems. First, it would appear to predict systematic ambiguity of BP's, when one finds more generally lack of it. Second, it is no trivial matter to specify the exact identity of the "universal" null determiner, as it is clearly not universal, nor quite like any of the other non-null determiners.

ers/quantifiers. These problems were discussed in Carlson (1977, 1980), the work inspired by that of Milsark (1974). The reason, I argued there, that bare plurals are not generally ambiguous in a given sentence, is that they are not ambiguous in and of themselves. Rather, it is the syntactic/semantic context in which they appear that makes them appear to have different interpretations, not any difference in the determiner or any other element in the noun phrase. Thus, the interpretation of the noun phrase 'curious people' in (1a), in terms of the contribution that that noun phrase makes to the meaning of the whole, is identical to the interpretation it receives in (1b).

That interpretation, it was argued, was the name of a *kind* of thing, thus aligning the interpretation of bare plurals with that of proper names and definites as unquantified/referential noun phrases. If one were to assign the covert determiner a meaning (though there it was accomplished syncategorematically), it would be a function from predicate meanings to generalized quantifier meanings of the logical sort of names and definite singular terms. This identification was supported by some data showing some similarities between BP's and proper names, such as the ability of the phrase "So-Called" to appear with each (Postal 1969b) or to appear in contexts favoring definites over indefinites (Postal 1969a); but it appeared to leave other data not easily accounted for which aligned BP's with indefinites or noun phrases with weak determiners, such as the easy appearance of BP's in English existential constructions.

The mechanism for providing the apparently differing interpretations was based on an analysis of the *stage-level/individual-level* distinction, in which stage-level predicates (as found in (1a)) introduced as a part of their meanings existential quantifiers, giving rise to the existential readings found in such examples as (1a); individual-level predicates, as in (1b), did not introduce any similar existential quantifiers, so that an existential reading does not appear. That is, existential readings of BP's were attributed to an existential quantifier in the interpretation of the sentence that is not a part of the meaning of the BP itself.

The "kinds" treatment of bare plurals is motivated chiefly by several factors, only a couple of which I'll mention here. One is the existence of predicates which appear only applicable to kinds, such as:

- (3) a. Ground squirrels are *widespread/common/rare*
- b. Forks are *a type/kind of table utensil*
- c. Pick-up trucks *come in* four basic sizes

Predicates such as these do not involve generalizations over corresponding sentences with individual variables. Some facts about anaphora are also relevant.

(4) Cats think very highly of themselves

A sentence like (4) has two readings, one where each individual cat thinks it is wonderful, and another reading in which cats hold no attitude towards themselves directly, but think highly that species in general. Similarly, there is one reading for examples such as (5):

(5) John polished apples, and Mary ate them.

which allows John to polish some apples and Mary to eat some other apples (that he never polished); on the other reading the apples are, of course, identical. In Carlson (1980) this difference was attributed to whether the pronoun was interpreted coreferentially or as an E-type pronoun.

Further, NP's of the form "that kind of x" also, it is claimed, exhibit "generic" and "existential" readings as well:

- (6) a. That kind of animal eats wood. ("generic")
b. I saw that type of animal at the pet store yesterday ("existential")

Additional arguments can be found in Carlson (1977, 1980) and elsewhere. This was, I believe, the first attempt to deal with the phenomena systematically within a formal semantics framework (though see especially Lawler 1973), and it didn't take long for researchers to work on improvements.

3. Critiques and criticisms

The unified "kinds" view was certainly not beyond criticism. DeMey (1980, 1982) was among the first to question the necessity of "stages" for an analysis. More detailed presentations of alternative views are found in ter Meulen (1979), on mass terms, and more specifically in Wilkinson (1991), on bare plurals, who offers perhaps the most comprehensive critique to date. Kratzer (1980) presents a very interesting criticism of the "kinds" analysis that has had some reply (Carlson 1996; É. Kiss 1998). Lasersohn (1997) likewise critiques some of the semantic claims associated with a "kinds" analysis from examining the detailed semantics of donkey sentences. Schubert & Pelletier (1987) have a detailed critical discussion of the framework. Condoravdi (1994) and É. Kiss (1998) argue that a notion of specificity (though characterized differently in each case) distinguishes apparently universal from i

indefinite appearances of bare plurals; Condoravdi (1994), like Wilkinson, presents criticisms fairly comprehensively. Even on a unitary “kinds” analysis, there remain several alternative points of view (e.g., see Ojeda, 1993), and while a unified analysis would seem a priori desirable it is by no means taken for granted.

As the semantic theory of indefinites developed during the 1980’s (Lewis 1975; Kamp 1981; Heim 1982), another analysis of BP’s appeared that made quite different assumptions about their character. The most detailed proposals are to be found in Krifka and Gerner-Link (1986), Wilkinson (1991), Kratzer (1995, initially written in 1989) and Diesing (1992). On this type of analysis, BP’s are always indefinite noun phrases (and not like names) whose contribution to the meaning of the whole is a predicate condition with a free variable in it. Thus, roughly, a BP like *stars* in any context would be interpreted as $star(x)$, much like the indefinite singular noun phrase *a star* would if one set aside the plurality--or the definite *the star(s)*, for that matter. In this theory, the quantificational force associated with a BP in a given sentence is, as before, provided by syntactic/semantic elements outside the noun phrase itself. The mechanisms providing for this differ from the earlier analysis, some attributable directly to the DRT framework itself.

One very fertile version is Diesing (1992) and related work. In this theory, there is a simple algorithm for determining how the free variable introduced by the noun phrase gets bound: if (at LF) an NP is found within the VP of the sentence, it gets bound by an existential quantifier (“existential closure”) and mapped to a nuclear scope; and if it appears in the IP of the sentence, it gets bound by something else and appears in a restrictor. That “something else,” in the case of quantified noun phrases that have undergone QR, would be the quantifier expression (e.g., the universal *all* in the noun phrase *all men*), but there are other possible binders as well. For instance, adverbs of quantification, as found in (7) below, can bind the free variable in the (interpretation of the) subject noun phrase *linguists*, appearing at LF in the IP of the sentence.

(7) Linguists are often good musicians.

For a sentence like (8), in which there is no overt element to provide binding, a generic operator GEN is usually assumed of the sort outlined in Krifka *et al* (1995) (see also Krifka 1987), and, earlier, Farkas and Sugioka (1983)) to serve as a binder for the variable introduced by the BP subject noun phrase:

(8) Linguists like to read.

The stage-level/individual-level contrast in this framework gets indirectly reflected in whether the subject and other arguments of the predicate require the argument to appear outside the VP at the level of LF, or within it. This analysis has both been supported (e.g., Longobardi 2000) and questioned (e.g., de Hoop 1996; Bobaljik and Jonas 1996) on empirical grounds.

There is something of an obvious smallish cost associated with accommodating BP's to indefinites within a DRT-type framework: you give up a unified analysis. In these treatments a distinction is fairly systematically drawn between BP's that can be treated as indefinites (as predicates) in the DRT framework, from those that are subjects of kind-level predicates (e.g., in (3)), in which case the BP's are kind-denoting and cannot convincingly be treated as predicates of individuals (or groups of individuals). Wilkinson (1991) in particular wishes to argue that this is an acceptable outcome. Further, one does not give up on the idea that many instances of BP's in generic sentences with universal-like readings are syntactically and semantically identical to BP's interpreted existentially. In the extensive summary paper of Krifka *et al* (1995), the point of view espoused by Krifka & Gerstner-Link, Kratzer, Wilkinson, Diesing, and others was presented and treated as the "center-of-opinion" and prevailing view (even if there may have been some very minor split of opinion among the numerous co-authors).

However, looking at things in this way also has some distinct advantages. For instance, in the Carlson (1977) analysis, the fact that indefinite singulars in English and other languages may also have generic readings along with their usual existential readings, as in (9), takes a bit of extra work. But within the DRT framework coupled with some of the principles mentioned above (along with a few others), this appears to fall out naturally and, in fact, would be a bit hard to prevent given assumptions.

- (9) a. A curious person knocked on the door. (existential)
b. A curious person likes to travel. (all curious people, curious people in general)

So this approach certainly has its advantages, though other alternatives are clearly possible (e.g., Cohen 2000). However, the DRT approach exemplified in Diesing and elsewhere does not, to this point, take account of certain features of bare plurals that other analyses have focused attention on.

4. Some additional facts about English BP's

For example, the similarities noted earlier about the relationship between bare plurals and proper names—the other side of the coin—haven't been dealt with. And long-noted scoping facts about existential readings of bare plurals have also tended to get set aside. It has been observed, and generally agreed, that bare plurals exhibit only narrowest-scope readings, in contrast to overt indefinites, which exhibit variable scope. For instance, a sentence like (10 a) does not mean there are specific shoes that are being sought; nor does (10 b) have a meaning equivalent to “There are some cows that are not in the garden”, thereby allowing some (other) cows to be there:

- (10) a. Mary is looking for shoes.
- b. Cows are not in the garden.

These and other unexpected properties of BP's on their existential readings are missed on any analysis such as this which equates BP empty determiners with the indefinite plural. One particular issue that has received only minor attention in the literature (see for instance Longobardi 1994) is whether BP's are real contrasting plurals in the sense of excluding singular objects from their denotations. It appears to make some sense, at least, to claim that a question like “Are there holes in the wall?” is truly answerable with “Yes” under the circumstance where just one hole is in the wall and no more. If this is so, it argues that BP's are not indefinite plurals that stand in contrast to the indefinite singular, but rather forms whose interpretation encompasses both.

There are several other aspects of the interpretation of BP's that remain more near the periphery of research, but which have arisen in the course of this research, and which have motivated more detailed examination of BP's. For instance, Condoravdi (1994) has successfully focused attention on examples where bare plurals appear interpreted existentially, yet appear as subjects of individual-level predicates.

- (11) (There was a ghost haunting campus) *Students* were aware of this danger.

As Condoravdi points out, this is not a simple existential statement, as (11) above does not mean the same as (12):

- (12) (There was a ghost haunting campus). There were students who were aware of this danger.

But this is interpreted much more like a sentence with a definite article:

(13) ...The students were aware of this danger.

Such “functional” readings, as Condoravdi calls them, can be teased apart from truly generic readings; she ultimately argues that there is an extensional generic reading--the functional reading-- that stands alongside the generic and existential readings.

É.Kiss (1998) also points out some facts about bare plurals when focused, in that they can take on purely existential readings, unlike their unfocused counterparts. So, for instance, in (14):

(14) GIRLS know mathematics the best in my school.

it can mean that those students who know it best, are among the girls in the school; it may also be read generically as about "all" girls, as well. É.Kiss argues that this possibility of interpretation results from the fact that something must be interpreted specifically in order to be topicalized (or, contrastively focused).

A further fact about bare plurals, noted in Longobardi (1994, 2000) though also recognized (but not accounted for) in Carlson (1980), is that when a relative clause or other post verbal modifier (in English) is appended, an existential interpretation may arise where none was possible before. So, for instance, with:

(15) Neighbors are tall.

only the (slightly implausible) generic reading seems possible, but in (16):

- (16) a. Neighbors of mine are tall.
b. Neighbors that live just down the block are tall.

an existential reading may appear (along with generic readings of varying degrees of plausibility). Similar facts obtain with singular indefinites in English:

- (17) a. A neighbor is tall. (generic only)
b. A neighbor of mine is tall.(both)
c. A neighbor that lives just down the block is tall. (both)

If we change the type of relative clause in the examples above, the existential reading seems to disappear:

- (18) a. Neighbors that eat lots of vegetables are tall.
b. Neighbors from Scotland are tall.

This stands in contrast to what occurs with the indefinite singular, where the existential reading appears to remain a possibility:

- (19) a. A neighbor that eats a lot of vegetables is tall.
b. A neighbor from Scotland is tall.

The types of postnominal modifiers that allow for existential readings are, intuitively, those that locate the corresponding individuals in time and/or space. Under most circumstances, a BP will, as noted above, exhibit most clearly only a narrow scope reading. However, with an appropriate postnominal modifier, not only is an existential reading possible, but the NP also can exhibit scopal properties just like an indefinite singular. Compare, for instance:

- (20) a. John is looking for old books (narrow scope only)
b. John is looking for old books that he forgot to return to the library
(narrow or wide scope)

In the second sentence, but not in the first, the object of John's search can be a specific set of books; both sentences have a clear narrow-scope reading. Again, these facts are different from what we observe with indefinite singulars in corresponding cases. These facts are discussed in more depth by Chierchia (1998b). One further lingering fact, noted by Barbara Partee (1985), is that when bare plurals (though not mass terms, in this instance) function as "dependent plurals", they show scoping effects as well.

Exactly what the facts are, and how all these relate to each other, remains not very widely examined at the moment, but there is getting to be a rich enough set of data and sufficient theoretical development to support growing work in this somewhat obscure area.

5. BP's in Romance (and Germanic)

Somewhat ironically, some of the most interesting work on BP's comes from consideration of languages which don't have lots of them. The most highly developed body of liter

ature is on Romance, especially Spanish and Italian, which have fewer BP's than English, and French (which has virtually none). To foreshadow some, the problem raised by the “kinds” analysis as well as by the more commonly assumed indefinites analysis is that one would expect any language with BP's to exhibit them fairly freely, as in Germanic, and for BP's to have both generic and existential readings. However, consideration of other languages shows this is not always the case. What has resulted thus far from this line of research has been a return to a more sophisticated “kinds” analysis, which nonetheless makes critical use of the insights of the theory of indefiniteness. One such analysis is found in de Swart (1993), who bases her analysis on facts from English and French, and others I discuss below. (Here, as above, I can really only point to but cannot do full justice to the scope of the individual works, which contain a great deal more than the few facts presented here.)

It has been known for some time that in Spanish, the distribution and interpretation of BP's is limited. Contreras (1986) notes such facts as these:

- (21) a. *Quiero cafe*
 want-1sg coffee
 'I want coffee'
- b. *El cafe me gusta*
 Def. coffee me pleases
 'I like coffee'
- c. **Me gusta cafe*
 Me pleases coffee (subj)
- d. **Cafe me gusta*
 Coffee me pleases
- e. *Hablamos con amigos*
 Speak-1pl with friends
 'We spoke with some friends'

BP's may not occur as subjects of non-ergative verbs, whether post- or pre-verbal, and in general cannot be interpreted generically, only existentially; further, when contrastively stressed, BP's may appear. The type of account offered by Contreras centers on the notion of proper government as applied to an NP with an empty determiner position; Torrego (1989) give

s an account very similar in spirit. That is, BP's are claimed to have a determiner position represented in the syntax that, like other empty categories, requires proper government, and the N within the NP (or DP) itself cannot govern that position. The account of the data above, and much more, centers around defining government and the syntactic structures of Spanish in such a way as to account for patterns such as those found in (21). Governing items include verbs and prepositions, but subjects (as in (21 c,d)) have no governor, and the empty determiner position remains unlicensed, resulting in ungrammaticality. Note that it is necessary, on this account, to have an actual empty D position in the DP; the data from English on any of the accounts reviewed above do not motivate such an analysis as the appearance of BP's in English is basically unrestricted.

On the semantic side, Laca (1990) presents a number of keen observations about how one expresses generic objects in such a language, which has restricted occurrences of BP's. Spanish generally uses the definite article to express what we are calling the generic reading (though Laca argues the informational notion of "inclusive" presents a better understanding), and the bare plural form is generally reserved for existential (= "non-inclusive") readings. Consider, for instance, the ambiguity inherent in the English:

(22) The Gwamba-Mamba worship bears.

The preferred reading for this is that the species represents the object of worship; however, there is also a reading where there are some specific bears they keep caged up, which they worship to the exclusion of other bears. This is the reading most favored for:

(23) The Gwamba-Mamba worship idols.

That is, the object of worship is some specific group of idols, not idols in general (though this is still a possible reading). The following Spanish sentences express these preferred readings:

(24) *Los G-M adoran a los osos*
 Def G-M worship (to) Def bears
 'The G-M worship bears (in general)'

(25) *Los G-M adoran idolos*
 Def G-M worship idols
 'The GM worship (some) idols'

But this distinction between definites and bare plurals is not limited to intensionalizing verbs such as "worship". So, for example, both are possible after an extensional verb like "chase", with differential effects:

(26) *Mi perro persigue a los gatos*
My dog chases (to) Def cats
'My dog chases cats' = 'What my dog does with cats is chase them'

(27) *Mi perro persigue gatos*
My dog chases cats
'My dog chases cats' = 'My dog has a habit of cat-chasing'

In this case, the use of the definite form is correlated with focus on the verb.

Some very interesting proposals can be found in Vergnaud and Zubizarreta (1992) regarding the possibility of generic interpretations in a comparison of French and English (focusing on expressions of inalienable possession). They lay out the idea that in the DP, specific reference arises from the Determiner itself, whereas the NP is the source of type-level reference (or denotation) (Svenonius 1996, recasts this as a distinction based on whether reference to context is available). Vergnaud and Zubizarreta express this as their "Correspondence Law" (p. 612):

(28) When a DP or an NP denotes, the DP denotes a token and the NP denotes a type

Phrases exhibiting determiners that nonetheless denote types require a notion of 'expletive determiner', that is, a determiner that appears without semantic effect, except to allow the denotation of the NP to serve as the whole DP's denotation. The claim is that French allows expletive determiners (the definite article, in most cases), whereas English does not, and that this accounts for many differences between French and English discussed in the article.

Longobardi (1994), while focusing on proper names in Italian, presents an analysis with implications for the use of bare plurals which draws inspiration from Delfitto and Schrotten's (1992), and can be seen as a reinterpretation of some of the Vergnaud and Zubizarreta facts. Longobardi takes some of the crucial assumptions also presented in Contreras, and focuses on data from Italian. Like Spanish, Italian has some bare plurals in about the same restricted positions which are (almost) always interpreted existentially (and, according to Chierchia, have a slightly literary flavor to them); the generic reading is conveyed with a definite

e article or a singular indefinite article in some cases, as in French and Spanish. Longobardi's main thesis is that in the case of proper names (and pronouns) there is movement within the DP from the N position into the empty D position, resulting in a structure which does not have an empty D that must be governed externally. This means that proper names, like (nearly) any noun phrase with an overt determiner, will appear in any position a DP may also occupy.

(29) [DP [D e] [N' N]]
 |_____|

Evidence comes largely from facts about Italian word-order. In the case of empty D's in Italian, one gets about the right results by assuming that common nouns, lacking reference of their own, do not move into the D position like proper names can, leaving only those positions where the D is governed, giving rise to a narrow-scope existential reading. But then, what of English (Germanic) BP's? In these languages there is little word-order evidence of the type to be found in Italian regarding movement of names and pronouns into D, and BP's may appear in any DP position at all; further, BP's can have generic interpretations. Longobardi's proposal here is that in Germanic, determinerless common nouns can move into the empty D position at the level of LF, which gives rise to a referential, generic reading for BP's; failure to move into the D position will result in a "default" instance of existential interpretation. In this case, the presumption would need to be that the existential interpretation is available only for those positions which in Germanic would count as governed positions, generic readings being the only available in ungoverned positions. Thus, to speculate for a moment, the IP position that Diesing has suggested for generic subjects would probably count as an ungoverned position, allowing only the generic reading; the VP-internal position Diesing assumes for stage-level subjects would be governed, and thus would allow for existential readings, and generic readings as well, unless otherwise restricted.

The notion of an expletive determiner is also developed in Brugger (1993), who focuses on German as well as Italian, comparing them both with English. Brugger argues that the definite article in German, but not in English (at least for the constructions considered), can be expletive. One basic fact pointed out is that while English plural definites cannot be interpreted generically (or if so, only marginally), in German this is an entirely natural way of expressing genericity. Thus, (30) has a generic reading, while its English counterpart does not, referring instead only to some contextually determined set of elephants, which is also a possibility for the German.

- (30) ...*die Elefanten wertvolle Zähne haben*
the elephants precious teeth have
'Elephants have precious teeth'

German does have bare plurals, like English, but these cannot occur with true kind-level predicates (31), though they occur fairly freely in generic sentences (32):

- (31) *...*Dinosaurier dabei sind auszusterben* (OK with *die Dinosaurier*)
Dinosaurs PRT become extinct

- (32)
...*Elefanten wertvolle Zähne haben*
Elephants precious teeth have
'Elephants have precious teeth'

Brugger concludes that German (and Dutch) BP's cannot be kind-denoting; the definite plurals, however, have an expletive determiner in them, which fills the D position which would have to otherwise be bound by another operator. The possibility of the English definite functioning this way is precluded because the English definite article carries no grammatical features (such as case, number, gender), and hence must function semantically.

The most comprehensive attempt to deal with both the syntax and the formal semantics of BP's in Romance and Germanic is found in Gennaro Chierchia's work (1998a, 1998b). Chierchia takes as his starting point a "kinds" approach that he also developed in his dissertation (Chierchia 1988, written in 1984), which involves a formal semantics making use of type-shifting, chiefly as a way of characterizing the meanings of nominalizations more generally. Type-shifting is also a means of resolving type mismatches between function and argument (Partee, 1987). Chierchia takes the point of view, *pace* Longobardi, that NP's can, subject to parametrization, function as arguments just like DP's can: that is, on his analysis there is no empty determiner slot in the case of BP's or determinerless mass terms, on this parametrization. Another parameter setting, however, takes NP's to be predicational, and so NP's cannot enter into argument positions without being a part of a DP (this would be the case of French, though for Spanish/Italian an empty D is posited). One of the main features of his approach is that for Germanic and Romance (and many other languages), the semantics of the type-shifting itself demands that the NP be either plural or a mass term; type-shifting defined on singular count nouns will not yield a kind, so this rules out the appearance of bare singulars (for the most part) in these languages.

One main point of Chierchia's analysis is to account for the scopelessness of the existential reading of BP's, and to answer some questions raised by the prevailing view that generics should be analyzed as indefinites: (a) why would languages consistently use the same device (BP's or, in many languages, determinerless singulars) to express both kind-reference and existential indefiniteness? (b) why in the indefinites view would there be an ambiguity posited between kind reference, and a weak indefinite reading--why not a strong one? In Chierchia's account, very briefly, the scopelessness is the result of an existential quantifier introduced *in situ* by type-shifting to resolve a type mismatch between predicate and argument.

The approach taken here also has the merit of resolving some objections to the kinds analysis that Carlson's original Montague grammar analysis left lingering. For instance, the fact that BP's set well in existential "there" sentences seems at odds with their referential treatment, as proper names, definites, and other similarly referential phrases are generally excluded. However, as McNally (1992, 1998) points out, "kind" phrases do not seem to obey the definiteness restriction ("There was every kind of animal in the garden" vs. ?? "There was every guest in the garden"). McNally (1998) proposes, along with Chierchia, that the definiteness restriction should be supplanted by a semantics for existentials that requires the denotation of the NP to be something that can have individual instantiation--like kinds.

In unpublished work, Delfitto (1998) has explored many of these same issues, again with emphasis on Romance and Germanic, and also arguing for a unitary analysis of BP's. One of Delfitto's main theses is that the existential readings of BP's arises from an existential quantifier associated with the event-argument position of verbs, and that genericity arises not from the presence of a GEN-type quantifier, but from the aspectual character of the sentence itself. Possibly taking a cue from Diesing and Longobardi, Delfitto proposes that generic sentences involve an aspectual structure which requires one of its arguments (typically the subject) to be marked as an external argument (in Diesing's terms, in the IP). The effect is to create a predicational structure which demands that type-shifting take place on the external argument whereby it gets interpreted intensionally--as a property set. Delfitto also deals with the apparent scopelessness of existential readings of BP's and the cases where they take on scopal properties, also discussed in Chierchia. One particular issue Delfitto wishes to deal with is the fact that the presence of a modifier, such as a relative clause, can make for acceptable BP's in cases where a bare noun seems unacceptable. For instance:

- (33) a. **Cane creano guai seri*
 Dogs create troubles serious

- b. *Cane di grosse dimensioni creano guai seri*
 Dogs of large size create troubles serious
 'Dogs of great size create serious trouble'

In order to account for such differences, an empty D position is assumed within a minimalist framework; the issue is what types of features are transmitted to the D position. It is proposed that when there is a postnominal modifier, the system works in such a way that the D position remains devoid of nominal features, thus allowing for the D to be "identified" and interpreted. Delfitto in this respect presents an alternative to the somewhat simpler analysis offered by Longobardi.

Delfitto offers a perspective on BP's that aims for a unitary analysis, and, further, does not rely upon the standardly assumed GEN operator, nor on any existential quantifiers over and above the one to bind event-arguments in VP's. This work, along with Chierchia's, is much in the same vein as work by Dobrovie-Sorin (1996) and Dobrovie-Sorin and Laca (1997), who aim for a unitary analysis of BP's in English as well as Romance which again treats them as distinct from indefinites, and, additionally, incorporates an analysis of Condoravdi's functional readings of BP's. One of the main contributions (among others) of this work is to emphasize that the stage/individual-level contrast is cross-cut by another relevant contrast, that of spatio-temporal localization, and it is this dimension which determines the possibility. Evidence surrounds stative (adjectival) stage-level predicates which appear only capable of taking generic subjects. So, for instance, emotional-type predicates appear to be stage-level, but do not readily accept localizers:

- (34) a. ??During Chomsky's lecture, top-models were hungry/tired/drunk
 b. ??Look! Top-models are drunk/hungry in the street.
 c. ??Children are nasty/sick/happy in school (no existential reading; a frequentitive/conditional)
 d. ??Where is John happy/nasty/angry? (only frequentitive/conditional rdg)

The emphasis on localization is highly reminiscent of many analyses of "stage-level" predicates (Kratzer 1995; McNally 1995, to mention but two), but Dobrovie-Sorin and Laca put this common theme into a new and richer setting which addresses the types of issues also discussed extensively by Fernald (1994).

6. A Little on Bare Singulars

Less work has focused on singular count common nouns lacking determiners, as in the Romance and Germanic languages these do not appear systematically in argument positions (though may in vocative and predicative constructions). However, this does not mean they are totally lacking. English has them sporadically ("I saw it on *television*" or, as Richard Oehrle pointed out to me, "The special relation between *doctor and patient* deserves special legal protection."). In Scandinavian languages, they appear quite a bit more systematically. Borthen (1998) discusses these in Norwegian. Here we find, for instance:

- (35) a. *Jeg kjører bil.*
 I drive car
 'I drive a car'
- b. *Petter spiser helst med skje.*
 Petter eats rather with spoon
 'Petter would rather eat with a spoon'
- c. *Jeg har bestilt billett.*
 I have ordered ticket
 'I ordered a ticket'

However, bare singulars may not appear in many other instances:

- (36) a. **Jeg odela datamaskin.*
 I destroyed computer
- b. **Bil kjører bortover veien*
 Car drives along road-the

Borthen considers the semantics of these bare singulars where they may occur, detailing how, on almost anyone's analysis, they must be regarded as non-specific (i.e. the observations are similar to those made in Enç 1991 for determinerless bare singulars in Turkish); further, they exhibit the same sort of scopelessness as (most instances of) BP's. Borthen does not find a specific syntactic mechanism to account for the distribution and interpretation of bare singulars in Norwegian, in the end settling on a semantic account which limits their appearance to argument positions exhibiting only certain semantic roles which are enumerated and motivated in the account.

Work on bare singulars in other languages that likewise have articles and/or plurality has yielded a very similar pattern of syntactic and semantic observations. The work on AI

banian (Kallulli 1996,1999) shows a pattern there strikingly similar to the facts presented above. Bare singulars in Brazilian Portuguese have been investigated in detail by Schmidt and Munn (1999) and Munn and Schmidt (1999, 2000), where a similar set of facts seems to fall out, though there bare singulars also may function as subjects. Dayal (1999) examines bare singulars in Hindi, which are restricted to objects position, and again the same array of semantic observations hold. A quite different set of observations about bare singulars, though, appears to hold for English (e.g., "He went to *prison*; She is at *school*") as discussed in detail by Stvan (1998).

It is widely recognized that bare singulars occur in any of the large number of languages which lack overt definite and indefinite articles, but their study in the context of the issues raised within the framework of BP's has lagged somewhat in comparison. Chierchia's work makes an attempt to deal with such languages as the Slavic languages, Japanese, and Chinese. A partial effort in this direction for Slavic languages can be found in Filip (1993) and elsewhere, but the most detailed effort to date that I am aware of is to be found in Cheng and Sybesma (1999), who undertake a detailed comparison between Mandarin and Cantonese within the context of these issues (see also Gelman & Tardif 1997 and Basilico 1998 for some observations regarding Chinese bare nouns as well).

Mandarin Chinese, like many others, is a language without plural morphology or articles, so many noun phrases have the appearance of bare singulars. These may be interpreted as definite, indefinite (existential), or as generic, but not all these interpretations may appear in all argument positions. So, for instance, in preverbal position, these noun phrases cannot (typically) be interpreted as indefinites, only as definites or generically; but postverbally an indefinite (and non-specific) reading emerges.

- (37) a. *Gou jintian tebie tinghua*
 dog today very obedient
 'The dog was very obedient today' OR 'Dogs (in general) were very obedient today'
 But NOT: "A dog was very obedient today"
- b. *Hufei mai shu qu le*
 Hufei buy book go PRT
 'Hufei went to buy a book/some books'

In Cantonese, however, bare nouns cannot be interpreted as definites. Definiteness is expressed by the use of a classifier (CL); as in Mandarin, bare nouns cannot be interpreted as definites preverbally (though they may be interpreted generically).

- (38) a. **Gau soeng gwo maalou*
 Dog want cross road
 (Not possible for 'The dog wants to cross the road')
- b. *Zek gau zung-ji sek juk*
 CL dog like eat meat
 'The dog (NOT dogs in general) likes to eat meat'
- c. *Gau zung-ji sek juk*
 Dog like eat meat
 'Dogs like to eat meat'

Mandarin, Cheng and Sybesma argue, also has CL+Noun phrases as well; however, there, the interpretation is always indefinite, and never definite as in Cantonese. The thrust of the work is to argue that classifiers in both Chinese languages function very much like D positions, in that any bare noun is a part of a classifier phrase, the basic structure being:

- (39) [CIPCl [NP N]]

That is, bare nouns have more structure than just the noun (or NP) itself. To achieve a definite interpretation, the N moves into the empty Cl position in Mandarin (similar to the Longobardi analysis of proper names). As a consequence, the empty position is filled and it need not be governed, which allows it to appear in preverbal position. The indefinite interpretation arises when the N does not move into Cl, and as a result the empty position must be governed, as in the Spanish/Italian analyses with empty D position that must also be governed. In Cantonese, on the other hand, the fact that an overt Cl is used to express definiteness precludes the possibility of also using the covert strategy of movement into Cl to express definiteness (this also follows a suggestion of Chierchia), and as a result the empty Cl is interpreted indefinitely if governed, or if the N moves into Cl it may also be interpreted generically. Presence of an overt Cl blocks a generic interpretation. This work certainly sets the stage for future work in languages lacking articles, making use of the body of literature discussed above.

Before closing, it is worthwhile mentioning some other recent work. Brockett (1991) contains a detailed examination of Japanese; we also find Dayal (1992) on the situation in Hindi and Portersfield & Srivastav (1988) on the contrast between Hindi and Indonesian. Chung (2000), in a reply to Chierchia, also examines Indonesian in detail. Petronio (1995) discusses ASL (which has no plurality or articles; see also the other papers in the same volume). Greenberg (1994) comprehensively presents facts about Hebrew, and É. Kiss (1998), Hungarian. Bittner (1994) and Van Geenhoven (1998) discuss West Greenlandic incorporated nominals within this tradition, where one finds the most detailed semantic observations about these structures (along with the work on Hindi bare singulars--which are arguably incorporated forms--mentioned above). It appears that incorporated nominals (chiefly, objects of verbs) follow the general pattern of semantic interpretation characteristic of BP's and bare singulars as well--chiefly, in having nearly always weak indefinite existential and number-neutral interpretations. The same range of interpretations also appears to hold for "pseudo-incorporated" forms (Massam 2001). This suggests that incorporated nominals and BP's share a lot in common that deserves closer examination, as argued most pointedly by van Geenhoven (1995). In some languages, such as West Greenlandic, incorporated nominals can be modified or quantified from outside the word; this gives rise to a discontinuous syntactic form--a "split" construction--which likewise raises interesting questions about the semantics of determinerless nouns even in languages which do not have incorporation (Diesing 1992; Beerman 1997; also Geurts 1996).

Perhaps the most comprehensive survey of the range of nominal forms used to express genericity is to be found in Gerstner-Link (1998), who compares forty disparate languages and summarizes the results in a series of proposed universals. The patterns she finds are largely in keeping with the detailed work on a more limited set of languages (she uses German as her base case), but there are some surprises, for example, that not all languages with indefinites can use indefinites generically; but definites can be consistently used that way.

7. A codicil on stages

I would be remiss not to bring up one closely related issue before concluding. The Carlson (1977, 1980) analysis makes use of a construct of "stages", temporally-restricted portions of individuals, as a means of characterizing existential readings of bare plurals. Most researchers, including the majority of those discussed above, have found such constructs dispensable, using existential quantification over individuals instead for the indefinite reading. This results in equivalent truth-conditions (in most cases) but also in an ontologically more parsimonious framework (though many make use of an event-semantics that introduces v

ery similar types of entities into the model). However, a good number of researchers have found that stages themselves are useful constructs in their own right, as in Stump's (1981) analysis of constructions such as "an occasional sailor walked by". The literature making use of stages is more scattered than the literature reviewed above, but the issue occasionally surfaces when temporal restrictions are examined more closely. One recent comprehensive discussion is to be found in Musan (1995), who builds on the work of Enç (1981). Yoon (1998) considers the semantics of English indefinite NP's with a proper name modified by an adjective.

- (40) ...*a handcuffed Jones* protested as two Columbus police officers pushed him into the Franklin County jail.

Yoon notes, first of all, that the adjectives appearing in this construction are stage-level and not individual-level adjectives ("a startled Kato Kaelin" vs. ?? "an intelligent Kato Kealin"); further, that despite their indefiniteness, they appear to make reference to individuals already introduced into the discourse. However, if the NP refers to a stage of an individual, then that stage itself constitutes a novel entity into the discourse, hence the indefinite. Dermidache (1997a, 1997b), in some provocative work, has also employed and defended stages in the analysis of St'at'imcets (Lillooet Salish) noun phrases in order to account for their temporal restrictedness. Lin (1999) has proposed that stages be countenanced in order to account for the semantics of *shenme* 'what' in donkey-type conditional sentences in Chinese (also examined in great detail by Huang and Cheng (1996) though they focus on the semantics of 'who', which turns out to have some different properties). The stage/individual contrast has also been invoked in unpublished work to form an account of the semantic distinction between the Japanese anaphoric expressions *sore* vs. *kare*. Carlson (1991) discusses the use of stages for the analysis of certain demonstratives in English--see Büring (1998) for an interesting and closely-related discussion.

8. Outcomes and Conclusions

Researchers now have on hand a large and sophisticated set of both data and analyses to draw from in considering the appropriate syntax and semantics of BP's. This presents us with an excellent base from which to work on this and related problems from a variety of perspectives, in a variety of the world's languages. On some matters, there is quite solid general agreement. One is that BP's on both existential and generic readings should try to be analyzed as having something basic in common. Another is that very close attention needs to

to be paid to issues of specificity and scoping for the indefinite readings. We have also seen a general trend towards taking elements of both the theory of indefinites and the kinds analysis, and trying to preserve something like a unitary analysis of BP's across languages: few if any of the researchers noted, in particular, defend an analysis in which there are multiple null D's. The success of assuming an empty D position that must be properly governed in some languages is also widely appealing, as is the idea that there is a connection between movement into D and definiteness/genericity.

An area that can use closer scrutiny, aside from extending research to a broader number of languages, is a more careful understanding of the relation between definite singular, definite plural, BP, singular indefinite generics, incorporated nominals, and the relation of these expressions to overtly expressive "kind" NP's in general, in languages which allow them. This has not been entirely ignored by any means, but not enough has been done to create a consensus opinion. One also does not find convincing analyses (to my mind) of examples such as (2) above, where both a generic and an indefinite reading may appear, and I have to regard this as an open area of research. There has also not been quite enough work done in light of Condoravdi's observations about functional readings of BP's.

However, the area where one finds the most bewildering variety of proposals is accounting for the source of the existential quantification in the case of existentially-interpreted BP's. A sampling of some include:

- (41)
- DRT existential closure (Diesing 1992, Krifka 1987)
 - Type-shifting (Chierchia 1998b)
 - Quantification over stages (Carlson 1980)
 - Binding of a situation variable (de Swart 1993; Delfitto 1997)
 - Default interpretation of an empty D (Longobardi 1994)
 - Binding due to sentence information structure (Glasbey, 1993)
 - Location-argument binding (Dobrovie-Sorin 1996)
 - Categorical/thetic structure (Basilico 1998, Ladusaw 1994; Kuroda 1972)
 - Specificity (Condoravdi 1994)
 - Mapping from properties to propositions (Carlson 2000)
 - Referential anchoring (Löbner 2000)

and so forth. The variety here is perhaps best understood as a reflection of the differing theoretical assumptions and/or machinery that are available, but it certainly reflects the wide-open state of the area as it stands. The question is, how much difference do these various assumptions make?

In some cases, they appear to make little difference. For instance, if one attributes V P-level existential quantification to existential closure, as Diesing suggests, or to an existential quantifier connected with the event structure, as Delfitto suggests, the effect on BP's is about the same. Type-shifting (Chierchia) quite clearly locates the source of the existential quantifier at the boundary between the NP and the predicate it is combining with, but then Carlson's existential quantification over stages can be looked upon in much the same way, though the ontologies differ. Longobardi's "default" existential quantifier is very much in the same vein. At the current state of research, there is no strong consensus about what source of existential quantification is correct or incorrect (nor does there seem to be one about the precise source of generic readings as well), so it is possible to focus on the correlated structures within the DP itself, and still make very productive contributions. As research continues and the theoretical issues become increasingly sharpened, however, I expect people are going to have to increasingly reason to choose among them.

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