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DEFINITENESS AND INDEFINITENESS*

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1. Introduction

The prototypes of definiteness and indefiniteness in English are the definite article *the* and the indefinite article *a/an*, and singular noun phrases (NPs)¹ determined by them. That being the case it is not to be predicted that the concepts, whatever their content, will extend satisfactorily to other determiners or NP types. However it has become standard to extend these notions. Of the two categories definites have received rather more attention, and more than one researcher has characterized the category of definite NPs by enumerating NP types. Westerstahl (1985), who is concerned only with determiners in the paper cited, gives a very short list: demonstrative NPs, possessive NPs, and definite descriptions. Prince (1992) lists proper names and personal pronouns, as well as NPs with *the*, a demonstrative, or a possessive NP as determiner. She notes, in addition, that “certain quantifiers (e.g. *all*, *every*) have been argued to be definite” (Prince 1992: 299). This list, with the quantifiers added, agrees with that given by Birner & Ward (1998, 114). Ariel (1988, 1990) adds null anaphoric NPs.

Casting our net widely, we arrive at the list in Table 1, ordered roughly from most definite or determined in some sense to least.

TABLE 1: Preliminary list of definite NPs			
	NP TYPE	MORE DETAILS	EXAMPLES
1.	[NP <i>e</i>]	control PRO; pro; other instances of ellipsis	<i>Mary tried e to fly</i> ; [on a pill packet] <i>e contains methanol</i> [= Ariel 1988, ex. 7a]
2.	Pronouns	the personal pronouns	<i>I, you, she, them</i>
3.	Demonstratives	demonstrative pronouns; NPs with demonstrative determiners	<i>This, that, this chair over here</i>
4.	Definite descriptions	NPs with <i>the</i> as determiner	<i>the king of France, the table</i>

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¹ ‘Noun phrase’ and ‘NP’ will be used to denote a category whose specifier is a determiner. It may be more accurate to speak in terms of determiner phrases (DPs), of which determiners are heads, but the more traditional category will be retained for this article.

5.	Possessive NPs	NPs with genitive NPs as determiner	<i>my best friend's wedding, our house</i>
6.	Proper names		
a.	First name alone		<i>Julia</i>
b.	Full proper name		<i>Julia Child</i>
7.	NPs	NPs with a universal quantifier as determiner	
a.	<i>Each</i>		<i>Each problem</i>
b.	<i>Every</i>		<i>Every apple</i>
c.	<i>All</i>		<i>All (the) girls</i>
8.	[_{DET} Ø]	The null determiner understood generically	<i>Pencils [are plentiful/made of wood], beauty [is eternal]</i>

Speaking loosely, we can see that each NP type listed in Table 1 is ordinarily used to refer to some particular and determinate entity or group of entities. Possessive NPs have been included in Table 1 since they are almost universally considered to be definite. However Haspelmath (1999) argues that possessives are not inherently definite but merely typically so. (See also Barker 2000.)

Turning to indefinites, we can construct a parallel list, going in this case from intuitively least definite to most definite. The ordering here is very rough indeed, and (as with the ordering in Table 1) specific details should not be taken to imply any serious claims.

	DETERMINER TYPE	COMMENTS	EXAMPLES
1.	[_{DET} Ø]	“Bare” NPs understood existentially	<i>Children [are crying], snow [was piled high]</i>
2.	<i>Any</i>		
a.		Polarity sensitive <i>any</i>	<i>[hardly] any books</i>
b.		“Free choice” <i>any</i>	<i>Any idiot [can lose money]</i>
3.	<i>No</i>		<i>No thought(s), no music</i>
4.	<i>Most</i>		<i>Most (of the) apples, most snow</i>
5.	<i>A/an</i>		<i>A cook, an idea</i>
6.	<i>Sm, some</i>	“ <i>sm</i> ” refers to unstressed occurrences with weak or cardinal interpretation. <i>Some</i> is the strong, or partitive, version (see §4 below).	<i>Sm books, some (of the) space</i>

7.	<i>Several, a few, many, few</i>	These determiners also are said to have weak and strong versions.	<i>Several (of the) answers, few (of the) athletes</i>
8.	Indefinite <i>this</i>	Occurrences of this <i>this</i> can occur in existentials (see below).	<i>This weird guy [came up to me]</i>

The tables above have been presented without explicit criteria or argument. In the remainder of this essay we look in turn at a series of properties – uniqueness, familiarity, strength, specificity – each of which is correlated with a range of grammatical phenomena and can lay some claim to expressing the essence of definiteness.^{2, 3}

2. Uniqueness.

The classic “uniqueness” characterization of the difference between definite and indefinite NPs emerged in Russell’s (1905) attempt to find the logical form of English sentences containing denoting phrases. A sentence with an indefinite NP as in (2) receives the logical analysis in (2a), which is paraphrasable back into semi-ordinary English as in (2b).

- (2) A student arrived.
- a. $x[\text{Student}(x) \ \& \ \text{Arrived}(x)]$
 - b. There exists something which is both a student and arrived.

Viewed in this way, the NP *a student* has the same type of analysis as a clearly quantificational NP such as *every student*, whose standard logical analysis is shown in (3a).

- (3) Every student arrived.
- a. $x[\text{Student}(x) \ \text{Arrived}(x)]$
 - b. Everything is such that if it is a student, then it arrived.

Notice that in neither case is the NP (*a student, every student*) translated as a constituent.⁴ Instead these phrases only receive an analysis in the context of a complete sentence.

² Unfortunately we will be forced to confine our attention in this article to determiners and NP types in English. There are a number of excellent cross-linguistic studies available: Gundel, Hedberg & Zacharski 1993 includes data from 5 languages (English, Spanish, Russian, Mandarin Chinese, and Japanese); Lyons 1999 is a broad cross-linguistic study of definiteness; and Haspelmath 1997 examines indefinite pronouns in 140 languages.

³ Predicate nominals will not be considered here, but see Graff (2001) for an interesting analysis which she extends to NPs in argument positions.

⁴ This feature was essential to Russell’s explanation of knowledge by description. However it poses a problem for the compositional analysis of ordinary language, since quantificational NPs do not receive an interpretation by themselves. The use of restricted quantification (see e.g. McCawley 1993), while reducing the unsightly mismatch between the cumbersome formulas of

Definite descriptions (NPs with *the* as determiner) were the centerpiece of Russell's analysis. (3) receives the analysis in (4a).

(4) The student arrived.

a. $x[\text{Student}(x) \ \& \ \underline{y[\text{Student}(y) \ \underline{y = x}] \ \& \ \text{Arrived}(x)}]$

b. There is one and no more than one thing which is a student, and that thing arrived.

Comparing (2a) with (4a) it is clear that the clause distinguishing the two is the one underlined in (4a), which requires there to be only one student. Thus on this view the definite article expresses the idea that whatever descriptive content is contained in the NP applies uniquely, that is to at most one entity in the domain of discourse.

Uniqueness does seem to capture the difference between definite and indefinite descriptions in English when they contrast. This is brought out by examples such as the following:

(5) That wasn't A reason I left Pittsburgh, it was THE reason. [= Abbott 1999, ex. 2] where the stress on each article brings forward a contrast between uniqueness vs. nonuniqueness. It also explains why the definite article is required when the descriptive content of the NP guarantees a unique referent.

(6) The king of France is bald.

(7) The youngest student in the class got the best grade.

(6) is Russell's most famous example.

Russell's analysis as given applies only to singular NPs, since the mathematics for which predicate logic was being developed did not require plurals or mass terms. However it is relatively straightforward to extend Russell's concept (if not his formalization) to definite descriptions with plurals or mass heads (e.g. *the students*, *the sand*). In his classic treatment Hawkins (1978) proposed that the crucial concept is INCLUSIVENESS – reference to the totality of entities or matter to which the descriptive content of the NP applies. (Cf. also Hawkins 1991; Hawkins' analysis is actually more complex than this, in order to deal with the problem of incomplete descriptions. See below, §2.3.) This aligns definite descriptions with universally quantified NPs.

Russell's analysis of definite descriptions stood unchallenged for close to fifty years, but since that time a number of issues have arisen which have caused many to question or to reject it. Here we will mention three, in order of the seriousness of the challenge they present to Russell, from weakest to strongest: presuppositionality, referentiality, and incomplete descriptions.

3.3 The problem of presuppositionality

The first challenges to Russell's theory of descriptions were raised by P.F. Strawson in his classic 1950 article "On referring". One of the main points of this paper was to take issue with what Russell's analysis implied about what is asserted in the utterance of a sentence containing a definite description. Consider the Russellian analysis of (6):

(6) The King of France is bald.

a. $\underline{x[\text{King-of-France}(x) \ \& \ \underline{y[\text{King-of-France}(y) \ \underline{y = x}] \ \& \ \text{Bald}(x)}]}$

b. There is one and only one entity who is King of France and he is bald.

first order logic and their counterpart sentences in English, does not provide a solution. That awaited Montague's (1973) introduction of generalized quantifiers. See below, §4.2.

Strawson argued that the first and second clauses of Russell's analysis (underlined in (6b) and (6c)), the clauses which contain the statements of existence and uniqueness of an entity meeting the descriptive content of the NP, have a different status from the baldness clause. He pointed out that were somebody to make an announcement using (6), we would not respond "That's false!", but would point out the speaker's confusion in making the utterance in the first place. Strawson argued that these two clauses would be PRESUPPOSED (the term is introduced in Strawson 1952) in a current utterance of (6) and that in the absence of a (unique) king "the question of whether it is true or false simply doesn't arise" (Strawson 1950: 330).

It should be mentioned that some sixty years prior to Strawson's paper Frege had argued the same point in his classic paper "On sense and reference": "If anything is asserted there is always an obvious presupposition that the simple or compound proper names [roughly, definite noun phrases] used have reference" (Frege 1892: 69). Furthermore Frege included a specific argument: if the assertion were as given in (6b) then the negation of (6) should be:

(6) d. Either the King of France is not bald, or the phrase "the King of France" has no reference.

However it seems obvious that the negation of (6) would not be (6d) but rather (6e):

(6) e. The King of France is not bald.

which presupposes the existence of a King of France just as much as (6) does. Cf. Frege 1892, 68f. Frege's work, now considered fundamental, underwent a period of neglect during the middle part of the twentieth century.

Since the publication of Strawson's paper there has been fairly unanimous support for the intuitions he expressed, but less agreement on how best to give an account of these facts. One main parameter of disagreement has been whether presuppositions are best regarded as a semantic phenomenon affecting the truth conditions of utterances, as Strawson viewed them, or are instead better seen as pragmatic conditions on the appropriateness of an utterance. See Stalnaker (1974) and Boer & Lycan (1976) for discussion, and see Atlas (this volume).

A complicating factor is variation in strength of presuppositions depending apparently on whether the triggering phrase is functioning as TOPIC of the sentence (see Gundel & Fretheim, this volume). (6f) seems not to presuppose the existence of a king, or not as strongly as (6), and seems to be simply false rather than lacking a truth value.

(6) f. Bill had lunch with the King of France last week.

See Atlas (to appear), von Stechow (to appear), and the works cited there for discussion.

3.3 The problem of referentiality

The second important critique of Russell's theory was launched by Keith Donnellan in his 1966 classic "Reference and definite descriptions". Donnellan argued that definite descriptions have two uses, one of which, called by him the ATTRIBUTIVE use, corresponds to Russell's analysis but the other of which, termed REFERENTIAL, does not.

Donnellan's most famous example is given in (9):

(9) Smith's murderer is insane.

As an example of the attributive use of the description in (9), consider a situation in which the police detective first views the crime scene where Smith, the sweetest and most lovable person imaginable, has been brutally murdered. The utterance in that case conveys 'Whoever murdered

Smith is/must be insane', and the particular description used, *Smith's murderer*, is essential to the propositional content of the utterance, just as Russell's analysis suggests. However we can imagine quite a different scenario, say at the trial of Jones, whom everyone is convinced is the one who murdered Smith. Suppose that Jones is behaving very strangely while on trial – muttering constantly under his breath and throwing spitballs at the judge. A spectator might utter (9), perhaps with a nod in Jones's direction, in order to make a claim that the individual Jones is insane. This would be an example of Donnellan's referential use. While on the attributive use one says something about whoever or whatever fits the description used, on the referential use the description used is just a means to get the addressee to realize which entity is being spoken about, and in principle any other description or term which would have that result would do as well. Thus in the courtroom scenario the speaker might have said, instead of (9), *That guy is insane* or *He [pointing] is insane*.

Donnellan hedged a good bit on whether the distinction he was pointing out was semantic or pragmatic. One of his more controversial claims was that one could use a definite description referentially to make a true statement about somebody or something who did not fit the description – for instance in the example above, were Jones innocent of Smith's murder but insane. Kripke (1977) used this controversial claim in a rebuttal many have found persuasive. Kripke distinguished semantic reference from speaker's reference and argued that Donnellan's referential use was simply the latter and thus a purely pragmatic affair. On the other hand many of Donnellan's defenders who have believed in the semantic relevance of his distinction have discarded this controversial aspect (cf. Kaplan 1978, Wettstein 1981, Wilson 1991; cf. also Dekker 1998). Burge (1974) assimilates referentially used definite descriptions (as well as pronouns and, interestingly, tenses) to the category of demonstrative phrases. According to Burge what they all have in common is that they are used to "pick out an object without uniquely specifying it" (206f). Burge proposes an analysis of demonstrative phrases according to which reference is determined, in part, by an act of referring on the part of the speaker, which accompanies the utterance of the demonstrative phrase. However the descriptive content of the NP must also apply to the referent on his account. (See Bach 2001 for extensive discussion of Donnellan's referential-attributive distinction, and see Carlson, this volume, on reference in general.)

3.3 The problem of incomplete descriptions.

The kind of examples which appeared in Russell's 1905 paper, like (6) repeated here and (10),

(6) The king of France is bald.

(10) The author of *Waverley* is Scott.

are ones where the content of the description is such as to ensure a unique referent. Thus in a usual use of such sentences to make a true assertion the Russellian truth conditions would be satisfied: if (10), for example, is true then there is one and only one person who wrote *Waverley* and that person is Scott.

Perhaps the most intractable problem with Russell's analysis has been the existence of what are known as INCOMPLETE (or sometimes IMPROPER) descriptions.⁵ These are examples in which the descriptive content of a definite NP does not apply uniquely to the intended referent, or to anything else. This problem was pointed out by Strawson in his 1950 critique, but only as a passing comment and not a major objection. Thus Strawson noted:

Consider the sentence, 'The table is covered with books.' It is quite certain that in any normal use of this sentence, the expression 'the table' would be used to make a unique reference, *i.e.* to refer to some one table. It is a quite strict use of the definite article.... Russell says that a phrase of the form 'the so-and-so,' used strictly, 'will only have an application in the event of there being one so-and-so and no more.' Now it is obviously quite false that the phrase 'the table' in the sentence 'the table is covered with books,' used normally, will 'only have an application in the event of there being one table and no more.' (Strawson 1950: 332)

Notice that in this passage Strawson does not object to the uniqueness aspect of Russell's analysis *per se*; rather his point is to distinguish referring uniquely from asserting that a description applies uniquely.

Strawson does not address the problem of how determinate reference is secured in the case of incomplete descriptions, but many others have. One possibility that might suggest itself is that incomplete definite descriptions are always used referentially, in Donnellan's sense. If that were the case then an analysis such as that proposed by Burge and sketched above, for example, might solve this problem. However it has long been clear that this is not the case. Peacocke (1975: 209) proposes the case of "two school inspectors visiting an institution for the first time: one may say to the other, on the basis of the activities around him, 'the headmaster doesn't have much control over the pupils.'" . Here the description is clearly being used attributively in Donnellan's sense, although it is incomplete.

In Peacocke's example how to fill in the missing constituent (*the headmaster [of this school]*) is fairly straightforward. If all cases of attributively used incomplete descriptions were of this type (as was suggested by Wettstein 1981), then the problem of incomplete descriptions might again be solved. However Blackburn (1988) uses one of Donnellan's own examples to argue that this hope too is forlorn.

[I]n 'Reference and Definite Descriptions', Donnellan imagines a speaker at a Temperance Union meeting saying 'The man drinking a martini, whoever he is, is breaking the rules of our club'. This is a Russellian [*i.e.* attributive] use of an incomplete description. ... but...[t]he speaker may be unable to say whether he means 'the man *at this meeting* who is drinking a martini' or 'the man *in our club* who is drinking a martini', or 'the man *in this house* who is drinking a martini'. (Blackburn 1988: 276; emphasis in original.)

Blackburn suggests that a person using an incomplete definite description is actually tacitly alluding to a vague class of propositions determined by various ways of completing the

⁵ The distinction between complete and incomplete descriptions is similar to Löbner's (1985) distinction between semantic definites and pragmatic definites.

incomplete description, and what she says is true if all of these, or perhaps a “weighted majority” (271), are true.

Neale (1990), citing a number of predecessors including Sellars (1954), Sainsbury (1979) and Davies (1981), argues that the problem of incomplete descriptions is not confined to definite descriptions but is faced equally by (other) quantified NPs. Consider (11):

(11) Everyone was sick.

uttered by Neale in response to a question about how his dinner party the previous night had gone.

Clearly I do not mean to be asserting that everyone in existence was sick, just that everyone *at the dinner party I had last night* was. ... Similar examples can be constructed using ‘no’, ‘most’, ‘just one’, ‘exactly eight’, and, of course, ‘the’.... Indeed, the problem of incompleteness has nothing to do with the use of definite descriptions *per se*; it is a quite general fact about the use of quantifiers in natural language. (Neale 1990: 950; emphasis in original)

Neale’s main concern was to defend Russell’s quantificational analysis of definite descriptions and it sufficed for that end to argue that the incompleteness problem is general. In addition, however, following Sellars (1954) and Quine (1940), Neale supported an approach on which incomplete NPs are seen as elliptical for some fuller expression or expression content. There have been many variations on this theme: see Stanley & Szabó (2000) and the works cited there for examples. The main drawback has been discomfort at the fact that the elided content must often be indeterminate, for both speaker and addressee.

There are several other general lines of approach to the problem of incompleteness currently on offer. One very popular one is to shrink the domain of evaluation of the NPs in question, so that the descriptive content is satisfied uniquely as intended. Barwise & Perry (1983) speak in terms of RESOURCE SITUATIONS, Westerståhl (1985) introduces CONTEXT SETS, Hawkins (1984, 1991) invokes contextually supplied PRAGMATIC SETS or P-SETS, and Roberts (2000) postulates a concept of INFORMATIONAL UNIQUENESS, which is uniqueness relative to the discourse situation. (Cf. also Recanati 1996.) Stanley & Szabó (2000) propose indexing nominals with functions from discourse entities to restricted sets.

McCawley (1979) used example (12) to argue that the relevant domains of nominal interpretation must be structured in terms of prominence:

(12) Yesterday **the dog** got into a fight with **a dog**. **The dogs** were snarling and snapping at each other for half an hour. I’ll have to see to it that **the dog** doesn’t get near **that dog** again. [= McCawley 1979, ex. 21]

Lewis (1979), citing McCawley’s example, concluded: “The proper treatment of descriptions must be more like this: ‘the *F*’ denotes *x* if and only if *x* is the most **salient** *F* in the domain of discourse, according to some contextually determined salience ranking” (348; emphasis added); and he went on to argue that salience rankings could change in the course of a discourse. Finally, Bach (1994, 2000) has argued for a more thoroughly pragmatic approach, where the content that would make an NP literally accurate is viewed as a conversational IMPLICITURE (as opposed to implic-a-ture) – something between what is literally expressed and what is conversationally implicated in Grice’s sense (Grice 1975). (See also Bach 1987.) This problem is still the subject of discussion; in addition to the works cited above, see Soames (1986), Reimer (1998), Neale (2001), Taylor (2001), and see Bach (this volume).

3.3 The problem of “non-unique” definite descriptions.

A small group of problematic cases for Russell’s analysis needs to be distinguished from instances of incomplete descriptions as described and discussed above. These are singular definite descriptions which are used to refer to entities which are typically or always NOT the only entity to which the descriptive content of the NP applies, even in a restricted domain of evaluation. Consider the examples in (13):

- (13) a. Towards evening we came to the bank of a river. [from Christophersen 1939: 140]
b. The boy scribbled on the living-room wall. [= Du Bois 1980, ex. 86]
c. John was hit on the arm. [= Ojeda 1993, ex. 1]

Rivers always have two banks, rooms have more than one wall, and people have two arms, and there seems to be no reasonable way to reduce the context so as to exclude the other items falling under the description used without also excluding essential entities such as the river, the living-room, and John, in the examples given. As pointed out by Birner & Ward (1994), in each of these examples the definite description gives a location. In other types of sentences these NPs are infelicitous:

- (14) a. # The bank of the Thames is the personal property of the Queen.
b. # Mary painted the living room wall.

Why are definite descriptions used in sentences like (13)? Du Bois makes the interesting observation that in these cases, despite the nonuniqueness of potential referents, use of the indefinite article would be odd. Cf. (15):

- (15) # He scribbled on a living-room wall. [= Du Bois 1980, ex. 88]

Du Bois points out that (15) “gives the impression of being unnaturally precise” (Du Bois 1980: 233), and seems to carry the unwanted implication that the hearer might care which wall was being scribbled on.⁶

3. Familiarity

The chief competitor for the uniqueness approach to capturing the essence of definiteness has been an approach in terms of FAMILIARITY, or KNOWNNESS to use Bolinger’s term (Bolinger 1977). The locus classicus of this approach within the tradition of descriptive grammars is Christophersen 1939: “Now the speaker must always be supposed to know which individual he is thinking of; the interesting thing is that the *the*-form supposes that the hearer knows it too” (Christophersen 1939: 28). The concept of familiarity which Christophersen has in mind here seems quite similar to Prince (1992)’s concept of HEARER-OLD INFORMATION, which she aligns with the idea of information which is “in the permanent registry” (Kuno 1972), or “culturally copresent” (Clark and Marshall 1981). (Prince contrasts Hearer-old information with the narrower category of Discourse-old information, which includes only entities which have been mentioned in the previous discourse.) Prince notes that the category of definite NPs, defined in terms of form, correlates well with conveyers of Hearer-old information, but that the correlation is not perfect: some NPs which are definite in form can introduce entities not assumed to be

⁶ There are a few other types of non-unique definites. See Abbott 2001 for a fairly complete catalog, discussion, and further references.

known to the addressee at the time of the utterance. She gives the examples in (16) (= Prince 1992, ex. 5).

- (16) a. There were the same people at both conferences.
b. There was the usual crowd at the beach.⁷
c. There was the stupidest article on the reading list.

The role of existential sentences, like those in (16), as a diagnostic for indefiniteness will be explored below in §4.

3.1 Heim's approach and donkey sentences

The familiarity approach to definiteness received a major boost, especially among more formally inclined semanticists, with the appearance of Irene Heim's 1982 University of Massachusetts dissertation *The semantics of definite and indefinite noun phrases*. (See also Heim 1983.) A major concern of Heim's dissertation was a solution to the problem of what have come to be called DONKEY SENTENCES, after the example used by Peter Geach to introduce the problem to modern readers:

- (17) Any man who owns a donkey beats it. [= Geach 1962: 117, ex. 12]

A central aspect of the problem created by such sentences is the interpretation of the phrase *a donkey*. Ordinarily the logical form of sentences with indefinite NPs is given with an existential quantifier, as shown in (2a), repeated here:

- (2) A student arrived.
a. $x[\text{Student}(x) \ \& \ \text{Arrived}(x)]$

If we do that in this case, we would assign (17) the logical form in (17a):

- (17) a. $x[\text{Man}(x) \ \& \ y[\text{Donkey}(y) \ \& \ \text{Own}(x, y)] \ \rightarrow \ \text{Beat}(x, y)]$

But the final occurrence of the variable y escapes being bound by the existential quantifier in this formula, which thus expresses the thought 'Any man who owns a donkey beats something' – not the intended interpretation.

As noted by Geach, we can assign (17) the logical form in (17b), which seems to give us the right truth conditions.

- (17) b. $x \ y[[\text{Man}(x) \ \& \ \text{Donkey}(y) \ \& \ \text{Own}(x, y)] \ \rightarrow \ \text{Beat}(x, y)]$

However this is ad hoc. Furthermore the universal quantifier would not be appropriate in the case of (2): used there we would assign (2) the meaning 'Every student arrived', which is definitely not correct. But if we use sometimes an existential quantifier and sometimes a universal, we suggest an ambiguity in indefinite NPs which is not felt.

Heim's elegant solution to this problem involved a novel approach to semantic interpretation called FILE CHANGE SEMANTICS. Drawing on prior work by Karttunen (1969, 1976), Heim took mini-discourses like that in (18) as illustrating prototypical uses of indefinite and definite NPs:

- (18) A woman sat with a cat on her lap. She stroked the cat and it purred.

⁷ For some speakers this example may be ambiguous, meaning roughly 'there were the same people as usual at the beach' or 'the beach was crowded, as usual'. Prince (personal communication) says that she intended the latter of the two readings.

On this view a major function of indefinite NPs is to introduce new entities into the discourse, while definite NPs are used to refer to existing discourse entities. Heim analyzed both indefinite and definite NPs as nonquantificational; instead their interpretation involves only a variable, plus whatever descriptive content may reside in the remainder of the NP. Following Karttunen (cf. also du Bois 1980), Heim likened a discourse to the building up of a file, where the variables in question are seen as indexes on FILE CARDS representing discourse entities and containing information about them.

The difference between indefinite and definite NPs is expressed with Heim's NOVELTY and FAMILIARITY conditions, respectively. Indefinite NPs are required to introduce a new variable (corresponding to the act of getting out a new blank file card). On the other hand definite NPs are required to be interpreted with a variable which has already been introduced, and (in the case of a definite description as opposed to a pronoun) whose corresponding file card contains a description congruent with that used in the definite NP. This explicates the idea that definite NPs presuppose existence of a referent, together with the idea that presuppositions are best seen as background information or the common ground assumed in a discourse (cf. Stalnaker 1974, 1978; cf. Abbott 2000 for a contrary view).

On this approach an example like (2) (*A student arrived*) would receive an interpretation as in (2d):

(2) d. Student(x) & Arrived(x)

The existential quantification needed for this example is introduced by a general discourse level rule, requiring that file cards match up with actual entities for the discourse to be true. However if indefinite NPs fall within the scope of a quantified NP, as happens in donkey sentences, the variable they introduce is automatically bound by that dominating NP's quantifier. Thus Heim's File Change Semantics yields an interpretation for (17) which is equivalent to that in (17b), but without requiring two different interpretations for indefinite NPs.⁸

3.3 Unfamiliar definites & accommodation

The familiarity approach to the definiteness-indefiniteness contrast seems to imply that any definite description must denote an entity which has been explicitly introduced into the discourse context or is common knowledge between speaker and addressee, but of course that is not always the case. Consider *her lap* in (17) (assumed to be a definite description). This possessive denotes an entity which has not been specifically introduced.

Heim's solution for this kind of case relied on a principle introduced in David Lewis's classic paper "Scorekeeping in a language game" (Lewis 1979). In this paper Lewis compared the process of a conversation to a baseball game. One major DISanalogy is the fact that, while the score in a baseball game can only be changed by events on the field, the "conversational scoreboard" frequently undergoes adjustment just because the speaker behaves as though a

⁸ Unfortunately this elegant solution to the donkey sentence problem eventually ran afoul of several problems, and Heim herself abandoned it in Heim 1990. The donkey sentence problem continues to attract a stream of contributions to the literature while resisting satisfactory solution: cf. e.g. Kadmon (1990), Kanazawa (1994), Chierchia (1995), Lappin & Francez (1996), Dekker (1996).

change has been made. The relevant principle in this case is Lewis's RULE OF ACCOMMODATION FOR PRESUPPOSITIONS:

If at time *t* something is said that requires presupposition *P* to be acceptable, and if *P* is not presupposed just before *t*, then – *ceteris paribus* and within certain limits – presupposition *P* comes into existence at *t*. (Lewis 1979: 340)

As stated, and without cashing out the *ceteris paribus* clause, Lewis's rule of accommodation is extremely strong – strong enough to make familiarity virtually vacuous as a theory of definiteness (cf. Abbott 2000). Heim sought to rein in its power with a condition that accommodated entities be linked to existing discourse entities, in a move which explicitly recalled the phenomenon of BRIDGING (Clark 1977). The idea is that when entities have been explicitly introduced into a discourse, addressees will automatically make assumptions about entities associated with them, following our knowledge of the properties and relations things in a given category typically have. In the case of *her lap* in example (18), the link is obvious – once a seated person has been introduced, the existence of their lap may be inferred.

Despite the addition of a constrained accommodation rule, there remain difficult cases for the familiarity approach. Descriptions whose semantic content entails a unique referent, like those in (19), require the definite article, and this is difficult for familiarity views to account for.

- (19) a. Harold bought the/#a first house he looked at.
b. The instructor assigned the/#some most difficult exercises she could find.
c. In her talk, Baldwin introduced the/#a notion that syntactic structure is derivable from pragmatic principles. [= Birner & Ward 1994, ex. 1a]

There are other examples where the referent of a definite description does not seem to be assumed to be familiar to the addressee, salient in the context, or otherwise already accessible in the discourse. Examples like those in (19) and (20) are sometimes called CATAPHORIC, since the uniquely identifying information follows the definite article.

- (20) a. What's wrong with Bill? Oh, the woman he went out with last night was nasty to him. [= Hawkins 1978, ex. 3.16]
b. If you're going into the bedroom, would you mind bringing back the big bag of potato chips that I left on the bed? [= Birner & Ward 1994, ex. 1b]
c. Mary's gone for a spin in the car she just bought. [= Lyons 1999, ex. 18, p. 8]

One could argue that these are simply cases of accommodation, and point out that in each case the intended referent bears some relation to an entity which has already been introduced into the discourse context, but nevertheless they seem contrary to at least the spirit of the familiarity type of approach.

3.3 Attempts at a synthesis

In a sense the uniqueness and familiarity theories of definiteness are odd foes. Uniqueness of applicability of the descriptive content, as explicated in Russell's analysis, is a strictly semantic property while the assumption of familiarity to the addressee is discourse-pragmatic in nature. A priori one might have supposed the two to be complementary rather than at odds, and indeed, there have been attempts to derive each from the other. Accepting both as correct in some sense, the idea of deriving familiarity from uniqueness is likely to strike one first since we generally suppose semantic properties to be arbitrary and pragmatic ones to be natural (if not inevitable)

consequences of semantic facts plus the exigencies of the conversational situation. This was the approach sketched in e.g. Hawkins (1984) and Abbott (1999). However, with the development of “dynamic” theories like Heim’s that embed sentence semantics into analyses of discourse, this old distinction becomes blurred. Heim raised familiarity to a principle of semantics, making it possible to suggest instead that the uniqueness requirement could be derived from it (cf. Heim 1982: 234ff.). Szabó (2000) and Roberts (2000) have also taken this approach to unification.

Just as some have assumed that both uniqueness and familiarity are correct, others have argued in effect that neither is. Birner & Ward (1994) present problematic examples for both approaches, some of which have been cited above, and conclude that neither gives a correct account of definite descriptions. Lyons (1999), too, reviews existing theories in both camps and concludes that neither is synchronically correct.

Examples like those in (19) and (20) have led other authors to abandon familiarity (which implies prior acquaintance) in favor of a concept of IDENTIFIABILITY. The idea is that use of the definite conveys to the addressee that they ought to be able to determine a unique referent from the description used plus contextual or background information, whether or not they had prior acquaintance with it. Birner & Ward 1998 point out that the term ‘identify’ suggests that an addressee is able to pick the referent out in the world at large. They argue instead that what is required for felicitous use of the definite article (and most uses of other definites) is that the speaker must believe that the hearer is able to *individuate* the referent in question from all others within the discourse model. (Birner & Ward 1998: 122; italics in original.)

This is an idea which many have found attractive.

On the other hand Lyons (1999) argues that definiteness is a GRAMMATICALIZED category: that originally definite NPs were understood to denote identifiable entities, but as a consequence of the category’s becoming grammaticalized have acquired other uses. This is another way to attempt a synthesis between these two approaches, although there is a drawback in loss of ready formalizability.

Yet another way is to give up the idea that there is one particular property which applies in equal strength to all and only definite NPs. Bolinger (1977) suggested two moves in this direction. One is to distinguish grammatical definiteness from semantic definiteness (cf. also the remarks of Prince 1992 with respect to examples like (16) above). The other is to assert that definiteness, which Bolinger equates with “knownness”, is a matter of degree. Bolinger distinguished five subcategories, from third person anaphoric pronouns (the most definite), through proper names, anaphoric NPs, cataphoric NPs, to the “indefinite superlative” as in Prince’s example (16c) above. It could be argued that the last category is not semantically definite at all, and similar remarks would go for the “indefinite *this*” (Prince 1981) as in (21)

(21) There is this huge boulder sitting in the driveway.

Bolinger’s graded concept of “knownness” may lie behind the intuitive ranking in Table 1. above.

Others have also proposed a graded account. In the approach of Mira Ariel (Ariel 1988, 1990) the form of referential NPs marks the ACCESSIBILITY of their referent, where Accessibility in turn is a function of such factors as distance between antecedent and anaphor, competition with other potential referents, and salience, which is primarily determined by topichood. Third person pronouns and gaps are markers of a high level of Accessibility, demonstrative pronouns encode an intermediate level, and definite descriptions and proper names mark low Accessibility.

Similarly Gundel, Hedberg and Zacharski (1993) group NP types along an implicational hierarchy based on COGNITIVE STATUS – roughly, the degree to which an NP’s referent is assumed to be known to the addressee. Their GIVENNESS HIERARCHY is given below.

(22) The Givenness Hierarchy [= Gundel et al. 1993, ex. 1]:

In focus >	Activated >	Familiar >	Uniquely > identifiable	Referential >	Type identifiable
<i>it</i>	<i>that</i> <i>this</i> <i>this</i> N	<i>that</i> N	<i>the</i> N	indefinite <i>this</i> N	<i>a</i> N

Each status requires a certain degree of givenness as a minimal condition of use, with the weakest degree being TYPE IDENTIFIABILITY – i.e. familiarity with the category named by the noun (or common noun phrase) in question. Items to the left must meet that condition but also have additional requirements. Hence phrases to the right may be used in circumstances suitable for more highly ranked items, but Gricean conversational implicatures (Grice 1975) result from failure to use the most highly ranked item allowed in the context.

A problem with this type of approach, on which NP forms are held to **encode** degrees of accessibility, is that it fails to recognize plausible **explanations** for the correlations between NP type and degree of accessibility – e.g. the more accessible a referent is, the less the descriptive information which needs to be included in the NP. See Bach (this volume, n. 36), and Abbott (2001, n. 2).

We turn now to two other semantic properties whose history is entwined with the definiteness-indefiniteness issue.

4. Existential sentences and the weak/strong distinction

In the early days of transformational grammar, the contrast shown in (23) attracted attention.⁹

- (23) a. There is a wolf at the door. [= Milsark 1977, ex. 5a]
 b. * There is the wolf at the door. [= Milsark 1977, ex. 5b]

Sentences like (23a) are called EXISTENTIAL or *There*-insertion sentences. The initial diagnosis pointed to an unidentified problem with definite NPs in such sentences, and the term DEFINITENESS RESTRICTION or DEFINITENESS EFFECT came into common usage to reference this problem.

4.1 Milsark’s analysis

Milsark (1974, 1977) provided the first thorough attempt within the Chomskyan linguistic tradition to find an explanatory analysis of the constraint just cited. He pointed out that the diagnostic of felicitous occurrence in an existential sentence served to categorize NPs in general, as seen in (24).

⁹ I have asterisked (23b), as was customary at the time, although many would assume that this example is infelicitous rather than downright ungrammatical. (Cf. the discussion of Barwise & Cooper 1981, below.) The issue is complex: see Abbott 1993 and the works cited there for discussion.

- (24) a. There are some/several/many/few wolves at the door.
 b. * There are most/all/those/Betty's wolves at the door.

Noting a problem in extending the traditional terms “indefinite” and “definite” to other determiners, Milsark coined the terms WEAK and STRONG for those NPs which do and do not fit easily in existentials, respectively. The weak NPs, also termed CARDINAL, are those with determiners like *a/an, some, several, many*, and the “number determiners” (*one, two, three, ...*), The strong NPs are those traditionally called “definite”, i.e. definite descriptions, demonstratives, possessives, and pronouns, as well as NPs determined by universal quantifiers (*all, every, each*) or by *most*. Milsark's explanation for the “definiteness effect” was that (a) all of the strong determiners involve a quantificational element (hence the alternate term QUANTIFICATIONAL for the strong determiners) and (b) this quantificational element is incompatible with the existential quantification expressed by *there be*.

One subtle complication was observed by Milsark: his weak determiners in fact have two distinct uses – a weak one and a strong one. Compare the examples in (25) and (26).

- (25) a. I would like some (“sm”) applesauce. [from Postal 1966: 204, n. 7]
 b. There weren't many students in class this morning.
 (26) a. Some (of the) participants preferred to wait outside.
 b. Many (of the) students objected to their grades after class.

It is a characteristic of weak determiners that, on their weak reading, they cannot occur with predications of relatively permanent properties – INDIVIDUAL LEVEL properties in the sense of Carlson (1977). However the strong senses of weak determiners can occur in such predications.

- (27) a. * Sm salesmen are intelligent.
 b. Some (of the) salesmen (but not others) are intelligent.

Carlson (1977) pointed out that the distinction in predication between individual level properties and relatively ephemeral STAGE LEVEL properties correlates with an even more dramatic difference in interpretation in “bare” NPs—NPs with plurals or mass nouns as head and no overt determiner:

- (28) a. Salesmen are intelligent.
 b. Salesmen are knocking on the door.

(28a), with an individual level predicate, can only mean that salesmen in general are intelligent. This is a quasi-universal reading. On the other hand (28b) means that some particular salesmen are knocking on the door, an existential interpretation. Correspondingly in existential sentences bare NPs have only their existential readings, and weak NPs do not have a felicitous strong reading.

- (29) a. There are salesmen {knocking on the door/*intelligent}.
 b. * There were some (of the) participants waiting outside.

(It should be noted, though, that (29a), with *intelligent*, is much worse than (29b), even on the strong partitive reading, and that some may in fact find the latter quite acceptable.)

Although Milsark appeared to have proposed an elegant solution to the problem of the definiteness effect in existential sentences, it is not without problems. On the one hand proper names, which are intuitively definite and pass Milsark's two tests for strength (infelicitous occurrence in existentials and ability to take individual-level predication) have traditionally been interpreted as logical constants, NOT quantificational expressions. On the other hand with the

appearance of Barwise & Cooper 1981, following Montague (1973), it became customary in some quarters to view ALL NPs as quantificational, more specifically as GENERALIZED QUANTIFIERS, or expressions denoting sets of sets. This development obliterates Milsark's tidy distinction as well as his explanation for the definiteness effect.

4.2 Barwise & Cooper's generalized quantifier approach

Consider a simple sentence structure as in (30)

- (30) a. Det As are Bs.
b. Some/all/most activities are brainless.

On the generalized quantifier approach determiners are viewed as expressing relations between two sets – the one denoted by the common noun phrase (CNP) with which the determiner combines (the “A” set in (30a)) and the one denoted by the verb phrase (the “B” set). An equivalent alternative way of viewing determiners is as functions from sets (the CNP or “A” set) to sets of sets, the generalized quantifier interpretation of NPs. (NPs consisting of just a proper name also denote a set of sets.) The resulting set of sets is equivalent to another function taking sets (the VP, or “B” set) as argument and returning a truth value. Since quantified NPs and proper names appear in exactly the same kind of syntactic contexts, strict compositionality demands that they receive the same type of interpretation, and this was Montague's main motivation in instituting generalized quantifiers. This was in marked contrast to the traditional logical treatment, following Russell, where (as noted above) quantified NPs are not even interpreted as constituents.

Barwise & Cooper (1981) developed many consequences for the generalized quantifier approach to natural language, among them the weak/strong distinction. Barwise & Cooper borrowed Milsark's terms “weak” and “strong”, but gave these terms their own formal definition. On this definition it turns out that the strong determiners are those for which sentences of the form *Det CNP exist(s)* is either a tautology or a contradiction in every world in which the sentence has a truth value. Consider the examples in (31):

- (31) a. Every unicorn exists.
b. Neither unicorn exists.

(31a) is vacuously true in the actual world, since there are no unicorns. It is also trivially true in any world in which there are unicorns. Thus *Every* is a (positive) strong determiner. (31b), according to Barwise & Cooper, presupposes the existence of exactly two unicorns and so is undefined in the actual world. In any world in which this presupposition is satisfied, (31b) is false. *Neither* is (negative) strong. On the other hand (31c), with the weak determiner *many*,

- (31) c. Many unicorns exist.

is false in the actual world, but would be true in a possible world in which there were many unicorns. (Barwise & Cooper did not distinguish strong readings of weak NPs, in effect treating them as totally weak.)

If we accept Barwise & Cooper's assumptions, the explanation for the infelicity of strong NPs in existential sentences follows naturally. Existential sentences such as those in (32) (I follow Barwise & Cooper in assuming now that (32a, b) are infelicitous rather than ungrammatical)

- (32) a. # There is every unicorn.

- b. # There is neither unicorn.
- c. There are many unicorns.

assert propositions equivalent to those in (31) – namely they assert existence of a denotation for the post verbal NP. With a strong determiner this assertion, if defined, is either tautological ((32a)) or contradictory ((32b)). Only with a weak determiner does an existential express something interesting.¹⁰

Although the Barwise & Cooper diagnosis of the definiteness effect in existential sentences has a lot of appeal there are problems of a variety of sorts. First, it is necessary to their analysis that whatever follows *be* in an existential (what Milsark referred to as the CODA of an existential¹¹) is a constituent, and in fact an NP. As they themselves noted, there are examples for which this analysis is implausible at best. (33a) is a fine existential, but (33b) argues that the coda is not an NP.

- (33) a. There is a girl who knows you interested in this problem. [= Barwise & Cooper 1981, ex. 5b., p. 206]
- b. *I met a girl who knows you interested in this problem. [= Barwise & Cooper 1981, ex. 5a, p. 206]

Secondly, as Keenan (1987) has pointed out, while Barwise & Cooper’s coverage of the data is adequate for the determiners they consider, there are others which they would classify wrongly. *Either zero or else more than zero*, for example, would be classified on Barwise & Cooper’s account as positive strong, but it can occur felicitously in an existential:

- (34) Look, there were either zero or else more than zero students there at the time. Now which is it? [= Keenan 1987, ex. 48a]

Finally, Keenan points out that Barwise & Cooper have no account for the difference in grammaticality or felicity in (35)

- (35) a. Every student exists.
b. There is every student.

since the two sentence types are equivalent in their analysis.

4.3 Keenan’s analysis

In his analysis of existential sentences Keenan breaks up the coda into two constituents – the postverbal NP and an additional phrase which can be of a variety of predicational types. Keenan

¹⁰ Like Milsark, Barwise & Cooper distinguished the categories weak/strong from indefinite/definite, but unlike Milsark they proposed a definition of definiteness, one which was motivated by an assumption that occurrence as the embedded NP in a partitive was a good diagnostic for definiteness. Definites on their definition are necessarily proper principle filters: this includes definite descriptions, proper names, and (presumably) demonstrative NPs (which Barwise & Cooper did not analyze). However universally quantified NPs had to be excluded on a somewhat ad hoc basis: if we assume they are presuppositional (see below), there would be no way to exclude them. On the other hand partitivity has been argued not to be a good diagnostic for definiteness anyway. See Ladusaw (1994), Abbott (1996), and Barker (1998) for discussion.

¹¹ ‘Let us define the word coda to mean any and all material to the right of *be* in ES [existential sentences]...’ (Milsark 1974: 8).

defines a subcategory of NP which he calls EXISTENTIAL, intended to capture those NPs which fit naturally in the postverbal position in an existential sentence. Ignoring the formal details, the definition applies to those for which the equivalence in (36) holds:

(36) Det As are Bs if and only if Det As who are Bs exist.

The fact that (37a) is equivalent to (37b), but (38a, b) differ, correctly classifies *some* as existential and *every* as not existential.

(37) a. Some student is a vegetarian.

b. Some student who is a vegetarian exists.

(38) a. Every student is a vegetarian.

b. Every student who is a vegetarian exists.

Keenan's explanation for the definiteness effect in existentials, then, is that it is only with existential NPs that existential sentences express a predication equivalent to the "exists" sentence.

Keenan notes in a footnote (317, n. 1) that the property of being an existential NP as defined in (36) roughly coincides with two other semantic properties of determiners: SYMMETRY and INTERSECTIVITY, defined respectively in (39).

(39) a. Det As are Bs if and only if Det Bs are As. [symmetry]

b. Det As are Bs if and only if Det As who are Bs are Bs. [intersectivity]

As Keenan's article is titled "A semantic definition of 'indefinite NP'", presumably in his view all three definitions converge on this property. Speaking loosely it is the property of having truth conditions depend solely on the intersection of the set denoted by the CNP with which the determiner combines (the "A" set in (36) and (39)) and the set denoted by the predicate (the "B" set). The non-existential NPs require that something additional hold of the CNP denotation.

4.4 De Jong & Verkuyl and presuppositionality

De Jong & Verkuyl (1985) have another criticism of the Barwise & Cooper approach. Recall that Barwise & Cooper treated *every* and *neither* differently. For them, *every CNP* is always defined – in other words it does not presuppose the existence of entities in the denotation of CNP. A consequence is that a sentence of the form *All A's are B's* where *A* denotes the empty set, will be true no matter what *B* denotes. Under these circumstances *All A's* (e.g. *all unicorns*) is an IMPROPER generalized quantifier. Informally this means that it does not sort predicates into two nonempty classes – those which are true of the subject and those which are not. Instead the sentence is vacuously true for all predicates. On the other hand *neither CNP* does require a presupposition that the universe of discourse contain exactly two referents for the CNP, and is undefined when that is not the case, so *neither CNP* is always PROPER (some predicates will be true of it and some false).

De Jong & Verkuyl argue that Barwise & Cooper's decision on which determiners to treat as presuppositional and which to treat as nonpresuppositional is arbitrary. De Jong & Verkuyl argue in particular that the universal quantifiers, which Barwise & Cooper analyzed as NONpresuppositional, are in fact presuppositional (and hence always proper). With this modification de Jong & Verkuyl can argue that strength consists in properness or presuppositionality.

There is much intuitive appeal in this approach. It also suggests a natural explanation for the “definiteness” effect in existential sentences which is slightly different from those proposed by Barwise & Cooper and by Keenan. If we assume, with most researchers, that existential sentences assert existence, then we might attribute the infelicity of a strong NP, or a weak NP on its strong reading, to a conflict between the assertion of existence of the *there be* construction and the presupposition of existence which constitutes the strength of a strong NP. This is an explanation which many have found appealing; cf. e.g. Woisetschlaeger (1983), de Jong & Verkuyl (1985), de Jong (1987), Lakoff (1987), Lumsden (1988), Abbott (1993).¹²

So, should we conclude from this that presuppositionality – the assumption, rather than assertion, of existence of a certain set of entities denoted by the NP – is a candidate for the essence of definiteness? There are two problems in so doing. One is the cases noted above which are problematic for the familiarity approach to definiteness. If presuppositionality is understood as a prior condition on the context of utterance, then examples like those in (18) and (19) present a problem for this presuppositionality hypothesis.¹³ The other problem is NPs which everyone would regard as indefinite, but which have uses which are strong or presuppositional. Recall that Milsark had pointed out strong uses of weak NPs, which do not occur felicitously in existential sentences (e.g. the difference between *sm apples* and *some (of the) apples*). Diesing (1992), Horn (1997), and others have argued that the crucial difference is exactly that the strongly used weak NPs presuppose the existence of their referents, yet these weak NPs (e.g. *some (of the) apples*) must still be regarded as indefinite in the traditional sense. Furthermore in Horn’s view presuppositionality bifurcates tokens of universally quantified NPs: while ordinary examples like that in (40a) presuppose a nonempty extension for the CNP, those in law-like statements such as (40b) are nonpresuppositional.

- (40) a. All of John’s children are bald.
b. All trespassers will be prosecuted. [= Horn 1997, ex. 39a]

We will return to this issue below, in the section on the specific/nonspecific distinction.¹⁴

To summarize this section, it seems clear that the weak-strong distinction must be distinguished from the definite-indefinite distinction. The confounding of the two is probably a natural consequence of the early hasty identification of the class of NPs which are infelicitous in existential sentences as “definite”, and the label for their infelicity as the “definiteness effect”, which Milsark’s careful coining of the terms “strong” and “weak” was not able to avert entirely.

¹² I am glossing over a number of difficult details in this brief summary. In particular, the relevant notion of existence should be discourse, rather than real world, existence; note that the contrast in (35) suggests that it is a different notion from the presumably real world one expressed by the verb *exist*.

¹³ If presuppositions are regarded as nonassertions, as argued in Abbott 2000, then this problem would not arise. Cf. also Bach (1999), Horn (2000).

¹⁴ This discussion glosses over a possible distinction in presupposition types. A singular definite description like *the solution to the problem* presupposes not just that the set of solutions to the problem is nonempty but in addition that there is only one. For NPs like *all/some/several solutions* a mere presupposition of nonemptiness of the set of solutions is tantamount to guaranteeing a referent for the NP.

5. Specificity

The discussion above touched on an ambiguity remarked by Milsark between weak and strong uses of weak NPs. This ambiguity is reminiscent of one noted by a number of linguists (Fillmore 1967, Karttunen 1969, Partee 1972), and described in the early days of transformational grammar as the SPECIFIC-NONSPECIFIC distinction. However there are indications that the two must be distinguished.

Observe the examples in (41), among the earliest used to introduce this distinction into the linguistics literature:

(41) a. I talked with a logician. [= Karttunen 1969b, ch. 1, ex. 20a]

b. Some of my friends speak French. [= Fillmore 1967, ex. 53]

Karttunen described (41a) as saying, on the specific reading, something about WHO the speaker talked with, but on the nonspecific reading only something about the KIND of person the speaker talked with. Similarly Fillmore noted that (41b) could be used to say of certain specific friends of mine that they speak French (the specific reading), or merely to assert that I have French-speaking friends (the nonspecific reading).

Fillmore's description corresponds strikingly to a classic distinction which has recently been revived between CATEGORICAL and THETIC statements, respectively. Roughly speaking categorical statements have a topic and express a thought about that topic – categorize it, much as Fillmore describes the specific reading of (41b). On the other handthetic statements present a state of affairs as a whole, just as the nonspecific reading of (41b) is described. While the usually cited founders of the categorical-thetic distinction are Brentano and his student Marty; the recent revival is due especially to Kuroda (1972), who sought to use this distinction to help explain the distinction in use between *wa* and *ga* in Japanese. (See also Ladusaw 1994, Horn 1997, and the works cited there.)

This ambiguity seems similar to the strong-weak ambiguity but there are several problems in making the identification. Note for one thing that Fillmore's example uses a partitive NP. Milsark used the partitive form to DISambiguate his examples, in favor of the strong reading, and de Hoop (1991, 1996), Enç (1991), Diesing (1992), and others have suggested that the strong readings are in some sense partitive in nature. Furthermore the predicate in Fillmore's example (*speak French*) is an individual-level rather than a stage-level property and this, according to Milsark, should require the subject to have a strong reading. Karttunen's example is problematic too – indefinite NPs with determiner *a/an* are supposed to be totally weak in Milsark's sense, i.e. not to allow a strong reading at all (see Ladusaw 1994).¹⁵

The literature in this area is filled with differences in terminology which may or may not correspond to differences in data. Thus Fodor & Sag (1982), citing Chastain (1975) and Wilson (1978), argued that indefinites have a REFERENTIAL reading in addition to their QUANTIFICATIONAL one, illustrating the distinction with (42).

¹⁵Horn (1997) assimilates Milsark's strength to presuppositionality and categoricity. If this is correct, and if, as suggested here, strength is different from traditional specificity, then we cannot align the traditional specific-nonspecific distinction with the categorical-thetic distinction.

(42) A student in the syntax class cheated on the final exam. [= Fodor & Sag 1982, ex. 1]

They describe the difference in readings as follows:

...someone who utters [42] might be intending to assert merely that the set of students in the syntax class who cheated on the final exam is not empty; or he might be intending to assert of some particular student, whom he does not identify, that this student cheated. (Fodor & Sag 1982: 356)

This description is very similar to those given by Fillmore and Karttunen, as well as Milsark, but the difference in terminology: for Milsark, “quantificational” means “strong”—specific in some sense; for Fodor & Sag “quantificational” here means NON-specific. Fodor & Sag gave new syntactic arguments for their referential reading; see King 1988 and Ludlow & Neale 1991 for replies.

Haspelmath (1997) distinguishes nine distinct functions of indefinite pronouns. Most of these are confined to particular constructions or context types not at issue here. However three of his functions are relevant, two of which he calls “specific” and one “nonspecific”. The difference between the two “specific” functions cited by Haspelmath is whether or not the referent of the indefinite is known to the speaker. Now a common description of what is distinctive about the traditional specific-nonspecific distinction is that it hangs on whether or not the speaker has a particular individual in mind.¹⁶ That being the case, we might identify this feature as crucial for the traditional concept, as a way of distinguishing it from Milsark’s concept of strength.

The traditional specific-nonspecific distinction in indefinite NPs is quite parallel to the referential-attributive distinction in definite NPs discussed above in §3.2. Compare Fodor & Sag’s example (42) with Donnellan’s famous example, repeated here as (43):

(43) Smith’s murderer is insane.

Uttered referentially (43) makes a statement about a particular person who is assumed to be the murderer. On the attributive use, on the other hand, a general statement is made.

Both the specific-nonspecific distinction and the referential-attributive distinction must be distinguished from the various scope ambiguities that arise with NPs in clauses which are embedded under sentence operators such as modals, propositional attitude verbs, or other quantificational NPs. None of the sentences used above to illustrate these distinctions have had operators of this type. It should be noted, though, that the distinction in type of reading is very similar, as noted by Partee (1972). Thus (44)

(44) John would like to marry a girl his parents don’t approve of. [= Partee 1972, ex. 1] has the traditional scope ambiguity. On the reading where the NP *a girl...* has wide scope with respect to the matrix clause, John has his girl picked out and it happens to be the case that his parents don’t like her. On the reading where the NP *a girl...* has narrow scope, John apparently wants to offend his parents by finding someone they disapprove of to marry. Clearly on the former reading the interpretation is more specific than on the latter.

¹⁶ Cf. e.g. Quirk et al.: “...the reference is SPECIFIC, since we have in mind particular specimens...” (265).

Partee points out that (45a) seems to have the same kind of ambiguity, and (45b) is not very different from (45a).

(45) a. John succeeded in marrying a girl his parents don't approve of. [= Partee 1972, ex. 12]

b. John married a girl his parents don't approve of. [= Partee 1972, ex. 8]

However one important difference between the embedded vs. the unembedded cases is whether the two interpretations can differ in truth value. In the case of sentences with sentence operators and indubitable scope ambiguities, like (44), there clearly is a difference in truth conditions: either of the two readings might be true in some circumstance without the other reading being true.

However in the case of (45b) this is less clear. Which brings us to the question of how best to analyze the specific-nonspecific distinction.

As with the referential-attributive distinction for definite NPs, the main issue in analyzing the specific-nonspecific contrast is whether it should be regarded as semantic or pragmatic.

Ludlow and Neale (1991) have argued most strongly that this distinction is a pragmatic one, just as in their view the referential-attributive distinction is pragmatic. Their analysis is similar to the one argued for by Kripke and sketched above in §2.2, namely, that there is a single set of truth conditions for sentences like (45b), and the difference in construals consists only in whether the speaker has a particular individual in mind or not.

Those who believe the distinction to be semantic have the problem of providing an interpretation for the specific reading, assuming Russell's analysis is correct for the nonspecific reading. Consider the following slightly modified version of Karttunen's example (41a):

(46) Mary talked to a logician.

For the specific reading what is needed is a particular logician for the sentence to be about. The problem is how to determine this individual. A natural suggestion is to let that be determined by the speaker's intention, as in the analyses of Kasher & Gabbay (1976) and Fodor & Sag (1982). However then we would have to say (46) was false on the specific understanding if Mary did talk to a logician, but not the one the speaker had in mind.

This result seems to be a strong argument against this type of analysis. However Dekker (1998) has put forward something of a compromise position. In Dekker's approach, utterances may be enriched by the addition of contextual information, and this is how the specific reading of indefinites, as well as the referential reading of definites, is obtained. More specifically, following an utterance of (46), if there is contextually available information that the speaker had intended to be talking about Mary's conversation with, say, Carnap, then the information that the logician in question was Carnap would be added, deriving the specific construal of (46). This contextually available information is what "licenses" specific utterances. Dekker notes that a sentence like (46) would be true as long as Mary had spoken with some logician or other, but it would not be true "as licensed".¹⁷

¹⁷ Another possible direction which may warrant pursuing is to regard the semantic values of specific indefinites (as well as referential definites) as constant individual concepts. This idea is similar to one suggested by Dahl (1988), as well as Abbott (1994).

6. Concluding remarks

We have examined a number of distinctions and attempts to characterize them with varying degrees of formality: uniqueness vs. nonuniqueness, familiarity vs. novelty, strength vs. weakness, specificity vs. nonspecificity. Each has a foundation in intuition, as well as some degree of grammatical effect. However it is not clear that any of them corresponds cleanly to formal categories. As so frequently seems to be the case, grammar is willfully resistant to attempts at tidy categorization.

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