41. Definiteness and indefiniteness

1. What makes definites definite and indefinites indefinite?
2. Scopal properties of definites and indefinites
3. References

Abstract

Our subject matter are the meanings of the definite and indefinite articles, or of the abstract features that these morphemes realize. The main goal of the article is to elucidate and test the best known approach to the definite-indefinite contrast in contemporary formal semantics: a Fregean semantics for definites and an existential (Russellian) semantics of indefinites. This approach posits differences between definites and indefinites along three dimensions: semantic type, uniqueness, and presuppositionality. We review some successful predictions that this familiar picture makes in combination with plausible accounts of various independent semantic and pragmatic mechanisms, such as grammatical number, covert domain restriction, scalar implicature, genericity operators, binding of situation variables, and charitable communication. We will also encounter some reasons to entertain departures from the standard semantics, for example, reasons to loosen the connection of presuppositionality with definiteness, and reasons to distinguish indefinites from the existential quantification that accompanies them.

The study of definiteness begins with the working hypothesis that the definite and indefinite articles in English correspond transparently to two primitive building blocks of linguistic structure with fixed and distinct meanings. As the inquiry proceeds, of course, we are prepared to find a less than perfect match between article morphology and the underlying semantic features that it realizes. But we will start with minimal pairs containing the and a to get off the ground. In the first section of the article, we will mostly examine semantic and pragmatic contrasts between simple sentences with definites and indefinites. The second section turns
to scopal properties of definites and indefinites in complex sentences, with an eye to learning more about their internal semantics from their compositional interactions. The main goal of the article is to explain, motivate, and push the limits of a classical analysis, based on Frege and Russell with conservative extensions. Discussion will touch on guiding ideas behind some alternative approaches, but for reasons of space, these cannot be reviewed explicitly. For complementary or competing viewpoints, see especially Articles 4 (Abbott) Reference, 42 (von Heusinger) Specificity, 44 (Dayal) Bare Noun Phrases, 47 (Carlson) Genericity, and 75 (Geurts) Accessibility and Anaphora.

1. What makes definites definite and indefinites indefinite?

1.1. Russell and Frege

Russell (1905) argued that the book and a book do not refer to individuals any more than every book or no book. All such phrases express quantificational statements. Implemented in modern compositional semantics, this means that the definite and indefinite articles, along with quantifiers such as every and no, denote functions of type <et,<et,t>>.

\[
\begin{align*}
(1) & \quad \llbracket \text{the} \rrbracket = \lambda P. \lambda Q. \exists x[\forall y[P(y) \leftrightarrow x = y] \land Q(x)] \\
& \quad \llbracket a \rrbracket = \lambda P. \lambda Q. \exists x[P(x) \land Q(x)]
\end{align*}
\]

Simple clauses with definite and indefinite phrases thus have the following truth conditions. (2a) is true if there is exactly one book and this book arrived; it is false otherwise (if there are no books or multiple books or if the unique book there is did not arrive). (2b) is true if there is at least one book that arrived, and false otherwise (if no book arrived).

\[
\begin{align*}
(2) & \quad \text{a. The book arrived.} \\
& \quad \text{b. A book arrived.}
\end{align*}
\]
For Russell, the difference between definites and indefinites is a difference in truth conditions. Substituting the for a leads to a stronger assertion. (2a) entails (2b), but not vice versa. (2a) makes the additional claim that there is only one book.

Frege (1892) and Strawson (1950) argued that what the definite expresses over and above the indefinite is not so much an additional assertion but a presupposition. A speaker who asserts (2a) presupposes there to be a unique book. If there is not, the question of whether he speaks truly or falsely is beside the point. One can implement this by having the denote a partial function (notation from Heim & Kratzer 1998).

\[
(3) \quad [[\text{the}]] = \lambda P: \exists x \forall y [P(y) \leftrightarrow x = y]. \lambda Q. \exists x [P(x) & Q(x)]
\]

Given (3), (2a) is true if there is exactly one book and it arrived, false if there is exactly one book and it didn’t arrive, and without truth value otherwise (if there are no or multiple books).

Evidence for the presuppositional status of existence and uniqueness comes from the usual tests for presupposition, particularly their characteristic patterns of projection from embedded contexts (cf. article 91 (Beaver&Geurts) Presupposition). To the extent that lexically triggered presuppositions are thought to exist at all, the definite article is uncontroversially a prime candidate. I will assume without discussion that (3) is the more accurate of the two entries for the we have seen so far.

(1a), (1b) and (3) all give a and the the semantic type of a quantificational determiner, as is done wherever determiner phrases (DPs) are treated uniformly as generalized quantifiers. But only for the indefinite and the Russelian definite is this high type required. The Fregean truth conditions can be captured also if definite DPs denote entities of type e. (3) can be replaced by (4), which is more faithful to Frege.
(4) \[[the]\] = \lambda P: \exists x \forall y [P(y) \iff x = y]. \iota x. P(x)

(“\iota x.” abbreviates “the unique x such that”.) Fregean definites then differ from indefinites in semantic type as well as in the fact that only they carry presuppositions.

1.2. Extension to plurals and mass nouns

The Russellian and Fregean analyses cover only DPs with singular count nouns. These happen to be the only nouns that cooccur with a, but the combines with plural and mass nouns too. Consider the books or the ink. Do these contain a homophonic determiner, or can a uniform entry for the work in tandem with suitable treatments of number and the count/mass distinction? The latter is surely preferable. Mass and plural nouns have extensions that are cumulative (closed under sum formation, cf. article 46 (Lasersohn) Mass nouns and plurals).

Combined with our semantics for the in (4), this leads to inadequate predictions. If there are three books, there exist multiple pluralities of books and (5) comes out truth-value-less.

(5) The books arrived.

To remedy this, Sharvy (1980) proposed to amend the classical semantics for the to one which invokes maximality. This can be done by rewriting (4) as (6a).

(6) a. \[[the]\] = \lambda P: \exists x \forall y [MAX(P)(y) \iff x = y]. \iota x. MAX(P)(x)

b. \text{MAX}(P) := \lambda x. P(x) \& \neg \exists y [P(y) \& x < y]

< stands for the proper-part relation between portions of stuff or pluralities. To illustrate, let there be three books, a, b, and c. [[books]], the extension of the pluralized noun, then contains the pluralities a+b, b+c, a+c, a+b+c (and possibly the atoms a, b, c). Given the proper-part relations between these elements,
MAX([books]) contains only a+b+c. So MAX([books]) is a singleton, as required by the presupposition built into (6a), and the books denotes a+b+c. In the same situation, [book], the singular noun’s extension, contains only the atoms a, b, c. None of these is a proper part of another, so \( \text{MAX}([\text{book}]) = [\text{books}] \) and as a non-singleton fails the presupposition of (6a).

On this treatment, the definite article still introduces presuppositions of existence and uniqueness, but not about the whole extension of the noun but about the set of its maximal elements. In the extension of a singular count noun, every element is a maximal element, hence the semantics of singular count definites is unaffected by the revision. The extensions of plural count nouns and mass nouns, being closed under sums, always have a unique maximal element unless they are empty. So the presuppositions of plural or mass definites boil down to mere existence presuppositions.

Since the indefinite article \( a \) is limited to count singular nouns in the first place, the issue of generalizing to plural and mass does not present itself in the same way. However, if we are interested in definiteness and indefiniteness, not just in the overt articles, we should look for counterparts of \( a \text{ book} \) in the plural and mass domain. Plausibly these are bare plurals and mass nouns.

(7) Books arrived.

Given the semantics for mass and plural nouns we assumed above in conjunction with (6), we might as well redeploy our entry (1b) as an entry for an abstract indefinite determiner, which happens to be realized as phonetically null before mass and plural nouns and as \( a(n) \) before singular count nouns.

(8) a. \( [-\text{DEF}] = \lambda P. \lambda Q. \exists x[P(x) \& Q(x)] \)

b. \( [\text{D -DEF}] \rightarrow a(n)/[N \text{ COUNT SG}], [\text{D -DEF}] \rightarrow \emptyset \) elsewhere

This predicts the desired truth conditions for (7): some plurality of books arrived.
But is \textit{a} really just the allomorph of indefiniteness before singular count nouns? Diachronically, \textit{a} is a reduced form of the numeral \textit{one}, and the fact that \textit{one} combines with count singulars and not plurals or mass nouns lends itself to an explanation that is semantic rather than morphological. Perhaps \textit{a} still is a numeral too. In that case, it ought to share the adjectival semantics of \textit{two} etc. and combine with the noun to form another predicate. The morphology of -\textsc{DEF} then is simple: it is null everywhere. But we lose the prediction that an article is obligatory with singular count nouns. A bare noun should be able to express the indefinite meaning just as well.

Our foray into plurals and mass nouns has led to a revised meaning for definiteness (based on maximality) and a loosening of the correspondence between indefiniteness and article morphology. The result can be summed up in the entries in (9), to be accompanied with suitable morphological rules to spell out these abstract features. Even +\textsc{DEF} is not always \textit{the}, if we accept a common analysis of possessive constructions like \textit{John’s book}.

\begin{align*}
\text{(9) } & \text{a. } \Phi[+\text{DEF}] = \lambda P: \exists x \forall y [\text{MAX}(P)(y) \leftrightarrow x = y], \text{tx.MAX}(P)(x) \\
& \text{b. } \Phi[-\text{DEF}] = \lambda P. \lambda Q. \exists x [P(x) \& Q(x)]
\end{align*}

We have not strayed far from the classical analysis designed for count singulars. Indefiniteness still expresses existential quantification and indefinite DPs are generalized quantifiers. Definiteness still carries a presupposition of existence and uniqueness, and definite DPs denote entities of type e. Definites still asymmetrically entail their indefinite counterparts.

1.3. Presuppositionality

Our Fregean analysis endows definites with presuppositions, while indefinites have none. This is one of the semantic differences between them. But discussions starting with Strawson’s work in the 1950s and taken up by linguists since the 1980s have called the simple correlation between definiteness and
presuppositionality into question. Diesing (1992) (building on Milsark 1977) argues that indefinites have both presupposing and non-presupposing readings, disambiguated by their location in syntactic structure. She proposes in a nutshell that indefinites, with the exception of bare plurals and mass nouns, are ambiguous and have a presuppositional reading of the sort exemplified in (10).

(10) \[ [a_{pres}] = \lambda P: \exists x P(x), \lambda Q. \exists x [P(x) \& Q(x)] \]

This coexists with another, non-presupposing, reading which yields the standard interpretation we assumed so far. Many surface occurrences of indefinites are ambiguous, but indefinites that are outside of VP at LF are obligatorily presupposing. This includes subjects of individual-level predicates and scrambled DPs in German. We must look at such disambiguating contexts to detect the presupposing readings. Relevant examples are not easy to construct, since a situation which verifies the presupposing reading always verifies the non-presupposing one as well. The most convincing cases were constructed by von Fintel (1998).

(11) I don’t know if he sent us any papers with mistakes in them. But if

a. ?? a mistake in this paper is serious, it has to be sent back.
b. there is a serious mistake in this paper, it has to be sent back.

The oddity of (11a) is predicted if serious, an individual-level predicate, forces a presupposing reading of its subject. The presupposition, which projects from the if-clause, clashes with the speaker’s stated agnosticism.

If indefinites can be presupposing or not, the dissociation of presuppositionality from definiteness might be pushed even further. Suppose both indefinites and definites came in two versions, and for both of them, presupposing readings were forced in the same environments.

(12) a. \[ [a_{pres}] = \lambda P: \exists x P(x), \lambda Q. \exists x [P(x) \& Q(x)] \]
\[
[[a]] = \lambda P. \lambda Q. \exists x[P(x) \& Q(x)] \\
[[the_{pres}]] = \lambda P. \exists x [\forall y [\text{MAX}(P)(y) \iff x = y] \& Q(x)]
\]

\[
\lambda Q. \exists x [\forall y [\text{MAX}(P)(y) \iff x = y] \& Q(x)]
\]

This picture has some *prima facie* support from observations by Strawson (1954) about truth-value judgments on examples (13a,b).

(13) a. The king of France is wise.  
b. Our exhibition was visited by the king of France.

There being no king of France, people are more inclined to judge (13b) plainly false while conceding that (13a) is in some sense neither true nor false. This could be a contrast on a par with (11a,b) and attributable to an alternation of the two readings of *the* in (12b). However, von Fintel (2004) argues that truth-value judgments do not correlate so cleanly with presuppositionality and that both sentences in (13) carry presuppositions, despite the difference between speakers’ willingness to judge them false.

1.4. Predicative uses and semantic type

On one analysis of predicate nominals, the noun *cat* in (14) is predicated directly of the subject, and copula as well as determiner are semantically vacuous.

(14) Toña is a cat.

I.e., the logical form (LF) of (14) contains no piece with the meaning of *a* in (1b) or -DEF in (9b). On another analysis due to Montague (1973), *be* denotes identity \((\lambda x. \lambda y. x = y)\) and the postcopular indefinite has its standard existential semantics, scoping over the verb like quantificational objects in any transitive sentence.
Since $\exists x [C(x) \land x = a]$ is equivalent to $C(a)$, the two analyses capture the same truth conditions.

Given the success of the second analysis, why would one posit two readings for indefinites, one existential and the other predicative? The identity analysis of *be* has some weaknesses, for instance its failure to predict constraints on possible predicate nominals (*John is every student, *There is a cat that Antonia is*). Also, there is a wider range of predicative constructions to consider, involving verbs such as *become* and *remain*, which defy an analysis as relations between individuals. It is widely held therefore that these verbs, and the plain copula as well, select for properties, and that indefinites can supply this type of meaning.

What about definites? These too occur after copulas and the wider range of relevant verbs.

(15) a. Toña is the boss.
    b. Toña became the boss.

If *be* and *become* select properties, how can a definite satisfy this demand? *the* can't just be vacuous, since the meaning is clearly not the same as with *a*. There is an inference of uniqueness, evidently contributed by *the*. If a definite can denote a property, then, it is not just the property expressed by its NP. Partee (1986) posits a covert type-shifting operator that constructs sets from individuals, or (for (15b)) properties from individual concepts.

(16) a. extensional IDENT: $\lambda x.e. \lambda y.e. x = y$
    b. intensional IDENT: $\lambda x_{<s,c>}. \lambda t. \lambda y.e. x(t) = y$

If IDENT is freely generated where needed, it can combine with definites after *be* and *become* and deliver the needed property. There is a danger of overgeneration: if traces of QR and wh-movement can be shifted to properties also, this is no better than Montague's approach.
A more unconventional response (Graff 2001) reanalyzes *the* as a predicate modifier.

(17)  

a. plain version:

\[ [[+\text{DEF}]] = \lambda P. \lambda x. \forall y[P(y) \iff x = y] \]

b. presupposing version:

\[ [[+\text{DEF}_{\text{pres}}]] = \lambda P: \exists z. \forall y[P(y) \iff z = y]. \lambda x. P(x) \]

With the b-version, (15a,b) get the same interpretation as through type-shifting by \textit{IDENT}: existence and uniqueness of a boss are presupposed. With the variant in (17a), these are merely asserted. The data bearing on the choice between the two variants are hard to assess. Whichever we adopt, how should we view the relation between the predicative definites that are created by this new entry and the definites in argument positions that we analyzed before? We could posit an ambiguity, analogous to the existential-vacuous ambiguity in indefinites. Or we could say that the new entry is the only meaning for +DEF and both definites and indefinites in argument positions combine with a silent existential quantifier (now no longer associated with indefiniteness). If were to aim for a Russellian meaning for definites, this would be straightforward: the existential determiner that was our original meaning for *a* combines with (17a) to yield just that meaning. If we aim for a Fregean meaning with presuppositions, things are trickier. Combining the plain existential determiner with (17b) might work if we have the right rule for presupposition projection through existential quantifiers.

1.5. Domain restriction

Definites sometimes refer to entities that are literally the unique existing instances of their restrictors (*the current president of the USA, the tallest mountain in Europe, my mother*), but more often than not, uniqueness obtains at best in a domain of contextually relevant entities that is narrower than what a speaker assumes to exist. Philosophers call this the problem of “incomplete descriptions”.


We routinely speak of *feeding the cat* even though we countenance many cats. (I illustrate with singular count nouns, but the problem generalizes to plurals and mass nouns: *feeding the cats* rarely means all the cats in the world.) How do we do justice to this fact? Does it undermine uniqueness-based accounts of definiteness?

The ubiquity of pragmatic domain restriction for natural language quantifiers is well known. Typical felicitous uses of *Every child got a present* or *No child complained* do not make claims about all the children in the world. As Neale (1990) argues, “incompleteness” is not a special property of definites. Suppose any DP can contain a covert predicate which in the semantic computation conjoins with the overt NP. If such a covert restrictor in *the cat* denotes the set of things in our house, then the uniqueness presupposition will be that there is exactly one cat in our house. Or it could denote the set of things we have talked about recently, in which case *the cat* will presuppose that only one cat was recently mentioned. In this way, we capture as a special case the “anaphoric” uses of definites. The covert restrictor may happen to pick out the set of entities mentioned in the previous sentence or some even smaller stretch of previously processed text. Hawkins’s (1978) “associative anaphoric” uses are covered as well. The covert restrictor in (18) may pick out the parts of the watch that is responsible for the truth of the first sentence. Among those there is only one battery.

(18)  I found a watch under the tent. It was fine except for the battery.

This approach pursues the appealing idea that there is nothing special about *the* compared to other determiners. For all we know, any determiner may be construed with a covert restrictor in addition to its overt one and thus apply to a narrowed set of contextually relevant entities. We may not detect this as easily with some determiners as with others. *the*, *every*, and *no* are not upward monotone, so covert restrictors weaken the presupposition or assertion, giving an otherwise truth-value-less or false claim a chance to be felicitous and true. *the* and
every also are not symmetrical, so we know for sure that the implicit narrowing is on the restrictor rather than the nuclear scope. Existential determiners, by contrast, are upward monotone and symmetrical. The claim that results from positing a covert restrictor thus always entails the claim without it, and we lack direct evidence for its presence from judgments of truth. Even consulting intuitions about falsity, we can’t tell which of the determiner’s two arguments is covertly restricted. Although we perceive (19) to make a stronger claim than it would without contextual restriction, the implicit restriction might be in the VP.

(19) An indicator light is broken.

But the evidence is at least consistent with free availability of covert restrictors for all determiners, and so nothing special should have to be said about the.

Supplemented by a nimble pragmatic mechanism of inferring covert restrictors from contextual clues, the classical uniqueness/maximality-based semantics for definites becomes virtually indistinguishable from an alternative due to Lewis (1973) and developed further by von Heusinger (1997) and others. On Lewis’s “non-monotonic” semantics, the P denotes not the unique but the most salient element of P. He motivates this proposal with examples like (20).

(20) The pig is grunting, but the pig with floppy ears is not grunting.

On a simple-minded uniqueness-analysis of definites, any possible scenario that supports the presupposition of (20) should guarantee its falsity. Lewis’s analysis allows (20) to be true in a universe with multiple pigs, as long as one pig is the most salient at the beginning of the utterance. However, once we acknowledge that each DP can come with its own covert restrictor, examples like (20) are no longer problematic for a uniqueness-based analysis. And as Westerstahl (1984) observed, cases analogous to (20) are also found with determiners other than the.

Future research may still uncover subtle but systematic differences between covert domain restriction for run-of-the-mill quantifiers and the mechanisms
which disambiguate “incomplete” definite descriptions. (See Schlenker 2004 for a promising attempt.) For the time being, it is reasonable to hold out for the null hypothesis that there is no special connection between covert domain restriction and definiteness.

1.6. Definite descriptions and pronouns

The Fregean approach to *the* yields denotations of type $e$, thus putting definite descriptions in a class with other individual-denoting DPs: complex and simple demonstratives (*that cat, this*), personal pronouns (*she*), and proper names. The various members of this class share at least superficial family resemblances in their semantics, pragmatics, and morphology. Expressions like *the Pacific* feel like proper names dressed as definite descriptions, and run-of-mill names also take definite articles in some languages. Definite articles often are etymologically related to demonstrative determiners, as are third person pronouns. Even first and second person pronouns have determiner-like uses, as in *we linguists*, arguably the form that *the linguists or those linguists* takes when the speaker is included in its denotation. Postal (1966) treated English pronouns as determiners with elided restrictors and identified third person pronouns and definite articles as allomorphs of each other. In their meaning and use, pronouns, demonstratives, and many definites have in common that they allow anaphoric uses along with deictic ones and that their reference is heavily dependent on context. When the spotlight is on such similarities, classical treatments of pronouns as variables and of names and demonstratives as directly referential look disturbingly dissimilar from the standard semantics for definites. We will not talk here about either names or demonstratives (see e.g. Elbourne 2005, Roberts 2002 for recent attempts at unification with definites). We will limit attention to pronouns and try to get a little clearer on what analogies between definites and pronouns might teach us about definites.

Heim (1982) took the standard analysis of pronouns as variables as the model for an analysis of definites. Definites, like pronouns, carried an index in the
syntactic representation. The descriptive content of the NP was treated as adding a presupposition.

\[ ([\textit{the}_1])^g = \lambda P: P(g(i)). g(i) \]

This approach predicts that definite descriptions, like pronouns, can be bound variables as well as free. Bound definites do occur, at least in environments where condition C of Binding Theory doesn’t interfere.

(22)  

a. Hemul gave every child a gift that he himself enjoyed more than the child.  
b. Every student’s advisor makes sure the student’s work is cited.

An entry like (21) leaves no need to posit covert restrictors in addition to the overt NP when the latter does not denote a singleton. Context-dependency is already built in with the individual-variable index, and unique satisfaction of the NP is not required. The NP may, of course, happen to be true of exactly one thing. The presupposition contributed by the NP will in many contexts be a crucial clue to the speaker’s intentions regarding the variable assignment, and it will be a stronger clue the more informative the NP is. This creates pragmatic pressure in favor of restrictors with smaller extensions; singletons are optimal in this regard, even though there is no semantic presupposition of uniqueness. The analysis of examples like \textit{the tallest mountain in Europe} and \textit{my mother} seems strained in this approach. They are intuitively not context-dependent and the restrictor’s uniqueness does all the work. But if presuppositions do play a systematic role as clues to otherwise not manifest contextual parameters, this is not a real objection. A harder problem arises with definites that themselves contain a bound variable (as part of a complex restrictor). Consider the representation and interpretation of the definite \textit{the mouse it caught} in (23).

(23)  

a. Every cat ate the mouse it caught.
b. \[ [\text{the}_1 \text{ mouse } \text{it}_2 \text{ caught}]^g = g(I) \text{ if } g(I) \text{ is a mouse caught by } g(2), \]
undefined otherwise.

Even when \( \text{it}_2 \) is bound by \textit{every cat}, the variable \( I \) is free, and this gives an inadequate prediction of presupposition failure unless every cat caught the same mouse.

This problem may be solvable and worth solving if the definites-as-variables view has genuine advantages over the classical uniqueness-based approach elsewhere. But as we already saw, once we admit covert restrictors of the sort that are needed for quantificational determiners, we have a handle on the context’s role in helping fix reference and can also treat anaphoric uses of definites. Even bound-variable uses can be modeled in this way if covert restrictors may be complex and contain bound variables. The covert restrictor on \textit{the child} in (22a) could be of the form \( f(x) \), where the variable \( x \) is bound by the relative pronoun and \( f \) denotes a function which maps each present to the child who received it. There are questions here about what sorts of complex covert restrictors can be generated and how the function variables in them get their values, but some of this machinery is needed already to capture certain readings of quantificational DPs, as in (24), where the sets of students quantified over vary with the classes.

(24) No class was so bad that
a. every student flunked.
b. no student passed.

Furthermore, the study of pronouns has long moved away from the simple view that every pronoun is a free or bound variable (cf. Article 40 (Büring) \textit{Pronouns}, but see Article 75 (Geurts) \textit{Accessibility and anaphora} for a dissenting opinion). Paycheck sentences, donkey sentences, and others exhibit what are known as E-Type pronouns: pronouns that are definite descriptions with a covert restrictor (typically containing a bound variable). Exactly which pronouns should
receive E-Type analyses is debated, but once at least some do, there already is a
unified semantics for (this subset of) pronouns and definites, without any
departure from standard uniqueness-based analyses of definites. It is not clear that
more of a unification is warranted by the data. A lexical entry for definites-as-
variables like (21) then is uncalled for, whether intended as a replacement for or
coexisting with the standard entry.

1.7. Competition and pragmatic strengthening

A sentence with a definite entails the corresponding indefinite sentence. The
indefinite sentence always is a no less truthful description of a state of affairs that
supports the truth of the definite. In practice, however, replacing the by a often
leads to infelicity.

(25) This bowl belongs to
      a. the cat upstairs.
      b. a cat upstairs.

(26) The bicycle was fine after
      a. the seat was replaced.
      b. #a seat was replaced.

(25a,b) are both fine, but if it is already common knowledge that there is a cat,
and only one, who lives upstairs, then (25b) is odd and (25a) the only natural
choice. In (26), the indefinite b-variant is strange because bicycles have only one
seat.

Contrasts like these make it look as if indefinites presuppose the opposite
of what definites do, non-uniqueness. If this were the right diagnosis, our entry for
-DEF would have to be revised. But a closer look at the data shows otherwise. If
(25a) presupposed uniqueness and (25b) non-uniqueness, neither would be
appropriate in a conversation where the existence and number of cats upstairs has
not yet been established. In fact, (25b) is fine in this case and does not compel the hearer to accommodate that there are multiple cats. The standard non-presupposing entry for a makes just the right prediction here. A better way to explain the infelicity judgments, due to Hawkins (1991) and Heim (1991), is to attribute them to implicatures, analogous to the quantity implicatures that cause some to be read as some but not all and or as exclusive. This requires assuming that a and the form a scale of competing alternatives. The speaker’s choice of the logically weaker indefinite triggers an inference that the conditions for the definite are not met, i.e., that he cannot presuppose both existence and uniqueness – be it because he is aware of multiple instances or agnostic about the matter, or because his knowledge on this point is not in the common ground and not accommodable.

The competition between indefinites and definites can interact in complex ways with the pragmatics of domain selection. This creates the superficial impression that indefinites resist anaphoric construals or are governed by a novelty condition. In the minimal pair in (27) (modeled on materials from Maratsos 1976) we understand the definite to pick out the same chair that John sat on, and the indefinite to imply that different chairs were sat on and knocked over.

(27) There were four chairs. John sat down on a chair. Then Mary

(a) knocked the chair over.

(b) knocked a chair over.

According to our current analysis, both the definite and indefinite can be construed with a covert restrictor, which may limit the set of chairs either to the four in the scene or more to the single chair involved in the last action described (John sitting down). Only the narrower covert restrictor allows the singular definite to escape presupposition failure, so this is how we interpret (27a). In (27b), with no presuppositions triggered, the narrower covert restrictor, the wider one, or none at all are equally viable choices. But for each choice we must consider the corresponding definite competitor and compute a non-uniqueness
implicature. In the case of the narrowest restrictor, this implicature is odd (i.e., there is more than one chair that John just sat down on). Therefore, this choice is discarded and we disambiguate in favor of the wider (or no) covert restrictor.

The competition analysis of the semantics and pragmatics of English indefinites also provides a satisfying answer to a question posed by cross-linguistic variation. Many languages do not have a definite-indefinite distinction but use the same forms to translate an English definite and its indefinite counterpart. Does this mean that DPs in these languages are systematically ambiguous between definite and indefinite meanings? Or do they have some third meaning that is vague between the two? The answer suggested by our analysis of English is that the “ambiguous” DPs in such languages are simply indefinites. They are semantically equivalent to English indefinites, but have a wider range of felicitous uses because they do not compete with definites and therefore do not induce the same implicatures.

1.8. Generic uses, “weak” definites

We have set aside generic uses of definites and indefinites. To be justified in this, we want to be sure that these uses do not contain crucial clues to the real meanings of the articles. Genericity is a huge research area of its own (cf. article 47 (Carlson) Genericity). Our limited interest here is in assessing whether there is such a thing as a generic reading of an indefinite or definite article, or whether the source of genericity is always in the larger construction to which the definite or indefinite contributes its ordinary meaning.

At least one source of genericity is a silent adverbial-like element at the clause level, in complementary distribution with overt adverbs of quantification like always and usually. A common approach to this element treats it as a quantifier over situations, GEN, with a near-universal quantificational force that is hard to pin down precisely. Like its overt cousins, GEN may be overtly restricted by an if or when-clause, but more often than not is restricted covertly, with focus marking in the clause acting as a clue to the intended restrictor and
presuppositions playing a role as well. These mechanisms provide for generic readings in many sentences not containing definite or indefinite articles (*John walks to school*). When definite or indefinite DPs happen to be in the scope of GEN, this can lead to the emergence of apparent generic readings for these DPs, expressing generalizations over multiple or arbitrary instances of them.

(28)  
a. The department chair (always) is appointed by the dean.  
b. A blue-eyed bear is (always) intelligent.

Even though the net effect is that these sentences quantify (near-)universally over multiple department chairs and blue-eyed bears, arguably what is really quantified over are situations, and the definites or indefinites are interpreted in their standard Fregean and existential ways, with restrictors whose extensions vary with the situations. E.g., (28a) says that every minimal chair-appointment situation is such that the unique chair in it is appointed by the unique dean in it. (28b) says that every minimal situation which contains a blue-eyed bear extends to a minimal situation in which a blue-eyed bear is intelligent. This line of analysis encourages the hope that generic readings of definites and indefinites are an epiphenomenon. But it faces many challenges, of which I mention only the best-known or most serious.

Consider the distribution of the generic reading of singular (count) definites.

(29) The domestic cat came to Australia in the 18th century.

(29) is an episodic sentence, not about multiple situations in any obvious way, so it cannot be analyzed in terms of GEN. Yet the definite here does not refer to a particular cat. Rather it appears to refer to an abstract individual, the kind or species *felis catus*. If these examples are to involve the regular meaning of the definite article, then it must be combining with a special meaning for the common noun *domestic cat*. Indeed there is separate evidence that common nouns are
sometimes reinterpreted as applying to kinds instead of the instances of those kinds they normally apply to.

(30) There are only three great apes.

Hopefully (29) can be unified with cases like (30).

Bare plurals (mass nouns) also have been argued to allow a generic reading that is not reducible to GEN.

(31) Domestic cats evolved from African wildcats.

Again, because the sentence reports a single (if protracted) event, GEN is not applicable. Could the analysis be that some plurality of domestic cats evolved from (some plurality of) African wildcats? But the intended claim is not one that is verified by some subset of the domestic cats in the world (it would be out of place to ask ‘which ones are they?’), rather it pertains to all domestic cats. Is the verifying plurality then the maximal plurality of all the cats there are? The existential semantics of indefinites does not disallow this, but we have seen that there normally is a prohibition against using an indefinite when the speaker knows that the maximal individual picked out by a definite would also verify the relevant predicate. In other words, we would expect the speaker's choice of (31) over (32) to give rise to an implicature of non-maximality.

(32) The domestic cats evolved from the African wildcats.

The fact that (31) is fine thus suggests that this is not an existential indefinite. The accepted diagnosis, due to Carlson (1977), is that such uses of bare plurals also refer to kinds (here felis catus again), and kinds are what predicates like evolve (“kind-level” predicates) select. On this view, at least some bare plurals (and mass nouns) are not actually indefinites at all; they do not contain an existential
determiner like our -DEF and thus differ from singular count definites much more fundamentally than merely in number.

(32) raises issues on its own. Why is this not a good paraphrase of (31)? On the received Carlsonian view, the reason is that evolve selects for kinds, which are not the same as maximal pluralities. But even if we choose predicates that elsewhere have no difficulty applying to pluralities of ordinary individuals, we still don’t get good sentences when the definite plural is not contextually restricted and is intended to pick out the sum of all existing instances of the noun. Unlike (33b), (33a) is not acceptable out of the blue.

(33)  

a. The cats number over 27 billion.

b. The cats that there are in the world today number over 27 billion.

(33a) requires a discourse context in which a set of cats has been introduced previously. (It may be the set of all cats in existence, but it still must be introduced.) Whatever the reason for this curious restriction on plural definites, it presumably applies to (32) as well, and we may not need an additional ontological distinction between kinds and maximal pluralities.

It is of interest that many languages with a definite-indefinite distinction otherwise similar to English do use definite plurals to express the meaning of (31). This may just mean that there is variation in how languages refer to kinds – some with bare plurals and some with definite plurals. But it may also suggest that kinds and maximal pluralities are the same thing, and it is English that is the odd language out. Unlike e.g. Spanish, it has a special restriction on its definite article, not allowing it to occur with plurals that have no covert restrictor (or relative clause). Instead, +DEF in these environments is spelled out in English as zero. The so-called kind-denoting bare plurals of English then are just unrestricted definites. We have a further dissociation between the abstract determiners +DEF and -DEF and their surface realizations, and the definite-indefinite distinction is systematically neutralized in certain cases in English.
To sum up what this brief excursion into genericity has taught us about the topic of definites and indefinites: First, “generic readings” are a mixed bag, and a good amount of what we find are run-of-the-mill definites and indefinites whose restrictors happen to contain situation variables bound by sentence-level operators. But second, there are at least some English bare plurals which are not plural indefinites, but rather some sort of referring terms – perhaps names of kinds or perhaps plural definite descriptions.

Another set of cases that challenge standard analyses of the may or may not belong in this section on genericity.

(34) You should go to the hospital.

(34) can be used to say effectively that you should go to a hospital. No specific hospital need be intended as the referent. An addressee who asked “which hospital do you mean?” would have misunderstood. Does this show that uniqueness, even uniqueness relative to covert contextually fixed restrictors, is not part of definiteness after all? Some have thought so (e.g. Ludlow & Segal 1994), but Carlson et al. (2006) argue that this is misguided. They show that, while the phenomenon is too widespread and systematic to classify these constructions simply as idioms, they do have a number of idiom-like properties that make it impossible to generate them in a compositional fashion with an all-purpose meaning for the.

2. Scopal properties of definites and indefinites

2.1. Predicted scope interactions with Russelian and Fregean definites

Russell (1905) based much of the case for his analysis on scopal interactions of definite descriptions with other scope-bearing items. His examples included negation, conditionals, and attitude verbs.
(35)  a. The king of France is not bald.
     
     b. If Ferdinand is not drowned, then Ferdinand is my only son.
     
     c. George V wished to know whether Scott was the author of Waverley.

In Russell’s judgment, (35a) can be read as either true or false (given that France has no king). It is false when read as ‘the king of France is non-bald’ and true when read as the negation of ‘the king of France is bald’. The surface sentence is compatible with two LFs, one in which the subject outscopes negation and one in which negation outscopes the subject.

(36)  a. [the king of France] λx. not [x is bald]
     
     b. not [the king of France is bald]

If the definite denoted an individual, (36a) and (36b) would be equivalent, but on Russell’s analysis of the, they are not: (36a) is false and (36b) is true. (35b), Russell notes, is true if Ferdinand is drowned and the speaker has no other sons. This is correctly predicted on his analysis if the definite description my only son scopes within the consequent of a material implication. In the scenario envisaged, both antecedent and consequent come out false. Russell’s point about (35a,b) is that sentences containing definites can be true in scenarios in which these definites don’t have referents – provided that they have non-maximal scope. (35c), Russell observes, is read as crediting George V with ignorance about a contingent matter, and his analysis captures this meaning by scoping the author of Waverley within the embedded clause.

In all three examples (35), the Russelian analysis predicts a truth-conditional difference between an LF where the definite takes minimal scope and an LF where it takes maximal scope. More generally, Russelian definites are not scopally commutative with truth-functional connectives or intensional operators.

This result does not carry over to the Fregean analysis. Under a standard bivalent truth-functional analysis of connectives, the relative scope of negation
and material implication with respect to a definite description does not affect truth values. For example, both LFs (36a,b) are truth-value-less when France does not have a king: not maps 1 to 0 and 0 to 1, so when φ has no truth value, neither does not φ. Fregeans therefore must give a different account of Russell’s judgment of ambiguity in (35a), in particular of the true reading (metalinguistic negation, ambiguous connectives in a three-valued logic, local presupposition accommodation – cf. article 91 (Beaver&Geurts) Presupposition). The putative narrow-scope definites in conditionals also require a different account in a Fregean theory. I refer to the literature on presupposition projection.

Let us concentrate on the scope of definites with respect to intensional operators, where both Fregeans and Russelian predict truth-conditional effects of structural ambiguity. I will phrase the discussion in terms of the Fregean analysis. Fregean definites denote individuals, but when their NPs express contingent properties, they do so contingently: whether the definite denotes, and what it denotes, depends on the situation of evaluation. This allows the complement clause in Russell’s (35c) to express a contingent proposition, provided the definite the author of Waverley is interpreted with local scope. If it were scoped over the attitude predicate, we would get a different meaning. It is better to avoid Russell’s original example in which the definite is a predicate nominal. Examples like (37) make the point too: we judge these to be ambiguous in a way that is naturally accounted for by allowing either scope relation between the definite and the modal or temporal operator.

(37)  
a.  The man in the purple shirt could have worn a white sweater. 
b.  John always argues with the man in the corner. 

On one reading of (37a), obtained by scoping the modal widest, we assert the existence of (accessible) worlds in which there is a unique purple-shirted man and he (moreover) wears a white sweater. Another reading, obtained by scoping the definite over the modal, is verified by the accessibility of worlds in which the man who in actual fact wears a purple shirt (instead) wears a white sweater. Similarly,
(37b) can mean that John always argues with whoever occupies the corner at the
time, or that he always argues with the man who happens to be in the corner right
now. This ambiguity is predicted if the definite can scope above or below the
adverb always. (More precisely, the readings with low scope for the definite
presumably carry a presupposition that is filtered through the modal or adverb;
e.g., the first reading of (37b) presupposes that every situation in the domain of
always has a unique man in the corner.)

2.2. “Wide scope” definites

We just saw how certain attested ambiguities can be accounted for by
manipulating relative scopes of a definite DP and an intensional operator. But this
is not the only way to generate these ambiguities. The apparent scope ambiguity
might arise from an ambiguity within the definite DP, which might make itself felt
even if its scope were fixed below the intensional operator. Such a definite-
internal ambiguity could have two possible sources. It could reside in the definite
determiner itself, or in the NP that restricts it. Exploring these additional
possibilities has led semanticists to entertain three different accounts of the
ambiguities we saw in (37), which I will dub the “DP-Scope” account, the
“Indexicality” account, and the “Index-Binding” account. I will describe each of
them in turn, using example (37b) throughout to exemplify.

I have already sketched the DP-Scope account. It is typically set in a
standard intensional semantics, where semantic values are assigned relative to an
evaluation index like a world, world-time-pair, or situation, and where a function-
denoting expression may apply to the extension or the intension of its argument.
Lexical entries for the items in (37b) are in (38). (39) gives the two LFs for the
sentence, accompanied by their predicted truth conditions. $s_u$ is the utterance
situation.

(38)  a. $\llbracket \mathbf{the} \alpha \rrbracket^s = \iota x. \llbracket \alpha \rrbracket^S(x)$

b. $\llbracket \mathbf{man-in-the-corner} \rrbracket^s = \lambda x. M(x, s)$
(M(x, s) := x is a man-in-the-corner in s)

c. $\llbracket \text{argue-with} \rrbracket^s = \lambda x. \lambda y. A(y, x, s)$

(A(y, x, s) := y argues with x in s)

d. $\llbracket \text{John} \rrbracket^s = j$

e. $\llbracket \text{always } \phi \rrbracket^s = \forall s^* \leq s: \llbracket \phi \rrbracket^{s'}$

(39) a. always [the mitc $\lambda x. \text{John argue-with } x$]

$\forall s \leq s_u: A(j, \iota x. M(x, s), s)$

b. the mitc $\lambda x. \text{always [John argue-with } x$]

$\forall s \leq s_u: A(j, \iota x. M(x, s_u), s)$

The Indexicality account is embedded in a Kaplanian two-dimensional framework, where semantic values are doubly relativized to two situations, a context and an evaluation point (cf. article 89 (Zimmermann) Context dependency). The crucial source of the ambiguity is the coexistence of two homophonous definite articles. Lexical entries, LFs, and interpretations are as follows.

(40) a. $\llbracket \text{the } \alpha \rrbracket^{c,i} = \iota x. \llbracket \alpha \rrbracket^{c,i}(x)$

b. $\llbracket \text{the}_\text{ind } \alpha \rrbracket^{c,i} = \iota x. \llbracket \alpha \rrbracket^{c,c}(x)$

c. $\llbracket \text{man-in-the-corner} \rrbracket^{c,i} = \lambda x. M(x, i)$

d. $\llbracket \text{argue-with} \rrbracket^{c,i} = \lambda x. \lambda y. A(y, x, i)$

e. $\llbracket \text{John} \rrbracket^{c,i} = j$

f. $\llbracket \text{always } \phi \rrbracket^{c,i} = \forall i^* \leq i: \llbracket \phi \rrbracket^{c,i'}$

(41) a. always [the mitc $\lambda x. \text{John argue-with } x$]

$\forall s \leq s_u: A(j, \iota x. M(x, s), s)$

b. always [the$_\text{ind}$ mitc $\lambda x. \text{John argue-with } x$]

$\forall s \leq s_u: A(j, \iota x. M(x, s_u), s)$
There may or may not be additional LFs in which the definite (with either reading of the determiner) scopes outside of the operator. If so, these get the same meaning as (41b). The crucial point is that two different readings are generated even if the scope of the DP is held constant and narrow. The indexical reading of the determiner provides a separate route to the same interpretation that the DP-Scope account only produces by scoping out the DP.

The Index-Binding account, finally, is at home in an extensional framework, in which the object-language (LF) contains variables for situations and operators that bind them. Semantic values are not relativized to situations either singly or doubly (only to variable assignments).

\[ (42) \]
\[
\text{a. } \llbracket \text{the } \alpha \rrbracket = \lambda x. \llbracket \alpha \rrbracket(x)
\]
\[
\text{b. } \llbracket \text{man-in-the-corner} \rrbracket = \lambda s. \lambda x. M(x, s)
\]
\[
\text{c. } \llbracket \text{argue-with} \rrbracket = \lambda s. \lambda x. \lambda y. A(y, x, s)
\]
\[
\text{d. } \llbracket \text{John} \rrbracket = j
\]
\[
\text{e. } \llbracket \text{always } \phi \rrbracket = \lambda s. \forall s' \leq s: \llbracket \phi \rrbracket(s')
\]

\[ (43) \]
\[
\text{a. } \lambda s. \text{always}(s) \lambda s'. [\text{the mitc}(s') \lambda x. \text{John argue-with}(s') x]
\]
\[
\forall s \leq s' u: A(j, \lambda x. M(x, s), s)
\]
\[
\text{b. } \lambda s. \text{always}(s) \lambda s'. [\text{the mitc}(s) \lambda x. \text{John argue-with}(s') x]
\]
\[
\forall s \leq s' u: A(j, \lambda x. M(x, s' u), s)
\]

Once again, there may be further LFs with wide scope for the definite, but both desired readings can already be obtained with the definite taking narrow scope. The reason in this case is the freedom we have in choosing situation arguments for the nouns, particularly the noun that restricts the definite article. Assuming that all variables must ultimately be bound in the complete LF, we still have a choice between binding them locally, to the nearest binder they are in the scope of, or non-locally to a more distant binder, such as the operator contributed by the matrix complementizer. The second option yields the reading that the other two
accounts attribute either to an indexical reading of *the* or (exclusively) to wide scope.

So far this has been a technical exercise in multiplying alternative routes to the same interpretation. Which is the real route, the one that the grammar of English actually employs to make (37) and other sentences like these ambiguous? Can we give testable empirical content to this question? Yes, the three mechanisms make different predictions about the distribution of the ambiguity, and we can confront these predictions with linguistic data.

A notable prediction of the Index-Binding account is that the same options for filling in the NP’s situation argument should be available when the determiner is something other than *the*, e.g. a quantificational determiner. A number of authors (e.g. Abusch 1994) have noted that this is borne out.

(44) If every semanticist owned a villa in Tuscany (instead), the world would be a boring place.

As Percus (2000) observes, (44) can be about counterfactual states of affairs in which villas are owned by all those who are actually semanticists. This reading is predicted if the situation-argument of *semanticist* is bound non-locally by the matrix complementizer, not locally by the counterfactual modal. The significance of the example is that this reading cannot be obtained by manipulating the scope of the *every*-DP. Matrix scope for this DP produces a meaning that concerns itself with actual semanticists, but not the meaning just described. Rather, the sentence then would say that if even one actual semanticist (any one) were a villa-owner, that would suffice to make the world boring. So the standard intensional semantics which formed the backdrop of the DP-Scope analysis for the ambiguity in (37) cannot account for the relevant reading in (44). What about the Indexicality account? It evidently won't apply if only the definite article has an indexical homonym; but the ambiguity could, of course, be generalized to other determiners, and defining a suitable indexical homonym of *every* is routine.
The existence of cases like (44) shows that grammar must provide at least one of the non-scopal mechanisms which mimic “wide-scope” definites, either Indexicality or Index-Binding. We have ample independent reason to assume that true scope ambiguity does exist and DPs have a certain degree of scopal flexibility in relation to other DPs and to negation, adverbs, modal verbs. In monoclausal configurations like (37), there is evidence for two LFs. But scopal mobility of DPs also is known to obey locality constraints (even if it is not fully known what those are). Under the reasonable working hypothesis that those constraints apply indiscriminately to DPs regardless of internal make-up, we can use evidence about the possible scopes of quantificational DPs to draw conclusions about the possible scopes of definite DPs. This leads us to conclude, for example, that a DP in the antecedent of a conditional cannot take matrix scope: the widest-scope-\textit{every} reading for (44) that we earlier contrasted with its intended reading is not a grammatical reading for this sentence. In light of this fact, examples like (45) constitute further evidence for the existence of a non-scopal mechanism.

(45) If the man in the purple shirt had better taste, he would be wearing something else.

(45) can be about counterfactual situations in which the actual purple-shirted man does not wear a purple shirt. Such a reading could in principle be obtained by scoping the definite out of its clause, but given that \textit{if}-clauses are scope islands, it must have another source.

Which of our two non-scopal mechanisms then is the right one? Both Indexicality and Index Binding predict that apparent wide-scope readings for definites are available beyond the configurations within which DPs are scopally mobile. But their predictions are not the same. We see this in more complex sentences where there is more than one potential “wide-scope” reading outside a scope island.
(46) John thinks he would arrive earlier if he wasn’t in the bus he is in.

Suppose John says “I would arrive earlier if I wasn't on the #4,” but he is actually on the #3. (46) can describe this scenario. The definite the bus he is in then is de dicto relative to thinks, picking out the bus John is riding in his belief-worlds rather than the one he is riding in fact. At the same time, it is not dependent on the counterfactual modal, or else the if-clause would be contradictory. (On the DP-Scope account that we have already ruled out, the reading would be one where the definite takes “intermediate” scope outside the conditional but below the attitude verb.) Such a reading is easily produced in the Index-Binding account, where it gets an LF in which the situation variable of bus he is in is free in the counterfactual and bound under think. The Indexicality account has trouble. Given that the definite’s denotation is not the bus that John takes in the utterance world, the cannot be the\textsubscript{ind}. Because if-clauses are scope islands, it also cannot scope out of the counterfactual. Then it can only be a narrowest-scope non-indexical definite, but that would make the if-clause contradictory.

Based on this type of evidence, it is widely accepted that something like the Index-Binding account is needed. There is then no motivation left for positing an indexical the as well. The readings generated by the Indexicality account are a proper subset of those generated by Index-Binding.

2.3. Indexical definites and the referential-attributive distinction

Notwithstanding the conclusion just reached, the idea that definite descriptions have an indexical reading has a long tradition of support from philosophers and linguists. It is often traced to Donnellan’s distinction between “attributive” and “referential” definites, though Donnellan’s observations have been interpreted in multiple ways by his commentators. Not everyone agrees that the distinction was supposed to be a semantic one at all, and those who do treat it as such have explicated it in different ways. Let us take a brief detour from our examination of
the scopal properties of definites and indefinites and look at Donnellan’s famous distinction.

The main empirical contribution of Donnellan (1966) is the observation that an utterance containing a definite description is sometimes heard to make a true claim even when the description fails to denote.

(47) A: This woman’s husband is very kind to her.
B: Yes, you are right, but he’s actually not her husband.

“Yes” indicates that B judges A’s claim true, yet B’s continuation makes clear that the proposition he judged true was not the one that a standard (Russellian or Fregean) semantics associates with A’s sentence. Donnellan imagines the dialogue taking place as A and B are observing a woman and her male companion at a party. A takes the companion to be the woman’s husband, B knows better. Both A and B judge the companion to be kind to the woman, and it is this opinion that B evidently understands to be the content of A’s claim.

If we take this data at face value, we are led to a semantics that makes it possible for the definite this woman’s husband to denote the woman’s companion, despite the fact that he is not in the extension of the NP. None of the proposals we have contemplated so far allows this, but here is an entry, from Stalnaker (1970), which does.

(48) \[[\text{the ref-stal } \alpha]^c,i = \lambda x \ [\text{the speaker in } c \text{ presupposes } \lambda'i'. [[[\alpha]^c,i'(x)]]]\]

As Stalnaker puts it, definite descriptions show a “pragmatic ambiguity”, and on one of their readings, the “referential” one, they denote the (unique) individual which is presupposed to have the property denoted by the restrictor NP. It is clear how this fits Donnellan’s example. If the (covert) definite article in this woman’s husband is interpreted in this way, the DP will denote not the man who in fact is the husband, but the man whom A presupposes to be the husband. This being the companion, the proposition expressed by A’s sentence then is true or false.
according to whether the companion is kind to the woman. So it can be true even when the presupposition that determines the definite’s reference is false.

But should we let data like (47) dictate our semantic analyses so directly? Real-life communicators often exercise charity, treating their interlocutors as having said what they manifestly intended even when they actually said something else. Isn’t (47) just an instance of this more general feature of cooperative human interaction? Kripke (1977) argued that it is. As he noted, while B’s response to A in (47) is natural, so are various others.

(48)  
A: This woman’s husband is kind to her.  
B’: No, her husband is in jail for abusing her. That guy is her brother.  
B’’: Her husband? She isn’t married. That’s her dad.

Do we want to say that hearers who respond like B’ and B” do so because they resolved an ambiguity in A’s utterance differently than B did? All three responders manifestly understood what A was thinking and trying to convey. As Kripke and Neale (1990) elaborate, we can explicate notions of ‘speaker’s reference’ as distinct from ‘semantic reference’, or of ‘proposition conveyed’ as distinct from ‘proposition expressed’, to describe what happens in dialogues of this kind. We also need a theory of pronominal anaphora that allows the he in B’s response to pick out someone other than the denotation of its “antecedent”. But there is no reason to alter the semantics of definites on account of such data. A common-sensical pragmatic story can be told on the basis of the very semantics of definite descriptions that the standard analysis provides.

Kripke’s response to Donnellan convinced subsequent authors that data like (47) do not by themselves suffice to support a semantic ambiguity or departure from standard analyses. However, Stalnaker’s explication of Donnellan’s referential reading brought another aspect to the forefront. Stalnaker’s referential definites differ from their ordinary (“attributive”) homonyms not only in that they can refer to something that does not fit the description, but also in that they are indexicals, whose denotation only depends on
facts of the utterance situation and does not vary across different points of evaluation. As a result, they do not scopally interact with intensional operators. Whatever scope a Stalnaker-referential definite takes with respect to such an operator, the proposition expressed by the sentence is the same. Stalnaker recognized that this paved the way for a different kind of empirical argument for the ambiguity than the one that Kripke’s criticism would later demolish. If definites could be shown to exhibit what looks like widest scope even when they were syntactically embedded in constructions that limit scopal mobility, this could be attributed to their referential readings rather than to actual wide scope. As we saw in the previous section, however, subsequent closer study of the scopal behavior of definites and other DPs ultimately led to a different conclusion. We need a framework in which the situation arguments of NPs restricting determiners can be bound non-locally, across intervening operators that are closer potential binders. Thus in the end no evidence for an additional indexical reading came from data about the interaction of definites and scope-bearing elements.

The indexical reading we contemplated in the previous section was not Stalnaker’s, but a version suggested by Kaplan (1977). The Kaplanian version does not fit cases like (47), since even on the indexical reading the definite must pick out the real husband. In this respect, Kaplan implicitly seconded Kripke and acknowledged a discrepancy between speakers’ manifest referential intentions and successful reference.

In Kaplan’s paper one senses an insistence that widest scope readings of non-indexical (attributive) definites are not the same thing as indexical (referential) readings, so that even when no intensional operators or other scope-bearing elements are involved, the two will come apart. Indeed there is a technical distinction between them in the two-dimensional frameworks advocated by Stalnaker and Kaplan. On the indexical interpretation, the \textit{F is G} expresses different propositions in different utterance contexts, with each of these propositions about a particular individual. On the (widest-scope) non-indexical interpretation, the sentence expresses the same proposition in every utterance context, but this proposition does not concern a fixed individual. But what
difference in linguistic behavior, if any, corresponds to this technical difference? Truth-value judgment tasks cannot distinguish the two cases. In making such judgments, speakers contemplate whether a given sentence would be true if the world in which it was uttered had such and such properties. The same imagined world serves as both utterance world and world of evaluation, and therefore the difference between indexical and widest-scope non-indexical meanings is systematically neutralized.

Are there other judgment tasks which do not have this characteristic? We cannot ask informants directly what proposition they think an utterance expresses, but there may be less direct ways of getting at the proposition expressed. Stalnaker suggests that anaphoric it and that have uses in which they pick out propositions expressed by previous utterances. If so, truth-conditional ambiguities in the sentences containing these anaphors can be traced to indexical/non-indexical ambiguities in their antecedents.

(49) The man in the purple shirt won. I had expected that.

*I had expected that* can mean either of two things: I had expected that whoever would be wearing purple would win. Or I had expected that this person, who happens to be in purple, would win. The sentence containing the anaphoric *that* seems to exhibit the same *de re-de dicto* ambiguity as the sentence *I had expected that the man in the purple shirt would win*. But whereas for the latter sentence we can easily posit two LFs (by varying the definite’s scope or by exercising different options for the world-variable in its restrictor), there is no room for such maneuvers when the object of *expect* is just a simple pronoun. Therefore, Stalnaker argues, the ambiguity can only reside in the antecedent sentence. Depending on whether *the man in the purple shirt* is referential or attributive, the antecedent sentence expresses two different propositions. They have the same truth value in the utterance world, but when plugged in as objects of *expect*, they can lead to different truth-values for the second sentence.
Is there another way to analyze the ambiguity in (49), consistent with the view that definites are unambiguously non-indexical, though their restrictors may contain either locally or distantly bound world variables? There is, but it requires a more complex covert structure in the representation of the supposedly simple anaphoric \textit{that}, \textit{that} might be a kind of paycheck-pronoun. The following example indicates that some such more flexible approach to propositional anaphora is unavoidable.

(50) Every time the most controversial candidate ended up getting the job, people later claimed they had expected that all along (and denied that there had been any controversy).

(50) generalizes over a number of job searches, each with its own most controversial candidate. The definite description thus cannot be referential or scoped outside its clause. The propositional anaphor \textit{that}, however, is interpreted as ‘that this person would get the job’ and not ‘that whoever was most controversial would get the job’. So even if we recognize the existence of a referential reading in addition to attributive readings with various scopes, \textit{that} cannot be analyzed as denoting the same proposition that its antecedent clause expresses.

The upshot of this discussion is that there remains no compelling argument for a referential-attributive ambiguity in definites, at least not for any of the proposed semantic implementations of Donnellan’s distinction.

2.4. Narrowest scope indefinites

The classical analysis of indefinites as existential quantifiers predicts scope interaction with negation and other connectives, quantifiers, and intensional operators. The null hypothesis is that their scopal freedom should mirror that of other quantificational DPs, constrained by the same scope island constraints. The facts depart notoriously from this expectation, in two directions. Certain types of
indefinites, notably bare plurals, seem limited to narrowest scope. Other types display an ability to take wide scope out of islands. We will look at the first phenomenon in this section and the second one in the next.

Carlson (1977) documents that English bare plurals lack the scopal freedom of other indefinites, such as singular indefinites with a, singular and plural DPs with some, and DPs with numerals. His data include contrasts like (51) and (52).

(51) a. Miles is looking for a policeman.
   (i) ‘there is a policeman that Miles is looking for’
   (ii) ‘if Miles’ search succeeds, there is a policeman he finds’

b. Miles is looking for policemen.
   (i) *‘there are policemen that Miles is looking for’
   (ii) ‘if Miles’ search succeeds, there are policemen he finds’

(52) a. ?? A dog is everywhere.
   (i) *‘there is a dog that is in every place’

b. Cats are everywhere.
   (i) ‘*there are cats that are in every place’
   (ii) ‘in every place, there are cats’

Carlson therefore rejects the idea that singular indefinites with a and bare plurals share a common abstract indefinite determiner. Instead he proposes that existential quantification with bare plurals has a radically different source, not contributed by a determiner or anywhere within the DP, but by the predicate that takes it as its argument. He proposes that a VP like be in the room effectively means ‘have manifestations that are in the room’. When this is predicated of an ordinary individual like John, manifestations are something like time-slices, so John is in the room means literally that some time-slices of the temporally extended John are in the room. But this VP can also be predicated of more
abstract individuals, particularly kinds, in which case we obtain the meaning that
some time-slices of some (ordinary) individuals which instantiate the kind are in
the room. If *cats in cats are in the room* denotes the species *felis catus*, then the
sentence will come to mean that there are some time-slices of instances of *felis
catus* in the room. Carlson proposes that bare plurals are *always* names of kinds.

This proposal spawned various variants. Most did away with the time-
slices and assume that the predicate meanings which have built-in existential
quantification are not the only or most basic meanings of those predicates.
Modern Neo-Carlsonians also acknowledge a semantic role for the plural
morphology (which Carlson disregarded) and assume that the existential
quantification ranges over pluralities rather than atoms. Common to the variants,
however, and crucial here, is that the locus of existential quantification is in the
predicate that the bare plural saturates and not in the bare plural itself. This is
what carries the burden of explaining the narrowest-scope restriction observed in
(51) and (52). Even if the bare plural itself moved to different scope sites as freely
as any quantificational DP, existential quantification would keep its same narrow
scope, quantifying effectively over manifestations of the denotation of the bare
plural’s (lowest) trace. Its scope is semantically inert like a proper name’s.

Diesing (1992) recast Carlson’s theory somewhat differently, both
empirically and theoretically. The core generalization for her is not that existential
bare plurals always have the narrowest possible scope, but that their scope is
confined the (smallest) VP which contains them. She also argues that the same is
true for *a*-indefinites, once we set aside their presuppositional readings (which
have the same scope options as other quantificational DPs). Both claims are rather
difficult to test empirically in the areas where they come apart from Carlson’s. If
Diesing is right, the unity of *a*-indefinites and bare plurals is restored and their
difference reduced to the predictable contribution of number – though only as far
as their non-presupposing variants are concerned.

There are a couple of systematic exceptions to Carlson’s narrowest-scope
generalization. One was observed by Partee (1985) and relates to the phenomenon
of “dependent plurals”. (53) patterns with the singular (51a) and not with (51b) in
permitting the $\exists > \text{look-for}$ reading, provided that the subject plural distributes over the matrix predicate.

(53) The two boys are looking for policemen.

  \text{ok} ‘for each of the two boys, there is a policeman that he is looking for’

Another exception was seen by Carlson himself and further analyzed by Chierchia (1998) and arises with certain modified bare plurals.

(54) Miles is looking for people who are sitting over there.

  \text{ok} ‘there are people sitting over there that Miles is looking for’

Carlson and Chierchia suggest that modifiers expressing purely extrinsic or non-predictive attributes make an NP express a property which does not correspond to any kind. I.e., not every expressible property corresponds to a kind that is instantiated by all and only the bearers of this property, only that subset of properties which play a role in law-like generalizations. When a bare plural in argument position is formed from an NP which expresses a kind-less property, then it can be construed with a silent existential determiner and be a regular scopally mobile DP. Chierchia posits an economy principle that ensures this option is only a last resort and not available in (51), (52).

In summary, the limited scopal options of certain indefinites, particularly bare plurals, have been attributed to a non-quantificational semantics for them, locating their apparent existential force outside of them in the surrounding structure.

2.5. “Wide scope” indefinites

Fodor & Sag (1982) drew attention to the apparent ability of indefinites to take wide scope in configurations where other quantifiers cannot. They presented minimal pairs like (55).
(55) John overheard the rumor that
   a. every student of mine was called before the dean.
   b. a student of mine was called before the dean.

The complex DP the rumor that ... is a scope-island for ordinary quantifiers, and
(55a) can only refer to a rumored universal generalization. (55b), by contrast,
need not refer to a rumor with existential content. It also can assert that there is a
student of mine about whom John overheard the rumor that he was called before
the dean. The indefinite seems to scope over the matrix clause.

Fodor and Sag proposed that the apparent wide-scope reading of the
indefinite is not due to wide scope but to an indexical (“referential”) reading. The
proposal is modeled on the Indexicality account of “wide scope” definites that we
saw in section 2.2. Fodor and Sag’s meanings for the ambiguous indefinite
determiner are in (56).

(56) a. $[[a_{quant} \alpha]^{c,i} = \lambda Q. \exists x[[\alpha]^{c,i}(x) \& Q(x)]$
   b. $[[a_{ref} \alpha]^{c,i}$ is defined only if there is a unique individual that the
      speaker of c has in mind in c, and this individual is in $[[\alpha]^{c,c}$;
      where defined, $[[a_{ref} \alpha]^{c,i} = this \ individual.$

(56a), the usual existential meaning, gives rise to quantificational DPs with the
same scopal mobility as other quantificational DPs. (56b) creates an individual-
denoting DP whose reference depends only on the context of utterance.

Accordingly, the scope of this DP vis-à-vis other elements does not affect truth-
conditions. Fodor and Sag argue that the perceived “wide scope” reading of (55b)
is due to an LF like (57a), not (57b).

(57) a. John overheard the rumor that
   $[a_{ref} \text{student of mine was called ...}]$
b. \( * \text{a}_{\text{quant}} \ \text{student of mine} \ \lambda x. [\text{John overheard the rumor that } x \text{ was called} \ldots] \)

These two LFs do not receive exactly the same interpretation. (57b) expresses a proposition context-independently (namely that there is a student of mine such that John overheard the rumor that he was called before the dean). (57a) expresses different propositions in different contexts and no proposition in some. It carries the presupposition that the speaker has a particular student of hers in mind, and when this presupposition is true, it expresses the proposition that John overheard the rumor that this student was called before the dean. Despite these differences, data from tasks like truth value judgments will not easily discriminate between the two. A speaker prepared to assert the existential proposition expressed by (57b) will typically have a verifying instance in mind. If so, the utterance context supports the presupposition of (57a), and this presupposition together with the assertion of (57a) entails (57b). Arguably, therefore, our judgment that (55b) permits the reading in (57b) is an illusion and the reading we really are witnessing is (57a). (But see Ludlow & Neale 1990.)

Fodor and Sag noted and sought to confirm a prediction of their analysis that set it apart from the competing hypothesis that quantificational indefinites can scope out of islands. If the latter were true, we would see not only apparent widest-scope readings but also readings where the indefinite appears to scope above an island but below another operator. An indexical analysis cannot mimic such “intermediate” readings and thus predicts them to be impossible. Here is an example sentence and its relevant potential reading.

(58) a. Every teacher overheard the rumor that a student of mine was called before the dean.

b. ‘for every teacher x there is a (potentially different) student of mine y such that x overheard the rumor that y has been called before the dean’
Fodor and Sag judged that (58a) could not describe a scenario where each teacher heard a rumor about a different student. More generally, they found no cases where an indefinite took non-maximal scope yet scope out of an island. Subsequent authors (Farkas 1981 and others), however, soon reached a consensus that such readings exist. For example, (59) can have his bound by every student, yet need not mean that every student read all the books recommended by any of his teachers. Instead it can be true on the grounds that every student had some teacher whose recommendations he heeded.

(59) Every student read every book that a teacher of his recommended.

Because of this type of data, Fodor and Sag’s indexical analysis was abandoned. Kratzer (1998) and Schwarzschild (2002) proposed conservative amendments of Fodor & Sag (1982) that extend to the cases of “intermediate scope”. I focus on Schwarzschild’s version. Like Fodor and Sag, he maintains that apparent wide scope indefinites have local scope despite appearances, but unlike them, he does not posit ambiguity in the indefinite article. Maintaining a classical existential analysis, he instead exploits the ubiquity of covert restrictors. As he observes, when the NP restricting a (quantificational) indefinite article happens to denote a singleton, different scopes for the indefinite systematically collapse in truth-value. Conceivably then, the indefinite a student of mine in (55b) scopes within its minimal clause but is covertly restricted by something like ‘whom I am thinking of right now’ or ‘who is called Mary Smith’. Provided that the relevant covert restrictor applies to only one actual student of mine (and is construed de re), this has the consequence that the LF says the same thing as it would if the indefinite had matrix scope. Schwarzschild can effectively mimic Fodor and Sag’s analysis by positing a covert ‘which I now have in mind’ wherever they posit referential a. But it is more flexible and also can handle apparent intermediate scopes, since covert restrictors can contain bound variables. In (59), for example, the covert restrictor could be ‘who is his (the student’s) favorite
teacher’, or whatever else describes a unique but possibly different teacher per student.

This approach raises murky issues about the pragmatics of covert domain restriction and context-dependency more generally. Other cases of context-dependency, such as deictic pronouns or covert restrictors for universals and definites, lead to infelicity unless the hearer can in some sense identify the intended value for the contextual parameter or covert element. There are complicating factors like vagueness and the fact that the relevant values may be intensions rather than extensions, but even allowing for these, the covert restrictors invoked by Schwarzschild seem different. When we hear *He is nice* or *Every student got an A*, we insist on understanding which male is referred to, or whether the universal claim is about just one class or the whole school. We are not content with just letting it be whoever the speaker has in mind or whoever fits some description of unknown content. The attempted reduction of the phenomenon of “wide scope” indefinites to the run-of-the-mill mechanism of covert domain restriction is thus not entirely successful.

Other evidence against Schwarzschild’s project could come from examples of a sort discussed by Chierchia (2001) and Schwarz (2001, 2004), which involve apparent intermediate scope below negation.

(60) No boy ate the cookies that a girl from his class had brought.

Schwarz reports a reading for this sentence that is falsified by the existence of any boy-girl pair such that the girl is in the boy’s class and he ate the cookies she brought. If this judgment is representative, Schwarzschild’s (and Kratzer’s) approach is insufficient.

Another influential proposal was the choice-function analysis of Reinhart (1997) and Winter (1997). These authors also agreed with Fodor and Sag that apparent wide-scope or intermediate-scope indefinites did not really have wide or intermediate scope. They proposed that indefinite DPs contain a variable over choice functions which is bound by existential closure somewhere higher in the
sentence. One can implement this by introducing the choice function variable through the lexical entry of the indefinite article, and the existential closure operation through a silent morpheme freely generated at the edges of propositional domains in LF.

\[(61)\]

a. \(\llbracket a_{\text{chf}} \alpha \rrbracket^g = g(i)(\llbracket \alpha \rrbracket^g)\)
b. \(\llbracket \exists_{\text{chf}} \phi \rrbracket^g = 1 \text{ iff } \exists f_{\langle t, e \rangle} \forall P \in \text{dom}(f): f(P) \in P \& \llbracket \phi \rrbracket^g_i/f = 1\]

A simple indefinite sentence could have the LF in (62), meaning literally that some way of mapping the set of cats to one of its members yields a value that arrived – a roundabout way of saying that a cat arrived.

\[(62)\] \(\exists_{\text{chf}} [a_{\text{chf}} \text{ cat arrived}]\)

The key to capturing wide scope readings is the free distribution of the existential closure operator, which need not be local to the indefinite it binds. As the following possible LF illustrates, the indefinite itself can remain in a low position within the scope of another quantifier, yet appear to have wider scope in virtue of the high position of its binder.

\[(63)\] \(\exists_{\text{chf}} [\text{every boy petted } a_{\text{chf}} \text{ cat}]\)

lit.: 'some way of mapping the set of cats to one of its members maps it to something which every boy petted'

While (63) does not involve a scope island, the mechanism carries over to examples which do, since there are no locality constraints on variable binding. Non-maximal island-escaping scope also is not a problem, since the \(\exists\) operator can be generated at any level.

The analysis was later amended in light of observations by Kratzer (1998), Chierchia (2001) and others, replacing plain choice functions by so-called
skolemized choice functions. But the reasons for and details of this further refinement need not preoccupy us, since Schwarz (2001, 2004) has shown that choice-function analyses do not solve the puzzle of wide-scope indefinites. Schwarz points out a problem of overgeneration which already afflicts the simpler version presented above and only gets worse in the skolemized version. This problem arises with indefinites in the scope of non-upward-monotone quantifiers. Consider (64a) with the potential LF in (64b).

(64) (a) No candidate submitted a paper he had written.

(b) $\exists_{\text{chf } 1} [\text{no candidate}_2 [t_2 \text{ submitted a}_{\text{chf } 1} \text{ paper he}_2 \text{ had written}]]$

(64b) is equivalent to ‘no candidate submitted every paper he had written’, a reading clearly not attested for (64a). The choice-function analysis would have to be constrained so as not to generate LFs like (64b). Schwarz argues that there are no plausible constraints that accomplish this and leave intact the positive results of the approach. If Schwarz is right, we may have to concede what Fodor and Sag and most subsequent authors wanted to avoid: indefinites are existential quantifiers that enjoy a greater degree of scopal mobility than other kinds of quantificational DPs. We may have to look for an appropriately differentiated syntactic theory that will make sense of this, or perhaps admit scoping mechanisms that are not strictly syntactic along the lines of Abusch (1994).

A brief note on indefinites with a certain is in order before we wrap up. Although Schwarz concludes that wide-scope indefinites are better handled by real scoping than any of the alternative mechanisms we surveyed, he adds a qualification. This concerns a set of examples which he classifies as “functional indefinites” and which invariably contain the adjective certain. As observed by Winter (2001), adding certain to an indefinite can brings about readings which are clearly not generated in a classical existential analysis, regardless of what is assumed about scopal freedom. The following minimal pair illustrates.

(65) Every boy who hates
a. a relative of his

b. a certain relative of his
develops a complex.

Holding constant a bound interpretation of the pronoun *his*, (65a) can only mean that every boy who hates any of his relatives develops a complex. This is expected, given that the scope of the indefinite *a relative of his* is roofed by the relative pronoun that binds into it. But (65b) means something different, something like: ‘for a certain kinship-relation R, every boy who hates the person he bears R to develops a complex’. This could be true while (65a) is false, e.g., if every boy who hates his mother develops a complex but some boys who hate their father do not. For examples with *a certain*, the approach of Kratzer (1998) and Schwarzschild (2002) makes the right predictions. *certain* appears to restrict the indefinite to a proper subset of the NP it modifies and may well mean something like ‘standing in the kinship-relation I have in mind’. But this then needs to be cashed out in the analysis of the word *certain* and is not a matter of covert domain restriction or of the indefinite article or -DEF feature. Does the analysis of *certain* have *any* intrinsic connection with the study of indefiniteness? That remains to be seen. But what is not the case is that the meanings of indefinites with *a certain* are also possible readings of plain indefinites without *certain*.

3. References


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