The Case of Indefinites: Scope and Context

1: Introduction

In the previous chapter, I suggested that the familiar notion of a syntactic (covert) variable is, in fact, something of a misnomer, for the parade cases of such variables are not examples of variables in the intended sense, i.e., items that may be bound or free to be contextually valued. I also sought a generalisation from this observation and presented a rationale for it, to the effect that the locality of syntax precludes variables of the intended kind. Given that syntax is an empirical phenomenon, there can be no a priori argument for this claim, but only empirical and 'best theory' considerations, such as the ones offered. In this chapter, I shall focus on yet another case: the curious scopal behaviour of indefinite DPs. This case is particularly interesting for assessing the appropriate level of variable involvement, for the factors that bear on the behaviour of indefinites pertain to syntactic, semantic, and pragmatic considerations, and the most developed accounts of indefinites make essential appeal to variables in some sense or other.

My purpose in this chapter, then, is to assess the variable involvement of extant accounts of indefinites. My conclusion will be that the best account of indefinites does not involve free variables, but only bound variables, and such binding is not a syntactic effect. My general thesis, therefore, finds further corroboration. Before we get to indefinites, however, a few background remarks are necessary.

2: Quantifiers, islands, and specificity

As intimated above, the literature on indefinites since the early 1980s is marked by a confluence of considerations from many areas of linguistics as well as notable contributions from philosophy of language. I can't hope to cover, let alone do justice to, the complexity of this work. My intent, however, is not definitively to settle disputes about the status of indefinites, but only to show that accounts of indefinites that appeal to free variables unfavourably compare to an account that doesn't, namely, the choice-function account articulated by Reinhart (1997, 2005) and Winter (1997). The ultimate truth about indefinites is one thing; whether their behaviour offers a prima facie case for syntactic free variables is another thing, the thing that presently occupies me.

Although my focus is narrow, I shall be making some broad assumptions, if for no other reason than to keep the discussion manageable. In this section I shall spell out these assumptions and indicate why they are innocent, at least from the perspective of my narrow focus, i.e., the assumptions to be made do not prejudge the issue of the existence of free syntactic variables in my favour.

(i) *Quantifiers and their scope*. In the absence of considerations (empirical or theoretical) to the contrary, I assume that natural language determiners express generalised quantifiers, such that the determiner is of type <<e, t>, <<e, t>, t>>, which, takes a monadic predicate of type <e, t> as argument, to generate a DP of type <<e, t>, t>, which may combine with a predicate to generate a truth-evaluable phrase (a 'sentence'). Semantically, then, DPs may be construed as denoting a set of sets; for example, *every boy* denotes the set of sets that contain every boy; *some boy* denotes the set of sets that contain at least one boy; *three boys* denotes the set of sets that contain at least three boys; and so on. I do not for a moment think that the semantics of DPs is so

straightforward; indeed, the behaviour of indefinites is a complicating case in point. Still, the generalised quantification framework is sufficiently robust to be the default assumption of most researchers in the field (Peters and Westerståhl, 2006; Szabolcsi, 2010).

I further assume that the scope of DPs in natural language is governed by a syntactic principle of Quantifier Raising (QR) discussed in the last chapter. This is to say nothing more than that syntactic structure encodes at least some scope relations by way of DPs being moved into positions of relative c-command to each other that reflect the relative dependence of the DPs interpretations. I only assume that QR operates on DPs that scope out of their surface position; narrow or *in-situ* scope may be realised without QR-movement. Also, a commitment to QR in such a non-obligatory sense does not amount to a commitment to a syntactic level of LF as *the* level where QR applies. I am happy for QR to be an instance of a more general movement operation that applies throughout a derivation. All that is important about QR for present purposes is that it is a syntactic principle and so should respect syntactic constraints on movement. I'll get to such constraints shortly.

These two assumptions about the semantics and syntax of natural language quantification in no way militate against syntactic free variables. Trivially, if DPs are generalised quantifiers, then a free variable associated with a DP would most naturally be read as a further restriction on the domain of quantification specified by the nominal argument of the determiner (Stanley and Szabó, 2000). The semantics of generalised quantification is entirely blind to whether the full restriction on the quantification comes from lexically specified content alone or from such content and a further restriction

provided by the context of utterance.[1] The neutrality holds in the other direction too: generalised quantification clearly does not entail or presuppose free syntactic variables, for the framework applies to cases where we may simply stipulate the absence of free variables or variables *in toto*. The framework provides a general algebra for quantification, and is not associated with any particular means of encoding the algebraic relations.

QR, as argued in the last chapter, only involves bound variables, but this is utterly trivial, as QR *just is* a principle that generates dependent relations (*trace of x*, *copy of x*) as opposed to a principle that interprets extant syntactic relations between lexical items as being dependent or not. Still, again, QR is not in any way inconsistent with free syntactic variables; such would-be variables could not be QR-generated, but they might be independently generated and undergo movement via QR.

(ii) *Islands*. So-called islands are syntactic domains or phrases from which items cannot move, but which items may cross over (hence the original term, 'island', as in 'stranded on an island'). I shall assume that islandhood is a syntactic phenomenon, as opposed to a pragmatic or processing effect. I shall also assume that syntactic islands are one and the same as scope islands; that is to say, a phrase from which, say, a *wh*-item cannot overtly move is also a phrase from which a DP cannot scope out via QR. For example, we have the correct prediction in (1) on the assumption that relative clauses are syntactic and scope islands:

(1)a *What did someone meet [$_{DP}$ the man [$_{RC}$ who wrote <what>]]

b Someone met [DP the man [RC who wrote few articles]]

(1a) is ill-formed, where *what* is moved from the relative clause embedded within the DP. Note, though, that *wh*-movement from the DP position is fine, as in the discourse, *Who did someone meet? The man who wrote the article about bees*. We take the relative clause, therefore, to be a syntactic island. Reflecting on (1b), we see that the relative clause seems to be an island too for the scope of the DP *few articles*, which cannot be construed with wide scope over the matrix DP *someone*:

(2) Few articles are such that someone met the man who wrote them

(2) expresses a perfectly coherent, albeit implausible, thought, but it is not a thought expressible by (1a).

All that said, syntactic islands cannot be identified with scope islands. Clausal complements of verbs are typically understood to be scope islands, but they are not syntactic islands.[2] Still, the correspondence is close enough to make it a default assumption that QR overt movement for scope mirrors overt movement for question formation and the like. In other words, where there isn't such a correspondence, an explanation should be forthcoming. As for what phrases are islands, I shall only discuss DPs embedded in DPs, *if*-clauses, and relative clauses, all of which are paradigmatic syntactic and scope islands.

These assumptions about islands are controversial, of course, as is more or less everything in syntactic theory.[3] The assumptions, however, are neutral regarding the status of syntactic free variables. As we shall see, a large measure of the interest indefinites have is due to their apparent exceptional behaviour with regard to islands, and most theorists in the field, regardless of their attitude towards free variables, endorse the conception of islandhood just spelt out. The problem is just this: if QR is what generates

non-narrow scope, and QR is a syntactic principle, then the scope of DPs should be regular *vis-à-vis* syntactic constraints that *eo ipso* apply to QR. This is not so, though: indefinites scope exceptionally. So, at least as far as the extant positions in the field are concerned, the status of islandhood is a neutral matter. This is just as it should be, of course. Imagine that islands had no syntactic basis at all. In that case, without further ado, indefinites would not be exceptional *vis-à-vis* syntactic constraints, because islandhood would not be a syntactic condition. So, QR could scope out indefinites without contradicting any syntactic condition. So much, though, would leave the phenomena unexplained. If QR may, after all, scope out indefinites from relative clauses, say, then it should scope out the non-indefinites too, such as *few* and *every*, but such determiners do not take wide scope in those environments. The basic problem, then, is that scope is not uniform, and it is unobvious what syntactic or semantic condition could explain the difference. The common appeal to islands and QR is simply one way of pitching the irregularity, which remains even if one forsakes QR and syntactic islandhood.[4]

(iii) *The indefinites*. I shall principally be concerned with *some* and *a/an* as indefinites. The relevant scope behaviour, though, generalises to at least a sub-class of 'weak' or existential quantifiers, including unmodified numerical terms and *several*. The precise identity of the class is not important for my purposes, and none of my examples will turn on controversial cases.[5]

(iv) *Specificity/referentiality*. Parallel to the discussion of indefinites, there has been much debate about the character and status of specificity or referentiality, i.e., how a speaker may intend to express proposition whose truth bears on a specific thing, and how such a content might be encoded in the use of indefinites.[6] I shall have something definite

to say about this issue with reference to Schwarzschild's (2002) position. In the main, though, I take the issue of specificity/referentiality to be orthogonal to the central question of the scope behaviour of indefinites, because specificity alone, however it is understood, appears not to account for the varied scope options of DPs. So, I take no definite stand on the character of specificity, but only assume that its proper explanation, whatever that might be, will not explain the central phenomenon of indefinites.

With my assumptions stated, let us consider, then, the curious behaviour of indefinites.

3: The choice-function analysis of indefinites

It has long been noted that indefinites support so-called 'referential/specific' and general or existential construals. Thus, the normal construal of (38a) appears to be existential, where no particular philosopher is relevant to the truth of the sentence, just some philosopher or other, whereas the normal construal of (38b) is that a particular friend of the speaker is truth-conditionally relevant:

(3)a This copy reads as if a philosopher wrote it

b A friend of mine is ill

In a seminal article, Fodor and Sag (1982) argue that such a difference is linguistically encoded, not a pragmatic or discursive matter pertaining to how on an occasion a speaker/hearer might choose to construe an indefinite in light of the prevailing context or background information. For example, typically, one is familiar with one's friends, so a speaker of (3b) would naturally be understood to have someone specific in mind, rather than be understood as making an existential claim that is true so long as at least one of their friends is ill. The difference, however, according to Fodor and Sag (ibid., p. 357),

doesn't arise from a difference in syntax, but from 'a lexical ambiguity, comparable to the lexical ambiguity of *bank*', i.e., *a* occurs as both a determiner (quantifier) and as a referential term akin to a name or a demonstrative. The problem now, though, is how to tell the readings apart, for a referential term will take wide scope, just as a determiner may, so there appears to be no semantic difference between *a* being a quantifier with peculiar scope properties and *a* being a referential term.[7] Key to Fodor and Sag's argument are sentences such as (4):

(4) Each teacher overheard the rumour that a student of Bill's had been caught cheating

Their claim is that 'an indefinite that escapes from an island has *maximally* wide scope with respect to any quantifiers or logical operators outside the island' (ibid., p. 374). The island in (4) is the DP *the rumour...* that contains the indefinite DP. Clearly, the indefinite DP *a student of Bill's* can scope out of this island, for (4) supports the reading: *A student of Bill's is such that each teacher overheard the rumour that s/he had been caught cheating*. Here the indefinite takes maximally wide scope out of the island and over the matrix DP *each teacher*. Fodor and Sag's central claim is that (4) does not support the intermediate reading: *For each teacher there is a student of Bill's such that the teacher overheard the rumour that s/he had been caught cheating*. In other words, the unavailable reading is one where, for each teacher there is a potentially different student.[8] If *a*, on the relevant construal, is a quantifier that can scope out of islands, then it should be able to support intermediate readings in the absence of a stipulation to the contrary; that it can't would be explained if *a* were here not a quantifier but a referential term: 'A true referential phrase doesn't so much as escape from an island as shine right through it; and it also shines right through any scoped elements in the sentence… [Thus] a referential

phrase is a maximally wide scope existential (Fodor and Sag, 1982, p. 375). So, if we assume that the indefinite is lexically ambiguous between a quantificational and referential reading, we can explain two otherwise puzzling phenomenon: why the indefinite *appears* to scope out of islands and why it can't take intermediate scope. The indefinite doesn't in fact scope out of islands, but 'shines' through them *qua* referential (in such cases), and it doesn't take intermediate scope, for, like-wise, it 'shines' through every scope element. Furthermore, according to Fodor and Sag, the proposed ambiguity holds generally, even where no other scope-taking items are present in the host structure of the DP, which also explains the initial data exemplified in (3).

Before assessing this ambiguity account, it is worth noting that Fodor and Sag are not precise about what a referential construal involves. Ludlow and Neale (1991), for example, distinguish between a *referential* and *specific* use of an indefinite, where a referential use involves the utterer intending to communicate a proposition about a definite object and intending their audience to recognise that the given object is what the utterance is about. On the other hand, a specific use is one where the utterer 'has something in mind', but does not necessarily reckon their audience to understand the utterance as being about a particular entity.[9] I think Fodor and Sag perhaps waver between these notions, but for our purposes, the crucial issue is not so much with whether indefinites can be referential, but how they acquire their scopal properties.[10]

Clearly, Fodor and Sag's account is independent of the issue of whether syntax contains variables that might be free or bound, for the account posits a lexical ambiguity rather than a context- or discourse-sensitivity that requires a variable to implement. My present concern, therefore, is not to challenge their analysis. There is a consensus,

however, that Fodor and Sag's analysis, although insightful, cannot be right, and free variables do become relevant as a possible means of improving the analysis.

One major area of dispute is Fodor and Sag's claim that intermediate readings of indefinites are unavailable.[11] As we shall see, it seems clear that intermediate readings are available; what remains less clear is what constructions permit the readings and what the mechanism for interpretation is in such cases. Furthermore, if one gives up on what Reinhart (1997) calls the 'optimistic view of QR', *viz.*, that scope-taking has a uniform syntactic signature, then much of the argumentative weight in favour of the ambiguity hypothesis is lost, for a difference in scope and island-escaping is no longer a diagnostic for a difference in semantic category; broad distinctions are called for rather than the surgical positing of an ambiguity, as it were. What is of present interest is how one might account for the wide-scope, island-escaping readings, whether maximal or intermediate. Consider, then, (5):

(5) If a certain philosopher is invited, Bill will be annoyed

The natural construal of (5) is that there is a certain philosopher such that if s/he is invited, then Bill will be annoyed, where the indefinite takes wide scope outside of the *if*-clause.[12] No such reading is available with *few/every/no/most philosopher(s)* substituting for *a certain philosopher*. Such problematic data has spawned something of a semantic cottage industry. My focus here is just on how the use of variables might resolve the quandary, and whether such an appeal offers an example of variables that might be free or bound.

Following Reinhart (1997, 1998, 2005), it is widely held that at least some of the problematic scopal behaviour of indefinites can be captured by the use of *choice*

functions.[13] Consider (5) again. The problem, as observed, is that we wish to capture the wide existential reading of the indefinite (*There is a certain philosopher such that if…*), but this is not captured by the following regimentation, which represents a wide scope 'unselective binding' of the individuals that satisfy the restriction in the antecedent of the *if*-clause:

(6) $(\exists x)[(\text{philosopher}(x) \wedge \text{invited}(x)) \rightarrow \text{annoyed}(\text{Bill})]$

The problem is that the falsity of the antecedent of a material conditional, which we assume for the reading of (5), suffices to render the conditional true, but then (6) would be true if there were an individual who is either not a philosopher or failed to be invited.[14] The truth of (5), on the other hand, clearly depends upon a particular individual who is a philosopher and has been invited. In other words, the problem is how to square the scoping out of the existential aspect of the construal with the *in-situ* reading of the restriction on the indefinite determiner. Choice functions promise to satisfy this dual demand.

A choice function f_n defined on a (non-empty) set picks out a unique element of the set.[15] So, f_1{philosophers} = Kant; f_2{philosophers} = Descartes; and so on. We may, of course, quantifier over such functions, and this holds the key to the problematic status of (5) and its failed interpretation in (6). Consider (7):

(7) $(\exists f)[\text{CH}(f) \wedge \text{invited}(f(\text{philosopher})) \rightarrow \text{annoyed}(\text{Bill})]$

> 'There is a choice function *f* such that if the element *f* selects from the set of philosophers is invited, then Bill will be annoyed'.

Assuming that the set of philosophers is non-empty, (7) may be formulated as *There is a philosopher such that if we invite him/her, then Bill will be annoyed*. As previously

indicated, this proposal has generated much debate. I shall focus, however, just on the question of the status of variables within the proposal and assume all other issues are equal.

Reinhart's proposal is that the wide-scope indefinite does not in fact syntactically scope out via QR, but is interpreted *in-situ* via the choice function, whose existential closure can freely apply (narrow, intermediate, or wide), this being an interpretive matter, not a syntactic operation.[16] Thus it is, according to Reinhart, that the existential closure of the variable is island-free precisely because it is not syntactically constrained and so is independent of other scope-taking items. The proposal, however, is not free of syntactic commitments. Reinhart (1997, p. 377-8) assumes the following kind of structure:

(8) $[_{DP}$ SPEC *f* $[_{D'}$ [a/some/...] $[_{NP}$ N]]],

Where D´ is of type <e, t> (a monadic predicate), including the determiner in head position. The SPEC position is filled by a covert choice function *f* of type <<e, t>, e>, i.e., a function that maps monadic properties onto entities. Here, the SPEC position carries quantificational 'force', so the indefinite determiner inherits its scope interpretation from the existential closure of the function.[17] In a sense, therefore, according to Reinhart, the syntax does contain a free choice-function variable in SPEC position just in case the SPEC position is otherwise free, i.e., the D´ is unmodified.[18] It is crucial to note, however, that such a variable is not interpretively free, i.e., its valuation is not contextually determined. The function is mandatorily existentially closed as an interface property, rather than being free to be interpreted discursively.[19] As Reinhart (ibid., p. 389) puts it:

> It is not that discourse properties are coded in the syntax (or formal semantics), but rather, independent properties of the human computational system (syntax) enable certain discourse uses. The choice-function procedure... generates options that discourse strategies can happily use. Since the choice function variable can be existentially closed at any point, on of the options is to do that at the (widest) discourse level, in which case the indefinite can be used for forming a discourse entity.

This is to say that the covert variable allows for a range of interpretations corresponding to the possible scope positions relative to other scope taking items and general syntactic constraints. The syntax delivers such freedom, but not via discourse options being encoded in the syntax in terms of possible valuations of the variables, but only in terms of how the DP may be interpreted relative to other scope-taking items, which means that the variable must be existentially bound; otherwise, it would take widest scope. Of course, one may utter (5) with a specific philosopher (a discourse entity) in mind, which we might take to determine a valuation of the free variable, but what is to be explained is how indefinites support a wide-scope and intermediate-scope construal along with the *in-situ* reading, not how a specific reading is enabled. The problem might be posed as follows: merely having someone definite 'in mind' is insufficient to explain the range of scope readings; after all, one may always have a restricted class 'in mind' when using a DP, but the scoping properties of the indefinite are not a uniform feature of DPs. So, however such specificity is brought about, it does not, on the face of it, compete with the choice function explanation of the scope behaviour of the indefinite; rather, as Reinhart

explains, the choice function analysis explains why there are such options. If all this is so, then, again, we do not have an example of a variable that might be free or bound.

Reinhart's analysis militates for my general claim as regards variables in syntax, but that doesn't make it correct, of course. The analysis, though, has clear empirical virtues quite apart from its alignment with my general theoretical hypothesis.[20]

Firstly, it is crucial to Reinhart's analysis that, *pace* Fodor and Sag (1982), the indefinite supports intermediate scope construal out of islands; in fact, according to Reinhart and Winter, such a construal should always be in-principle available in the absence of a stipulation. In order to test this, first note that intermediate readings are readily available.[21] Consider:

(9)a Each student has to come up with three arguments which show that that some condition proposed by Chomsky is wrong.

b Most linguists have looked at every analysis that solves some problem

c Most producers admire every song that has been written by some artist

d Every literature professor dislikes every novel that some author wrote

In all these cases the intermediate readings are readily available, even favoured. Such readings are where the value of the *some* DPs varies (depends upon) the matrix DPs' values. So, the relevant reading of (9a) is where each student has been asked to consider some or other Chomsky condition (not necessary the same one) and identify the arguments against that selected condition. The relevant reading of (9b) is where most linguists have some or other problem (not necessarily the same one) they have individually exhausted. The relevant reading of (9c) is where every producer has an artist (not necessarily the same one) such that they admire all of their material. Finally, the

relevant reading of (9d) is where every literature professor dislikes the output of some author (not necessarily the same one). Although such judgements can be questioned, I shall assume that the indicated readings are unproblematic. If this is so, then the Fodor and Sag (1982) hypothesis is not viable; for by Fodor and Sag's lights, if island-escaping is not to be sanctioned (the relative clauses containing the indefinites in (8) are all islands), then the indefinites must be referential and so take widest scope. So much offers decisive support for the choice function analysis, at least if in straight completion with the ambiguity hypothesis. The examples above, however, do not show that the intermediate readings are *always* available as predicted by the choice-function account. The initial kind of example Fodor and Sag offered appears to be at least not as available as the cases in (9). Consider again (4):

(4) Each teacher overheard the rumour that a student of Bill's had been caught cheating

A plausible response here is to claim that the intermediate reading *is* always available, but is often not as salient as the other readings, or requires a somewhat bizarre circumstance for it to be true; in other words, the relevant readings become available once suitably primed (cf., Ludlow and Neale, 1991, pp. 189-90, n. 24; Reinhart, 1997, p. 347; cf., Chierchia, 2001, pp. 53-4). So, the relevant reading of (4) is one where, for each of the teachers, there is some student of Bill's (not necessarily the same one) such that a rumour about their cheating was overhead by the teacher. It seems to me that such a reading is perfectly available. The difficulty in getting it is that its truth conditions involve a range of separate rumours connecting each of the teachers with respective students of Bill's. The point here becomes clearer if we consider again the cases in (9). For instance, (9b) seems to favour the intermediate reading because it reflects the

specialisation of linguists, i.e., most linguists have a particular problem (or a few) they focus on. The wide-scope reading is disfavoured because its truth would involve most linguists having exhaustively analysed some specific problem. The narrow-scope reading is also disfavoured as it involves most linguists having exhausted every analysis of some or other problem (perhaps the same one or perhaps every problem). Similarly, (9c) somewhat favours the intermediate reading as its truth conditions reflect individual producers admiration for particular artists. The wide-scope reading implausibly attributes a majority fondness for a particular artist. Similarly, the narrow-scope reading expresses a majority admiration for the songs of some or other artist (perhaps the same one or perhaps every artist). In short, the availability of a reading appears to depend on general plausibility rather than a syntactic or semantic condition.

A second empirical virtue of the account is that it smoothly predicts the impossibility of readings that an unselective binding account makes available. Consider negation:

(10) Bill did not reflect on the possibility that some philosopher was nepotistic

The wide-scope reading of (10) has the DP *some philosopher* scoping out of the island above *Bill*, which cannot be achieved by wide-scope existential binding over the individuals satisfying the *in-situ* restrictor *philosopher*. That analysis produces

(11) $(\exists x)\neg$[Bill reflects on the possibility that [philosopher(x) $\wedge$ nepotistic(x)]].

(11) approaches a tautology, for its truth just requires there to be something about which Bill didn't reflect on the possibility that it is a philosopher and nepotistic (a given polar bear would suffice). The same problem occurs without the scoping out of islands. Consider:

(12)a The students didn't understand some problem

b $(\exists x)\neg$[the students understood $x \wedge x$ is a problem]

Again, on the construal regimented in (12b), (12a) approaches a tautology, being made true in the case where there is something that is either not understood by the students or is not a problem. The choice-function analysis is constitutively free of such problems, for it delivers the following construals for (10) and (12a), respectively:

(13)a $(\exists f)$[CH(f) $\wedge$ $\neg$[Bill reflects on the possibility that [f(philosopher) is nepotistic]]]

b $(\exists f)$[CH(f) $\wedge$ $\neg$[the students understood f(problem)]]

A third empirical virtue of the choice-function analysis is that it caters for plural indefinites, such as numerical determiners. Consider (14):

(14) If three relatives of mine die, I'll inherit a house[22]

If we assume that the DP can escape the *if*-clause island via QR, we have the following analysis:

(15)a $[_{TP}\ [_{DP}$ three relatives of mine$]_i\ [_{TP}$ if t_i die, I'll inherit a house]]

b $(\exists_3 x)$[relative of mine(x) $\wedge$ [die(x) $\rightarrow$ I'll inherit a house]]

This provides a distributive analysis where each of the three relatives is such that if they die, then I'll inherit a house ('There are three things x such that x is a relative of mine and if x dies, then I'll inherit a house'). (14), however, only has a collective reading, where my inheritance depends upon all three relatives dying—I won't get the house, if just one or two of them die.[23] The problem here, of course, is perfectly general, for a collective reading cannot be captured by quantification over individual entities without further ado. The choice-function analysis immediately delivers the correct collective reading. In the example at hand, we take the D´ (*three relatives of mine*) to take a set of sets as value: {X: relative of mine(X) $\wedge$ three(X)}, i.e., the set of sets that include three relatives of

mine. The covert choice function correspondingly applies to such a set of sets and selects a set of relatives of mine that die.[24] Thus:

(16)a $(\exists f)[\mathrm{CH}(f) \wedge [f(\text{three relatives of mine})\text{die} \rightarrow \text{I inherit a house}]]$

b $(\exists f)[\mathrm{CH}(f) \wedge [f(\{X\text{: relative of mine}(X) \wedge \text{three}(X)\})\text{die} \rightarrow \text{I inherit a house}]]$,

In sum, there is much going for the choice-function analysis, both empirically and theoretically. It does have competitors, however. Here I shall only be concerned to show that whatever virtues these competitors possess, or, indeed, what consequent failings the choice-function analysis might possess, neither militates for the presence of free variables in syntax.

4: Kratzer and Chierchia: Free variable choice functions

Kratzer (1998) proposes a modification to the Reinhart and Winter account of choice functions, but it is one that centrally bears upon my general thesis concerning the absence of free syntactic variables. She writes:

> Following Reinhart, I take certain indefinite articles to be pronominal elements denoting choice functions. Unlike Reinhart, however, I take these choice functions to be contextually determined, often intended by the speaker, but not revealed to the audience [e.g., by way of priming linguistic material]... Reinhart assumes that the choice function variables introduced by indefinite determiners can be bound by freely inserted existential closure operators. This would predict that indefinites that have a choice function interpretation can escape from just any kind of scope island. But then the presence of bound variable pronouns should not make a difference... (Kratzer, 1998, p. 167)

Kratzer, therefore, endorses the kind of choice functions hypothesised by Reinhart and Winter, but claims that they are not mandatorily existentially closed (albeit freely in any scope position according to Reinhart And Winter); instead they are always free, with context or speaker intention determining the relevant selective relation. In this sense, the wide-scoping of indefinites is a matter of 'pseudo-scoping'. Kratzer further claims that such variables are parameterized by way of an implicit argument of the kind discussed above, and this item can be free or bound. In effect, then, Kratzer proposes two items that are inconsistent with my general claim concerning the absence of syntactic free variables (although Kratzer claims that the functional variable is not bound, of course it can be by a second-order operator). As it is, I think that Kratzer's principal arguments for such variables are questionable, as are further arguments to the same effect by Chierchia (2001). Before assessing these arguments, however, a question of their relevance arises.

Kratzer makes no assumptions or claims about the syntactic character of either of her putative variables: the choice-function variable and its implicit argument parameter. It seems as if she takes such items to be semantic. This is suggested by Kratzer's otherwise curious misreading of Reinhart's proposal. As quoted above, Kratzer takes 'certain indefinite articles to be pronominal elements denoting choice functions'. Later on the same page: 'For the specific interpretation of *some book*, for example, the context of use has to determine a choice function *f* as the denotation of *some*. *Some book*, then, denotes the book that *f* picks from the set of all books'. This is in line with Kratzer's (ibid., p. 170) general claim about *some* that it is ambiguous between a quantificational reading and a choice-functional singular reading. Even putting aside the matter of whether the choice function is free or not, this rendering does not correspond to Reinhart's

understanding of choice functions. Firstly, for Reinhart, choice functions are not the denotations of indefinite articles (*some*, *a*, etc.). As explained above, choice functions are the values of covert items in SPEC DP positions that take the values of D´ projections headed by the 'indefinite articles' as arguments. According to Reinhart, therefore, choice functions are not the values of the determiners, but are composed with such values in the host DP. Such a separation of choice function from determiner is crucial for Reinhart because it allows for the SPEC position to carry quantificational force, which gives a simple syntactic account of when a determiner is quantificational or not, i.e., whether it has moved to the SPEC position or not. This leads to the second point. For Reinhart, *some* and other indefinites are not ambiguous, as if they have two denotations. The difference between the quantificational or choice-functional readings is determined by the syntactic composition of the host DP; whether, in short, a choice-functional item is in the SPEC or not.

On Kratzer's view, therefore, it would appear as if the choice-function analysis is an account of the lexical content of indefinite determiners, not an account of syntactic composition. If this is so, then Kratzer is committed to what I have termed the second grade of variable involvement. This is all to the good, I think, for it is far from obvious what syntactic home Kratzer's variables might occupy (see below). That said, Chierchia (2001) does offer syntactic arguments for an aspect of Kratzer's analysis, which we shall get to, and it is worth considering the arguments anyway, for they do have consequences that, if true, would cast doubt on the Reinhart-Winter model. Hereon, then, one is free to read Kratzer's variables as one wishes, save for when we turn specifically to their potential syntactic realisation.

Pace Fodor and Sag (1982), Kratzer claims that intermediate scope readings of indefinites are available. She also contends, however, that such readings are 'facilitated' or 'preferred' in the presence of a bound overt pronoun in the restriction of the indefinite DP.[25] Consider:

(17)a [Every professor]$_i$ rewarded every student who read some book she$_i$ had reviewed for the New York Times

b Every professor rewarded every student who read some book I had reviewed for the New York Times

For (17a), the intermediate reading is where the set of relevant books vary with professors, i.e., the choice function will pick out potentially different books for different professors. Such an intermediate reading appears to be 'missing' for (17b), where the speaker (the value of I) would have reviewed a potential range of books, with each professor selecting one such book (Kratzer, 1998, p. 167). Before assessing this claim, it is well to note that Kratzer only claims that intermediate readings without a bound pronoun are 'marginal' or 'dispreferred' rather than ungrammatical or uninterpretable (ibid., p. 169). I shall return to this point below.

On the assumption that the difference exemplified in (17) is genuine, the question is why the bound pronoun should make a difference. As advertised, Kratzer's answer involves the positing of two covert variables, which serves to best explain, or, at any rate, explain the otherwise peculiar difference the bound pronoun generates. To see the point, consider the overtly specific indefinite *a certain* N. Hintikka (1986) proposed, in effect, that *certain* works somewhat like relational items, such as *local* and *enemy*, which appear to carry an implicit argument (local to *x* and enemy of *y*) (see previous njjmj). Consider:

(18)a Each husband had forgotten a certain date

b $(\forall x)$[husband(x) $\rightarrow$ had forgotten(x, f_i(date))]

(18a) is ambiguous between each husband having forgotten the same date, Thanksgiving, say, or different dates, but ones functionally specifiable generally in relation to each husband, such as his wife's birthday. The difference is regimented in (18b) in terms of how we value the function f_i, here parameterised with variable i. If the variable is left unbound, then the function f maps from the set of dates to some particular date contextually salient or otherwise intended by the speaker, such as Thanksgiving. Alternatively, if the variable is bound (f_x) by the preceding quantifier, then the function f maps every husband onto a function from the set of dates to a given date, such as their wife's birthday. So, the choice function f is left unbound to be contextually evaluated relative to the use of the sentence, and the implicit argument associated with the function can be either free or bound. Kratzer's crucial move is to suggest that 'on its specific interpretation, *some* has the same denotation as *a certain*. But unlike *a certain*, *some* has a quantificational interpretation as well' (Kratzer, 1998, p. 170). Effectively, then, (17) could be rendered as (19):

(19)a [Every professor]$_i$ rewarded every student who read a certain book she$_i$ had reviewed for the New York Times

b Every professor rewarded every student who read a certain book I had reviewed for the New York Times

So, the difference is explained by the bound variable in (17a) and (19a) serving to restrict the set of relevant books to professors, so that different professors yield potentially different books by way of the variable being bound by the matrix DP. Without the bound

variable ((17b) and (19b)), the indefinite DP naturally supports a referential (wide scope) reading. In terms of the choice function analysis, (17a), on the intermediate scope reading, is read with *some book* denoting a function whose implicit argument is bound by *every professor*, which yields a natural relation between each professor and some book, i.e., the particular book each professor had reviewed from for the NYT. For (17a), the idea is that the implicit argument remains free, contextually valued in context by the speaker, again yielding a natural relation for the choice function that maps each professor onto the same book, i.e., the one the speaker reviewed for the NYT. As noted above, for Kratzer, the contextual valuation need not be apparent to the audience, much as without some priming, it is not clear how to read (18a). That said, the readings offered of the cases in (17) are deemed to be the natural ones that are much preferred, for they don't involve the interpreter considering bizarre cases. So, a wide-scope reading of the indefinite DP in (17a) is 'far-fetched' as it would involve all of the professors reviewing the same book for the NYT (Kratzer, 1998, p. 169). Similarly, an intermediate reading of the indefinite DP in (17b) is considered 'very marginal' as it's truth would involve the speaker having potentially as many NYT book reviews as there are professors (ibid., p. 170).[26] Kratzer has much else to say (most of it fascinating) about her general proposal, but I shall assume that the above issues suffice for an assessment of the plausibility of the free variables Kratzer posits.

First off, we have to separate the status of the two putative variables (the choice function and the implicit argument). Matthewson (1999), on the basis of data from a Salish language, argues that Kratzer's account is correct insofar as an over bound pronoun is necessary for intermediate readings. She further claims, however, that it

makes no difference to the account if the choice function is mandatorily existentially closed at widest scope. Similarly, Chierchia (2001, pp. 56-7) points out that treating the choice function as a 'Skolemized function' delivers the same reading, whether we take the choice function to be contextually valued or closed in the manner Matthewson suggests.[27] Such relative technicalities aside, however, the idea that the choice functions are free to be contextually valued is problematic in two respects.

Firstly, recall that the functions are defined from the set of entities satisfying the restriction to an individual element of the set. As Szabolcsi (2010, p. 102) puts it: 'What can make such an "omnivorous" function contextually salient?' (cf., Chierchia, 2001, p. 56). The problem is that a given context will make salient a particular entity (what the speaker intended to be talking about), but the context won't make salient the set of all relevant entities from which the particular individual is selected. After all, if a speaker intends to be talking about *x*, and intends her audience (all else being equal) to discern that *x* is the topic, then why should the intention be about a selection from the set of all things *x*s? Indeed, it is not clear to me how one might even have such an intention or for it to be salient. Yet even if such an intention is formulatable and made salient, it would appear to be redundant, as just the selected object will suffice for the correct truth conditions. Of course, the restriction gives one the relevant set of entities (e.g., books reviewed in the NYT), but the question at issue is why that information needs to be the argument of a contextually valued function rather than just the existence of a function that is or is not dependent on other scope-taking items of the sentence. It is true that some relations are more natural than others or can be made more salient by way of priming or context; such was the point of the contrast between the cases in (52). Again, however, no

appeal to contextual valuation is required to bring about such divergence; an existence of a function with the relevant dependence on other items will suffice.

The kind of worry just rehearsed might appear to miss Kratzer's point, for she claims that indefinite determiners themselves denote choice functions with their argument sets provided by the DP restrictions, and if the DPs can take different scope positions without island contravention, then, trivially, it must be, in some sense, that the DPs can be evaluated differently given the scope ambiguity of the one sentence. Our worry, however, precisely concerns the thought that the choice functions are determiner denotations, for we have found no reason to think that the function itself needs to be contextually valued rather than for there just to be a function. If that is so, then the choice function should not be the denotation of the determiner, but a component of the composition of the value of DP, where the determiner may remain semantically invariant as might the choice function. The difference in scope construal just comes from the closure of the function, not from context. That is, the divergence of interpretation is not a matter of ambiguity or context-sensitivity.

The matter here is subtle, for the issue turns, as noted above, on whether, like Reinhart, one takes syntax to provide the options for discourse evaluation, or one takes such evaluation to be somehow encoded in the syntax, as a free variable would do. My present thought is that in the absence of a definite role for contextual evaluation to perform that is not equally served by just there being a function, then the latter option is to be favoured. In which case, as explained, the choice functions with their argument sets are not denotations of DPs, but values of covert items. My second argument against the

contextual valuation of the choice function pertains to the putative contrasts between constructions with and without bound pronouns in their indefinite DPs.

The above argument would be scuppered, if choice functions *were* somehow restricted in their interpretation relative to context. Kratzer takes it to be a condition on an adequate account of the scope construal of indefinites that it explains the difference a bound variable in the indefinite DP restriction makes to its scope options, the difference, that is, between such pairs as those in (17). The crucial issue here, of course, is that if the difference is somehow fundamental, then the Reinhart-Winter account would be in trouble, for its core claim is that the indefinite is freely bound in *any* scope position. If that claim is wrong, then it would, indeed, seem as if scope options are determined by extra-linguistic factors, such as those pertinent to fixing on a 'natural relation' to hold between the dependent DPs.

Kratzer (1998) does *not* mount such an argument as so baldly stated, but it is one she encourages us to entertain in a weakened form. Kratzer does not claim that the presence of an overt bound variable rules out any reading; rather, as we saw, it just makes certain readings 'very marginal' or 'dispreferred'. Kratzer, then, is not offering an empirical argument against the claim that choice functions can be bound in any scope position, i.e., we are not offered any data that tell us that such a reading is somewhere unavailable. Instead, the relevant data are that differences in availability of a reading are witnessed, and that this difference is best explained in terms of the choice function being contextually valued so as to give rise to the 'natural' reading in all but 'far-fetched' contexts. As so stated, though, the argument is a non-starter. The Reinhart-Winter account embodies no claim at all about the relative availability of the possible scope

construals of indefinite DPs; it merely claims that every construal is possible (narrow, intermediate, and wide), i.e., interpretable at the syntax-semantics interface. That a reading might be 'very marginal' or 'dispreferred' is not directly germane to the hypothesis, so long as it is available. What defenders of the Reinhart-Winter account owe, of course, is some story about the putative differences in relative availability of readings. As explained above, a plausible hypothesis here is that the differences simply arise from the relative plausibility of the propositions the sentences would express on the respective readings. So, Kratzer's intuitions concerning (17) are perfectly in order, but no contextual evaluation or discourse setting is required to see that, merely a reflection on the relative likelihood of the scenarios that would render the respective readings true. The presence of the overt bound variable, therefore, is strictly irrelevant; it merely facilitates or primes an intermediate reading, but it does not rule the other readings out. This impression is confirmed when one considers that intermediate readings are readily available with no particular priming at all. (9) provided some examples. Here is one ((9d) repeated as (20)):

(20) Every literature professor dislikes every novel that some author wrote.

(20), on the intermediate reading, states the not implausible claim that every literature professor has some particular author (not necessarily different ones) they loath. No particular priming or context is required to get the reading. It is somewhat favoured, but merely on grounds of what is generally plausible or what we might expect a speaker to bother saying. The wide-scope reading would mean that the total output of some (at least one) author is universally disliked by literature professors. The unanimity of the professors is perhaps not to be expected. The narrow scope reading, on the other hand,

seems too weak, for it would be true if the professors dislike every novel ever written.[28] Note that on the present view of the matter, there needn't be any strong preference one way or another in many cases. In some cases there are, such as those in (17), but as explained, this is readily explicable on general grounds of what is plausible.

This reasoning, even if sound, does not refute Kratzer's account; my intent is merely to show that differences in the availability of scope readings, whether in the presence of an overt bound variable or not, do not at all militate for the contextual valuation of the choice function. Otherwise put, the hypothesising of a contextually valued choice function to explain the relative availability of scope readings is idle, for differences in relative availability are not universal, do not necessarily depend upon particular sources of priming when witnessed, and succumb to a general explanation in terms of background plausibility of what would be said, which operates anyway and requires no special syntactic or semantic mechanism for its employment.

So far, I have argued against Kratzer's hypothesis that choice functions are contextually valued. If these arguments are good, then my general claim is supported that syntax contains no free variables in the intended sense. I have mounted no argument, however, against Kratzer's further claim that indefinites carry implicit arguments, much like *local*, *enemy*, and *a certain* on Hinittka's (1986) account. I shall fist say something quite general about the problems of fixing on what an implicit argument might amount to in this case. I shall then consider some arguments in support of Kratzer's account (at least on this point) from Chierchia (2001). Kratzer herself does not offer arguments for the implicit arguments beyond those she offers generally for the claim that choice functions

are contextually valued. As we shall presently see, though, the claims really do come apart; hence it is that Chierchia's arguments are especially interesting.

First, then, a question arises of how to understand the notion of an implicit argument. As argued for above, it is difficult to establish implicit arguments as syntactically projected items. Indeed, Partee (1989), to whom Kratzer (1998, p. bnmn) appeals, does not treat them as syntactically projected, at least not as regards 'relational' items such as *local* or *enemy*. Hintikka (1986), as regards *a certain*, is silent on the question. Still, it will suffice for our purposes if we understand implicit arguments as somehow part of lexical content that has a structural signature; in particular, they may be bound or free. A further background issue is the difference between an argument and a parameter. It was argued above that we can treat Kratzer's free functional variables as bound 'Skolem functions'. The question of the implicit argument variable remains, though. We can could treat it as an argument position of the function such that it takes values from the domain of the function, such as individuals or sets. Alternatively, we could take it to be a parameter of the function, where a value of the variable is part of the definition of the function such that its value range need not be included in the function's domain. For instance, we could parameterise the function to a type of relation, but define the function just over individuals (cf., Szabolcsi, 2010, p. 213, n. 55). I shall understand the presently relevant notion of an implicit argument in this latter sense. Chierchia (2001) offers a number of considerations in favour of such an account against the Reinhart-Winter model. I shall tackle each in turn and suggest that the underlying judgements are questionable.[29]

Chierchia (ibid., pp. 70-1) offers a case from Schlenker that, according to Chierchia (ibid., p. 71), 'shows that unmodified indefinites sometimes must have an implicit argument'.[30] Imagine the following situation:

(21)a Every student in the semantics class has difficulty with a specific point of the course.

A has difficulty with assignment functions (but understands the rest).

B has difficulty with generalised quantifiers (but understands the rest).

…

b So, if every student manages to understand some problem, no-body will flunk

The relevant question here is whether *some problem* can be existentially closed so as to capture the intended reading of (21b) in the situation described in (21a), i.e., the reading where, if every student improves in their one area of weakness, then none of them will flunk the class. Chierchia claims that none of the possible positions for closure will capture the reading. Binding the choice function outside of the scope of *every student* would entail that each student must manage to understand the same problem, if no-one is to flunk, which is contrary the intended reading, where each student must manage to understand a different problem. Binding the variable in the scope of every student entails that every student may manage some or other problem in order that no-one flunk, but, again, each student has a particular bespoke problem, as it were, they must overcome. Chierchia notes, however, that a parameterised 'Skolem function' captures the reading fine:

(22) $(\exists f)[[(\forall x)[\text{student}(x) \rightarrow \text{understand}(x, f(x, \text{problem})] \rightarrow \text{no-body will flunk}]$

The thought here is that the function *f* is paramterised as a type of relation, which in this case is valued as a 'difficulty with' relation, so the function does not relate students to problems *tout court*, but to the problems with which they have difficulty. This would appear to capture the intended reading.

Furthermore, Chierchia's general attitude appears to be that syntactic variables are cost-free, as it were. Chierchia (2001, p. 82) writes:

> It seems reasonable to assume that existential closure is a costly operation. Implicit parameters, on the other hand, are freely available, just as other null pronominal elements like, say, PRO. This is why when there is an option, the implicit parameter option must be chosen.

The reasoning here appears to be that, independent of the empirical matter of the existence of relevantly variable interpretations, implicit variables may be posited will-nilly for semantic reasons, as they come at no cost. So, even if the empirical facts do not cut in Kratzer-Chierchia's way, variables may still be posited with little or no justification beyond the general consideration here enunciated. Before looking at the empirical matter, let me put this current theoretical argument to one side.

Firstly, it is quite unclear what sense of cost Chierchia is working with. At any rate, the whole point of Reinhart's approach is that it incurs minimal costs at the syntactic level in the sense that it is unrestricted; all possible positions of scope interpretation are open. Existential closure is not a syntactic operation, but an interface condition on a speaker using or understanding a token of a relevant sentence at all In this light, implicit parameters are costlier than existential closure simply because they are additional representational items, whereas existential closure is not, at least not as regards syntax, or

what is represented as linguistic. The scope positions simply need to be available, which they must be on any position. Secondly, no item can be freely posited if its existence is to make a difference to whether and how a sentence may be interpreted. Evidence and consistency with accepted principle must be in place. Thus, as made clear in the last chapter, *pace* Chierchia, PRO is precisely not freely posited; its occurrence is strictly interpreted and limited to positions of a certain syntactic character. Likewise, if implicit variables are to be posited, then they too must answer to syntactic conditions, rather than be sprinkled about and imagined to exist exactly where they are needed, and then be appealed to as if they explain the phenomena that shaped their being posited in the first place. Independent evidence and principle is required for the existence of any aspect of syntactic structure. I have dwelt on these matters in the previous chapter, so let us move onto the empirical issue.

Chierchia is right that existential closure of *some problem* in (21b) cannot capture the intended reading as suggested by (21a) and that parameterisation would do the job as in (22). The problem I have with this argument, however, is that it remains unclear why we should want to capture the reading by way of specific linguistic machinery such as paramterised functions. Assume, then, that the choice function is existentially closed in the scope of *every student*, so that each student is mapped to some or other problem. This reading would be true in the situation envisaged, for the problems with which the students have difficulty but manage to understand are, trivially, instances of problems the students manage to understand. In other words, it is perfectly acceptable to speak of some problems even if one has in mind a particular type of problem; indeed, that one has a type of problem in mind that satisfies the relevant condition would constitute the basis for one

claiming that some problems satisfy the relevant condition. We might check this as follows. Imagine that the situation is as in (21a) and that the teacher of the semantics class utters (21b) to a colleague. It turns out, however, that the students didn't really much improve in their weak areas, but instead excelled in all other areas, which meant that no-one did end up flunking. In this situation, is it appropriate to deem the utterance of (21b) false? It seems clear to me that it is not. An appropriate reflection from the teacher might be, 'Well, they did manage to understand some problems, just not the ones I had in mind'. That the teachers expectations turned out not to be true does not, without further ado, render what she said on the basis of those expectations false. The point here is quite general. King (1988, p. 440) notes that one may utter a sentence with the from of '$(\exists x)Fx$' on the basis of thinking that Fa, such as an utterance of 'A friend/some friends bought it for me' instead of 'Jim (Bob, Harry, and Jane/) bought it for me'. The existential may be preferred for all kinds of reasons; for instance, one's interlocutor might not be familiar with the entities one has in mind, or one might simply find it tedious to list the relevant entities. In the situation at hand, a teacher might utter (21b) precisely because she doesn't want to go through the whole class, pairing students with problems.[31] Still, the consequence of her choice to generalise is that she says something weaker (or she utters a sentence whose truth conditions are weaker) than she would have done by enumerating the pairs of students and problems. If the teacher does want to hold herself firmly to account on the basis of students mastering their weak areas, then she would have to say something along the lines of, 'If every student manages to understand some problem they have difficulty with, no-body will flunk'.[32]

In sum, then, in the absence of a reason why we should want or expect a semantic or syntactic mechanism to encode the basis of our quantificational claims or their intended contents by way of our uttering them, I can see no reason for taking cases such as (21) as evidence against the unparamterised choice-functional analysis; in the present case, treating the indefinite DP as in the scope of the universal DP, which we need not even treat as choice functional (the DP has narrow scope). It is true, of course, that the paramterised analysis does capture the reading Chierchia has in mind. My claim here, though, is that we have no good reason to want to capture that reading, no more than, as a matter of semantics or syntax, we should want *Some man* to mean *Bill*, given the right context. The issue here might reduce—although I think not—to different conceptions of the task of semantic theory.[33] As it is, Chierchia does not rest his defence of Kratzer on cases such as (21). He seeks to show that 'always having a hidden parameter is a property that long distance *some* or *a* share with *a certain*' (Chierchia, 2001, p. 71). The argument on offer to this effect is especially interesting for my wider claims, for it associates the putative free variable with what appears to be a syntactic condition.

Recall that Kratzer treats (pseudo-scope) indefinites as semantically equivalent to *a certain* DPs, which she in turn treats, after Hintikka (1986), as containing an implicit variable that may be free or bound. Chierchia seeks to show that there is a syntactic concord in terms of so-called 'weak cross-over' effects between indefinites and *a certain* DPs that offers the best explanation of a puzzling phenomenon. In effect, Chierchia argues that the Reinhart-Winter model of free existential closure overgenerates, i.e., it allows a reading that is not possible. I shall first say something about weak cross-over.

A weak cross-over effect is the unacceptability of the referential dependence between a moved operator, its trace/copy, and an overt pronoun that (i) intervenes between the operator and its trace/copy and (ii) does not c-command the position of the trace/copy. So, consider (23a):

(23)a Who_i does his_i brother love <who>$_i$

b Which person *x* is such that *x*'s brother loves *x*

On the marked construal, *who* has moved out of object position and crossed over the pronoun *his*. (23b) spells out the unacceptable construal. Interestingly, the injunction against the relevant construal appears to apply where the movement of an operator is covert.

(24)a His brother loves everyone

b Every person *x* is such that *x*'s brother loves *x*

As with the overt *wh* case, it here seems as if the moved item *everyone* cannot simultaneously (covertly) scope over and bind *his*. Of course, disjoint readings are perfectly OK in both cases. For present purposes, let us simply assume that the weak cross-over injunction is sound and that it has a syntactic explanation.

As advertised, Chierchia's claim in support of Kratzer is that indefinites (at least in some cases) pattern with *a certain* DPs as regards weak cross-over effects. The significance of this claim is that for *a certain* DPs to be subject to such effects would seem to show that they contained an implicit variable that blocks the relevant construal much as overt *his* does in the examples above. The argument is required to be somewhat more complicated than Chierchia (2001) presents it to be, but let us stick with the initial presentation.[34]

Chierchia (2001, p. 72) offers the following case:

(25) A certain technician inspected every plane

Chierchia (*op cit*.) judges that the wide scope reading of *every plane* is 'hard to get… [*A certain technician*] seems to have only the "referential" reading'. If we assume that this is so, then at least one possible explanation is that the inability to wide scope the universal is a weak cross-over effect, for the DP is otherwise in a position apt for movement, so there must be a feature of the sentence blocking such movement. Thus, if *a certain* carried an implicit variable, then the unavailability of the wide-scope reading would look like a weak cross-over effect:

(26) [[every plane]$_i$ [a certain$_i$ technician inspected <every plane>*i*]]

The unavailable reading here is one where each plane is inspected by potentially different technicians. By itself, of course, this tells us next to nothing about indefinites generally, for the effect described above is not witnessed once *certain* is dropped:

(27) A/some technician inspected every plane

(27) readily admits the scoping out of the object DP on the reading where each plane was inspected by potentially different technicians. As things stand, therefore, it is the role of *certain* that is blocking the subject DP being dependent on the object DP, which is hardly surprising, if we take *certain* to signal specificity. The mere referential character of the DP will suffice to block the relevant reading without recourse to implicit variables and weak cross-over. Chierchia (2001, p. 73), however, looks elsewhere for the effect of the implicit variable.

Imagine the following situation:

(28)a Student A was examined by every professor expert in binding

Student B was examined by every professor expert in QR

…

b Every student was examined by every professor expert in some area

According to Chierchia (2001, p. 73), (64b) 'readily lends itself to describe situation' (28a). Here, we understand *some area* to take intermediate scope and to depend on *every student* and scope over *every professor,* so that students were examined by potentially different or the same professors. The twist here comes from considering the active counterpart of the passive (28b):

(29) Every professor expert in some area examined every student

Chierchia (op cit.) claims that 'it is intuitively clear that [(29)] is hardly apt to describing situation [(64b)]'. The relevant reading is described as 'impossible' and 'ungrammatical' (ibid. p. 73/74). Chierchia (ibid., p. 74) further suggests that the phenomenon is general, where, for example, (30) does not admit the reading on which for each man *x* there is some member *y* of the royal family such that *x* told several stories about *y*.

(30) Several stories about some member of the royal family were told by every man present

Chierchia makes two claims from these data. Firstly, the unacceptable readings would be explained were the indefinites to carry implicit variable, for if they did, then the movement of the universal DPs in (29) and (30) would cross over the variables associated with the indefinites in the respective PP adjuncts; further, implicit variables on such readings of intermediate scope for the indefinites must be bound in order to acquire the dependent reading as opposed to the local existential reading (i.e., *some or other area/member of the royal family*). Secondly, since the Reinhart-Winter account takes

existential closure to be freely applicable, then the unacceptable readings would be generated on that account (recall, there is no syntactic constraint on the universal DPs otherwise moving), which amounts to a false prediction, i.e., the Reinhart-Winter model overgenerates.[35]

Chierchia's reasoning is ingenious, but it fails to be convincing, I think.[36] First reflect on the case of (26) and (27). As noted, the contrast, such as it is, does not in fact militate for the existence of an implicit variable associated with indefinites, for the cross-over effect is absent when *certain* is absent. Of course, this is perfectly consistent with *a certain* being associated with a variable and indefinites generally having associated variables when 'referential', but if we were looking for a *syntactic* signature of all of this, then there is not one to be found here; after all, if *certain* does carry a specificity presupposition, then that would block the wide-scope reading of the object DP without appeal to an implicit variable. As it is, however, I think the presence of a weak cross-over effect in (26) is questionable. Imagine a situation where there is a range of technicians with specialised expertise: an electrician, a wheel mechanic, a wing technician, and so on. Furthermore, each of the relevant planes has some detected malfunction, such as faulty landing gear, wrong wiring, and so on. Let each of the planes, therefore, be inspected by the relevant technician with the relevant expertise. In such a scenario where all information is shared, one could utter 'A certain technician inspected every plane' and be expected to be understood as truthfully saying that each of the planes was inspected by the relevant technician. *A certain technician* would here pick out technicians that vary with the relevant fault on each of the planes. Such a reading would amount to the universal DP scoping over the *a certain* DP.

I happily admit that the reading entertained is not the most salient one in the absence of a priming context, but that is irrelevant. If we are taking weak cross-over to be a strict constraint on grammaticality, as Chierchia intends, then no context at all should allow for the cross-over reading. Anyway, if sound, then the reading offered would appear to show that *certain* carries a specificity presupposition, but does not carry an implicit variable that enters into syntactic configurations, for if it did, the relevant reading would be impossible. A mere potential clash of intuitions is never an edifying point to settle on, but since Chierchia, and others in this area, rest central planks of their argumentation on quite subtle data points, questioning these points is worthwhile, and is often all that one can do. Still, a further consideration in favour of the reading on offer, or at least a consideration that might make the reading more palatable, is that the specificity of *a certain* need not be denied. The specificity at issue does not necessarily referentially pick out a specific value of the nominal complement of the determiner (e.g., a definite technician), but rather serves to distinguish values of the nominal complements, which may be dependent on a higher DP. In that case, the values are distinguished by *certain* in terms of whatever distinguishes values of the nominal in the context at hand, such as an area of expertise. In effect, this interpretation renders *a certain technician* as equivalent to *a certain kind of technician*. If *certain* introduces an implicit variable in the first case, then there is no reason why it shouldn't do so in the second case. For instance, *a certain kind/type/style of N* supports free and bound readings much the same as *a certain N* does.[37] If, however, *a certain kind of technician* substitutes *a certain technician* in (26), then the wide-scope universal reading is far more accessible.

I think, therefore, that the basis for claiming that *a certain* actually gives rise to weak cross-over effects is fairly uncertain. If that is so, then the case for *a certain* carrying an implicit variable is equally weak (in the absence of independent evidence). On this view, then, there is little mileage to be gained in showing that indefinites on the relevant construal pattern with *a certain*, for so much would not suggest that indefinites carry implicit variables. In fact, as we saw, indefinites do *not* generally pattern with *a certain*. This is consistent with Kratzer's ambiguity of usage thesis, according to which we might treat the scoping over of indefinites as cases where the indefinites are quantificational. Still, none of this positively supports Kratzer's thesis, for *every* account should predict that indefinites can be scoped over, if for no other reason than that indefinites can be simply quantificational (narrow scope). Furthermore, there is a ready explanation available for the difference *certain* makes, *viz.*, it carries a specificity presupposition, which does not involve the syntactic projection of an implicit variable or even the presupposition of a unique value, if my above scenario is sound. Even if this is all on the right lines, however, the other data Chierchia appeals to remains to be explained.

Chierchia's principal claim is that passive and active forms involving indefinites admit different scope possibilities and that this situation would be explained were the indefinites to carry implicit variables, i.e., the relevant readings where the indefinites are scoped over would constitute weak cross-over violations. I think this explanation is at least questionable.

Again, reflect on the pair:

(31)a Every student was examined by every professor expert in some area

b Every professor expert in some area examined every student

Chierchia thinks it is 'intuitively clear' that (31a), but not (31b), can be true when, for each student, every professor expert in a given area examined the student. The judgements here strike me as all too subtle, especially when it is borne in mind that the relevant issue is not whether a reading is likely or readily available, but whether it is *possible*. I shall return to this issue shortly. Even assuming, though, that there is a substantive difference between the cases in (31), it is not clear that it is due to a weak cross-over effect.[38]

Note that weak cross-over applies to any *wh*-tem or quantification. In particular, the injunction applies to indefinite ('weak') and universal ('strong') quantification equally. So, (32) patterns with (24):

(32)a His brother loves someone

b Some person *x* is such that *x*'s brother loves *x*

All else being equally, therefore, if weak cross-over rules out the wide scope reading of *every student* in (31b), where professors are dependent on students (each student was examined by a potentially different professor), it should equally rule out the wide scope reading of *some student* in (33):

(33) Every professor expert in some area examined some student

By itself, this is no problem for Chierchia, for the crucial condition is that *some area* is construed with intermediate scope to be bound by the raised DP, rather be interpreted locally as an existential in the scope of *every professor*. The relevant reading, therefore, is where there is some student such that there is some area of expertise such that every professor expert in that area examined the student. On this reading, if the student was

examined by professors with different areas of expertise (*some* as *any*), then the sentence would be false. I think it is clear that (33) supports the specified reading with wide scope *some student* and intermediate scope *some area*, but it minimally varies with (31b); crucially, the variance pertains just to the choice of determiner, which does not affect both structures being subject to weak cross-over constraints and both structures taking *some area* to have intermediate scope on the intended reading.[39] Furthermore, substitute *some students* for *some student* in (33) and the result appears to support (is true in) the situation described in (28a), at least more readily so than (29) (= (31b)). Imagine, a situation where one does not know the identity of the students, but knows that there were three of them, each of them studying a certain area of syntax, and that out of the professors, all and only those expert in the relevant areas were on examination duty. In this situation, it seems pretty plain that one could utter 'Every professor expert in some area examined some students' in order to mean that student A was examined by all professors expert in one area; student B was examined by every professor expert in some other area; and student C was examined by every professor expert in still some other area. Again, if so, then (29) (= (31b)), whatever its other failings, should not be a weak cross-over violation on the intended reading, for (relevantly) equivalent structures support equivalent readings *contra* the assumption that the structure with the intended reading amounts to a weak cross-over violation.

If the phenomenon Chierchia points to is not a weak cross-over effect, then what might explain it? It seems to me that neither sentence of (31) readily lends itself to the intended reading, which in both cases involves a departure from the surface scope relations. (31a) is most felicitously read with *some area* taking narrow scope, and the

other scope relations being as presented on the surface. This produces the trivial reading where each student was examined by all of the professors (not necessarily different ones) expert in some area or other (potentially the same area). (31b) is similarly most felicitously read with *every student* taking narrow scope and the other scope relations being as they appear on the surface. This produces the reading where each professor expert in some or other area (not necessarily a different area) examined every student. So, assuming that the surface scope relations constitute the most available reading, all else being equal, we should find the intended reading hard to get for either (31a) or (31b), which appears to be the case. Chierchia is right, though, at least in thinking that (31a) is more apt to express the intended reading than (31b). If we give up on weak cross-over and, perforce, implicit variables, an explanation of the difference might be merely iconic. The intended reading has *some area* scopally dependent on *every student*, which is a scope relation (31a) realises on the surface. (31b), on the other hand, realises a surface scope relation where *every student* is scopally dependent on *some area*, making it relatively hard to comprehend. (33), on the other hand, involve she same quantifier some in the relevant interaction, which appears to offer no interference. I offer this as a suggestion. As indicated, the readings involved are sufficiently subtle involving quite complex sentences that we should be wary of resting any major claims upon their status.[40]

In sum, then, I can see no good overgeneration argument here against the kind of free existential closure Reinhart and Winter propose. Both of them readily admit that not all readings will be equally available, but their claim is that the relative availability of scope readings is not a matter to be explained by syntax or semantics, but wider cognitive

factors. Whatever the ultimate truth of this view might be, I can see no evidence from Kratzer or Chierchia that some readings of the scopally possible ones are syntactically-semantically illicit. Furthermore, this being so, there appears to be nothing here that requires explanation by way of a free variable (functional or parametric/argument) instead of a closed function. In which case, the Reinhart-Winter model is corroborated in allowing all scope relations to be possible in the sense of being free to be bound at each of the relevant sites of dependence between DPs. More generally, if the above considerations are sound, my general thesis of the absence of free variables within syntax remains in place.

5: Domain restriction

As noted in the previous chapter, implicit domain restriction has become a popular if not dominant approach to various semantic phenomena pertaining to contextual valuation of DPs and other quantifier-like expressions, including indefinites. First, let me offer some brief words by way of recap.

The basic idea of domain restriction is that a covert variable is associated with an overt lexical item, such that the value of the item is the intersection of its literal value and the value of the variable as either bound or contextually valued. So, imagine a context where one is hearing breaking news of a maritime disaster, and someone utters, 'Unfortunately, most passengers failed to make it into the lifeboats'. Obviously, talk of passengers and lifeboats here will be construed as pertaining to the passengers and lifeboats of the particular ship at issue, not some other ship, such as the Titanic, or, indeed, passengers and lifeboats *as such*, but no mention of the particular ship occurs in the sentence so as to restrict the values of the two DPs (*most passengers* and *the*

lifeboats). Indeed, no party to the conversation need know what the ship is called, or much of anything else about the ship. Here we could think of an implicit domain restriction as a species of variable assignment associated with the putative variables of the two DPs, where the values of the DPs are narrowed to just those objects that are conversationally pertinent. We might think of the subject DP, therefore, as being read as $[_{DP}$ *most passengers*$]_x$, where '*x*' is, in the present context, is valued so as to restrict the value of the DP as a whole to most passengers on the ship in question, mutatis mutandis for *the lifeboats*. Thus, the sentence's truth conditions may rightly bear on the particular ship at issue.

The phenomena that domain restriction is here supposed to explain are hardly questionable, i.e., when we talk of every/some/most N we rarely, if ever, intend to talk with utmost generality, but instead have in mind a restricted domain.[41] The basis of domain restriction, however, is far from settled; whether, that is, domains are restricted syntactically, semantically, pragmatically, or via some admixture of all three factors. In effect, in the previous chapter and this one, I have been arguing against the notion of a syntactic free variable, which just is a species of the idea of treating domain restriction as a syntactic phenomenon, i.e., the first grade of variable involvement. This approach is championed by Stanley (2000, 2007), Gendler-Szabó and Stanley (2000), and Martí (2006), as discussed in the last chapter. Treating domain variables as purely semantic items, or theoretical artefacts, are also options, of course, but ones in line with my general thesis (cf., Westerståhl, 1985; Partee, 1989; von Fintel, 1994).[42] In this sub-section, I shall consider Schwarzschild's (2002) domain restriction account of indefinites and argue that the account does not advance the case for syntactic free variables.[43]

Schwarzschild characterises what we calls a 'singleton indefinite' as an indefinite DP whose restriction has a singleton extension on a given occasion of use by way of the restriction's semantic value being narrowed by an implicit contextual valuation much in the way of the sinking ship example above.[44] This effect, of course, as Schwarzschild (ibid., p. 294) notes, applies to every quantifier. One may, say, use *most/every/few men* to speak about just one man who is somehow contextually salient, and so, in such cases, the restriction *man* is narrowed to a singleton extension. Also note that on this model, the truth conditions of the intended proposition pertain not to a specific individual, as on the Fodor and Sag (1982) account, but whichever individual it is that satisfies the relevant singleton restriction. I shall return to this question of general applicability below.

If we assume that some such contextual restriction applies to indefinites, then it appears to explain their peculiar scopal behaviour, or their 'ambiguity', at least in many instances. In short, indefinites do not have quantificational *and referential* occurrences; instead, they are uniformly quantificational, but on occasion are construed as having singleton restrictions, which accounts for their wide-scope or specific readings. Schwarzschild (ibid., p. 293) puts the point in terms of the singleton restriction bringing about a 'scope neutralization', i.e., the narrow or in-situ reading of an indefinite DP can be equivalent to a wide reading, if the indefinite is a singleton, for the narrow restriction will simply mimic a referential reading:

> When it comes to scope possibilities, singleton indefinites are just like singular definite… [T]he special properties of singleton indefinites have led to the mistaken belief that indefinites have readings in addition to or instead of run of the mill existential readings.

The immediate problem with such an account, of course, is the possibility of intermediate readings. Schwarzschild (ibid., pp. 296-7) offers a two-part answer. If an overt pronoun is present in the restriction, then it can be straightforwardly bound by the higher quantifier to generate the dependent intermediate reading. If no pronoun is present, as in the cases discussed above, then an implicit contextual restriction is in play, which, if explicitly spelt out, would contain a bound pronoun. Consider, again, an intermediate case:

(34)a Most linguists have looked at every analysis that solves some problem

b Most linguists have looked at every analysis that solves some problem *that they have worked on most extensively*

The relevant reading of (34a) is one where *some problem* is dependent on *most linguists*, not *every analysis*, i.e., most linguists have a pet problem of which they have examined every analysis. This construal, if spelt out as in (34b), makes the intermediate scope of the indefinite dependent on the contextual restriction, which links *problems* to *linguists* by way of the bound variable *they*.

As noted, Schwarszchild thinks of his account as 'pragmatic' in the sense that the scope behaviour of indefinite DPs is a matter of their restrictions on occasion being construed as singletons; there is no invariant feature of indefinite DPs' syntax or semantics that differentiates them from other DPs. As for the covert variables themselves, as spelt out in (34b), Schwarszchild (ibid., p. 297, n. 8) writes:

> The phrase 'contain bound variables' should be taken loosely. It is quite possible that there are actual variables there, as in the Stanley and Gendler-Szabó account,

or it might be that there are just meanings that could be spelled out with bound variables.[45]

Such neutrality is perfectly appropriate, for the explanation on offer doesn't demand a definite position on the status of the 'contextual variable'. Still, Schwarzschild's account does offer succour to the defender of 'Stanley and Gendler-Szabó account' as opposed to the choice-function position insofar as both accounts appear to make essential appeal to a variable. Thus, one might have independent reasons for thinking that the variable is syntactically realised, or, like Chierchia (see above), think that such variables are cost-free, so may be posited where apparently needed. At any rate, neutrality in any domain is liable to pressure precisely because it marks an unanswered question. Our question, then, is: Do Schwarzschild's arguments lend weight to the thesis of syntactic free variables? I shall first consider Schwarzschild's discussion of cases, which he intends to be problematic for the Reinhart-Winter analysis. After that, I shall turn to his theoretical considerations. In both cases I shall conclude that the Reinhart-Winter model remains essentially unmolested, and so no case for syntactic free variables may be properly advanced on the back of Schwarzschild's considerations.

Firstly, the kind of cases that Schwarzschild presents as problematic for a non-contextual account of indefinite scope behaviour strike me as unproblematic. The cases are ones where an unrestricted quantification generates the wrong reading: 'at least some contextual narrowing of the domain in question must be admitted' (Schwarzschild, 2002, p. 299). A range of cases could be considered here, but two will suffice, for the diagnosis I shall offer about what goes wrong for the cases is general. Consider again cases of wide-scope numerical indefinites:

(35) If three relatives of mine die this year, I will inherit a house

Recall that the Reinhart-Winter model treats this case as involving a closure of a choice function that selects a set of three dead relatives from the set of sets of three relatives. Schwarzschild (ibid., p. 299) rightly points out that 'indiscriminately quantifying over' relatives will fail to capture a specific reading. For instance, (35) could easily be false on the specific reading, where, say, one of the three uncles who died didn't prepare his will properly. On the other hand, it is very hard for (36), which Schwarzschild takes to be the wide-scope paraphrase of (35), to be false; indeed, if we are all related to each other, just the existence of three other persons will render it true by rendering the antecedent of the conditional false:

(36) I have three relatives such that if they all died this year, I will inherit a house

Schwarzschild is not clear what the exact problem is meant to be here. The Reinhart-Winter account is not designed to cater for the case where one has three specific relatives in mind, such as one's three maternal uncles. The account, rather, is supposed to explain the wide-scoping of the DP, which is mandatorily read collectively in (35) and does not appear to require a specificity about the entities truth-conditionally relevant, such as the three relatives one might have in mind. The case at hand, therefore, does not lumber the Reinhart-Winter model with the 'vacuous reading' problem an unselective binding account faces where there needn't be any relatives at all (see §3). The model does provide a genuine wide-scope reading that is constrained by the lexical restriction, i.e., there does have to be three relatives who collectively are such that, etc.

Since all that is so, it seems that Schwarzschild's intended claim is that the wide-scope effect of indefinites is due to their specificity, for the non-specific wide-scope

reading is unavailable, in which case there would be no need for choice functions and their wide-scope closure.[46] If this is the claim, though, then it looks to be plain false, or, at any rate, unsupported by the examples on offer. For instance, it is clear, in the present case, that one might not know the identity of the relevant relatives or any distinguishing property of them, but still know that one's inheritance turns on some set of three relatives as opposed to at least three or other relatives. If one were told, 'If three relatives of yours die, you will inherit a house', one would naturally ask, 'Which three?', and be mightily bemused if the response were, 'Oh, just any three'. The facts of inheritance don't work like that. So much tells us that the DP *three relatives* is naturally read with collective wide scope in the example. One would, as indicated, naturally be interested to discover the identity of the relatives, but the question of the identity of the relatives is a matter made salient by the wide-scope reading rather than entailed or presupposed by it. A coherent response to 'Which three?' in the imagined dialogue above could be 'I don't know. I have yet to speak to the solicitor', which amounts to the expression of the wide-scope reading with a denial of specificity. I shall return to this issue shortly.

Furthermore, the difference between (35) and (36) does not strike me as relevant. One could happily live with (36) as a faithful recording of the truth conditions of an utterance that admits the vacuous reading, but rule out the false antecedent construal by way of a general presupposition in favour of assenting to conditionals only if they have true antecedents. This position does not deny the material conditional reading, but merely tries to explain the obvious trouble speakers have with it. On some such account, speakers do not reflect on the false antecedent cases, even though they are consistent with the truth conditions of their utterance. So, indeed, speakers of (35) do not intend to make

highly weak claims, and they typically do not do so, thanks to audiences favouring stronger readings, but none of that shows that the sentence used to communicate the stronger reading is not perfectly apt as it is to express the highly weak claim.[47]

As a second example, consider (34a) again along with Schwarzschild's paraphrase of the intermediate reading:

(34)a Most linguists have looked at every analysis that solves some problem

b Most linguists have looked at every analysis that solves some problem *that they have worked on most extensively*

Schwarzschild's (2002, p. 303) complaint is again that an unrestricted quantification over the relevant domain will admit vacuous construals that are not the ones intended. With regard to (34a), then, consider the case where there is some undiscovered problem *p*, which, *qua* undiscovered, has had no analyses presented for it. It seems that (37) is vacuously true:

(37) Most linguists have looked at every analysis that has been proposed for *p*,

which renders (34a) true in the case of undiscovered problems. That, however, is not the intended reading, which is spelt out in (34b); linguists don't get to exhaust the analyses of a problem by there being no analyses at all, but rather by having the problem as the focus of their work. So, the trouble for the Reinhart-Winter model here is that mere existential quantification over problems does not rule out undiscovered problems, and restricting the domain to discovered problems just is a way of contextually restricting the domain.

As with the previous case, I do not see the vacuous reading as being a problem for the Reinhart-Winter model, which is not designed to capture intended meanings across the board, but only wide-scope readings that otherwise contravene island requirements. In

particular, then, Schwarzschild is perfectly right that unrestricted existential quantification over problems (or choice functions defined over problems) does not rule out undiscovered problems, but it need not do so. Again, there is a general presupposition in favour of non-vacuous readings across the board, which readily explains why the vacuous reading is highly non-salient. Still, (34a) can be used just as it is to express the vacuous reading, which is in no sense semantically deviant.

As before, Schwarzschild might think that the intermediate reading is only available thanks to a specific reading, but that is not so. Firstly, as just noted, (34a) perfectly admits the vacuous reading, which is intermediate and non-specific. Secondly, as Hawthorne and Manley (2012, pp. 132-3) point out, (34a) readily admits a 'tie case' , where, say, most linguists do not in fact have a particular problem they have exhaustively analysed, but rather have a couple or a few such problems. In this case, the indefinite is not a singleton, but still takes wide scope.[48]

Finally, the paraphrase Schwarzschild presents in (34b) is problematic. It is unclear how Schwarzschild intends to understand such paraphrases. Obviously, the paraphrases cannot be so definite as to make explicit the unique content of the relevant target utterances. Different speakers may mean all sorts of things in terms of specifying some problems, say, and hearers more often than not have little much to go on to identify what the speaker had in mind other than the utterance itself. Schwarzschild understands all of this (see below). It seems, therefore, that the paraphrase is offered merely as someway of specifying the intermediate reading, or, anyway, the relevant scope relations, by way of introducing an explicit bound variable. The problem, however, is even if most speakers of (34a) would have in mind some restriction that anaphorically links the lower indefinite to

the higher DP, no such relation is required to generate or license the bound reading. An unadulterated intermediate reading is available where the speaker has no particular problems in mind at all and no singleton restrictor property either. That this reading is not preferred, perhaps tells us not that it is unavailable, but that the reading precisely needs to be primed in a way that anaphorically links the two DPs. Whatever the case might be here, a non-specific intermediate reading is demonstrated by the 'tie case'.

It is well to be clear about the dialectic concerning these cases.[49] I agree with Schwarzschild that domain restriction is quotidian, the norm even. I further agree that the process of restriction is pragmatic, if for no other reason than that it appears to lack any specific linguistic signature. What I am disputing is that this situation creates trouble for the Reinhart-Winter model. So far as I can see, it does not, precisely because the model allows all scope readings with free closure, and is perfectly consistent with many further layers of pragmatic enrichment narrowing or broadening domains relative to context. All I do insist upon is that none of this further machinery is specifically linguistic. In short, the model does not rule out any readings, so, without further ado, it cannot be refuted by some or other possible reading. The issue of dispute now devolves upon how the relevant readings are best accounted for and whether certain readings should be possible. I have suggested above that the unrestricted existential readings are perfectly available, and are only pragmatically illicit. Further, the domain restricted readings *are* more readily available, but they need not be explained by any specifically linguistic mechanism, such as the choice function mechanism Reinhart and Winter offer, so the readings do not confute any specifically linguistic hypothesis about scope taking. Schwarzschild may be

happy with this conclusion. All he looses, if he indeed holds the view at all, is that wide-scoping indefinites are specificity effects.[50]

If we move away from the consideration of cases to reflect on Schwarzschild's theoretical arguments, we find again no compelling reason to think that domain restriction is an alternative explanation of scope behaviour in competition with the Reinhart-Winter model. There are, I think, three basic considerations that militate against a domain-restriction explanation of the relevant scope behaviour.

Firstly, as explained above, Schwarzschild takes 'relative scope neutralization' to be an effect of singleton domain restriction. Let's assume that singleton restrictions do, indeed, neutralise scope. It might appear, therefore, that all wide-scope indefinites just are cases of relative scope neutralisation. Schwarzschild seems to advance such an argument insofar as he only discusses the relative scope of indefinites and does think that domain restriction explains the wide-scope effect in such cases. What remains inexplicable on this account, however, is the wide-scoping of indefinites out of islands and other constructions, when no other scope-taking items are present; in such cases, there is no relative scope to neutralise. Of course, one might think that the singleton restriction turns the indefinite DP into something like a singular term, which gives it widest scope (cf. Schwarzschild, 2002, p. 293). The problem with this thought, however, is that if the singleton indefinite DP is akin to a singular term, the DP should not take intermediate scope positions, just as Fodor and Sag (1982) pointed out. As it is, indefinites take up all positions. So, whatever explains the scope behaviour of indefinites is not implicit singleton restrictions, but some other mechanism that involves relative scope taking. Furthermore, merely being singular or specific does not explain island escaping. For

example, *wh*-items cannot escape islands, but they may be specifically construed. If we sideline bigamy and polygamy, then marriage is a 1:1 relation. Still, *Who did you meet the man that is married to?* remains an incoherent question. Such generality of specificity leads to our second problem for the idea that domain restriction explains scope taking.

Schwarzschild appeals to the extant literature on domain restriction, including von Fintel (1994), Stanley (2000), and Stanley and Szabó (2000). Regardless of all other disputes in this area, however, it is universally acknowledged that domain restriction, if it applies at all and by whatever mechanism it operates, invariantly applies across DPs. The norm, in other words, is for token DPs to be domain restricted in terms of the proposition their host token sentences expresses. Trivially, mostly we have some restricted domain in mind as being truth-conditionally relevant when we quantify, but such restriction does not lead to uniformity in scope behaviour: strong or universal DPs do not scope out in the manner of indefinites, even though both are normally construed as restricted. All else being equal, therefore, indefinites should not be peculiar in their wide-scoping, if such scoping is due to domain restriction. Still, indefinites do peculiarly wide scope. Schwarzschild (2002, pp. 304-5) does not directly answer this concern, but does suggest that universal DPs carry a non-singleton (scalar) implicature such that if the speaker had in mind a single entity, then she wouldn't have used a universal DP to express the relevant thought, even though a singleton reading is consistent with a universal quantification: 'indefinites appear to wide-scope, because they can be singleton. Other quantifiers aren't singleton in most discourse situations, so they won't appear to take exceptional-scope [i.e., wide scope]' (ibid., p. 305). This consideration, although true as far as it goes, does not sufficiently capture the distinction between indefinites and other

DPs, for universals do not scope out as indefinites do even when construed as singletons; that is, cancelling the non-singleton implicature of a universal DP does not alter its scope options. In fact, the singleton restriction is not to the point. Any restriction to a definite collection of entities should have the same semantic effect as a singleton restriction, as the example of (35) attests, where the single entity is a collection or plurality. The important feature of restriction is that specific entities are truth-conditionally relevant, not that only one specific entity is so relevant. Again, this means that indefinites should, contrary to fact, scope in the same way as other DPs, given that most occurrences of all types of DPs are construed as domain restricted. In sum, domain restriction does not single out indefinites as peculiar among DPs; domain restriction is the norm across DPs. It follows that domain restriction cannot by itself explain the wide-scoping of indefinites, and no extra feature, such as implicature, appears available to mark the difference.

Thirdly, as we have seen, wide-scope non-specific readings of indefinites are readily available, albeit not the norm. Singleton restriction, therefore, cannot possibly explain the wide-scoping of indefinites where the construal is non-specific, but still wide-scope. It might be, though, that specificity is always present where wide-scoping occurs. Schwarzschild , following numerous others, including Fodor and Sag (1982), Ludlow and Neale (1991), and Kratzer (1998), appeals to an asymmetry between speaker and hearer (audience), which he dubs the *Privacy Principle*:

> It is possible for a felicitous utterance to contain an implicitly restricted quantifier even though members of the audience are incapable of delimiting the extension of the implicit restriction without somehow making reference to the utterance itself (Schwarzschild, 2002, p. 306)

This principle is intended to hold for all DPs, but we may just focus on indefinites. The principle seems correct for reasons already discussed. For instance, the fact that one can enquire as to the identity of the referent of an indefinite means that, as a hearer, one may understand that a restricted class of entities or a specific member of such a class is truth-conditionally relevant to the utterance of one's interlocutor without knowing which class or entity is so relevant, what the speaker 'has in mind'. In other words, there is an asymmetry between the speaker and hearer. The speaker potentially has lots of means of specifying the relevant restriction, which typically go unsaid. The hearer, on the other hand, often has no essential means at all of specifying the restriction the speaker has in mind other than by using the DP speaker used with the same intended content. The utterance will always provide sufficient descriptive material for the extension to be picked out by the hearer to the satisfaction of the speaker in the context. Granting all of this, one might think that implicit domain restriction is always in play, and so there are no cases of wide-scope non-specific indefinites; there only appear to be such cases due to one's attention being focused on the hearer. If one attends to the speaker too, then the appearance is revealed to be illusory, for the speaker, unlike the hearer, needs to have some specific domain or entity in mind.

It is unclear to me if Schwarzschild would endorse this line of reasoning; either way, it is unconvincing. While it is no doubt true that speakers generally do have specific entities in mind when wide-scoping an indefinite, they do not need to in order for the utterance to be felicitous. The speaker may lack the requisite information to specify the truth-conditionally relevant entity (/entities) and so be in a position akin to the hearer as characterised above, i.e., someone reliant on the descriptive material provided by the

utterance. It always seems coherent to deny the means of specifying the relevant singleton without making one's speech infelicitous, as, to appeal to the example above, one may deny any means of distinguishing the relatives whose death will result in the hearer's inheritance of an house. In effect, such would be a non-specific wide-scope indefinite. One can finagle this kind of scenario into something of a symmetry principle between hearer and speaker:

(SPHS) A hearer of an utterance involving a wide-scope indefinite, who is not in a position to specify the entity the speaker has in mind, can felicitously use the sentence she hears.

I say this is a symmetry principle, for it entails that there is no real difference between speaker and hearer, for the hearer is also a speaker, who, in both guises, merely needs to understand that a particular entity is truth-conditionally relevant, without having the means to specify the entity. My concern here is not to describe the typical case, but only a case that does not run counter to any conditions on semantic, syntactic, or pragmatic competence.

It might be complained that the relevant symmetry is not established between speaker and hearer by (SPSH). It is true, let's suppose, that a given agent could use and consume a wide-scope indefinite DP without being able to specify the singleton extension without the use of very DP itself. That is a symmetry internal to an agent. An inter-agent symmetry, however, is not thereby established, i.e., a sameness relation between the speaker who has something specific in mind and a hearer who lacks the means to specify the definite entity without the DP. One way of articulating this difference is that the speaker expresses a (Russellean) proposition featuring the object she has in mind,

whereas the hearer cannot entertain this very proposition, but can only entertain a more general proposition. I think we can happily accept this kind of asymmetry, for it just records the kind of situation where speaker and hearer do not share information. What does not follow from this asymmetry is that the difference between speaker and hearer is in any way linguistically marked, a matter of their linguistic competence. Perforce, it is not established that an understanding of the wide-scope indefinite requires a singleton restriction or, to put the point in the terms just used, the expression of an object-dependent proposition. So, the potential asymmetry there is between speaker and hearer is not a linguistic difference that enters into an explanation of specifically linguistic effects, such as wide-scoping.

In sum, therefore, I think Schwarzschild is correct to view domain restriction as the norm for DPs and is also right to view singleton restrictions as being at least a typical elicitor of wide-scope indefinite readings. Further, it seems correct to think of the mechanism that supports this pattern of restricted construal to be pragmatic, i.e., one that does not involve a fixed interpretation of a syntactic or semantic item, but instead goes via speakers' intentions. The only point on which we should diverge from Schwarzschild is how wide-scope indefinites should be explained. If the thoughts above are right, the exceptional scope effects cannot be explained pragmatically via singleton restrictions, no matter if singleton restriction is the pragmatic norm.

7: Concluding remarks

My aim over the last two chapters has not been to overthrow any particular way of pursuing syntactic or semantic theory, but rather to cast doubt on a way of conceiving of

the relation between the two. The relation, I think, is not as intimate as many philosophers of language imagine. As Partee puts it, some matters of interpretation appear to be 'rather holistic' bearing on the sentence as a whole, but syntactic relations seem to be local. One signature of this is the absence of variables proper in syntax. If I am right, therefore, we should happily indulge in first-level involvement with variables. The second-level involvement is a more complex matter, for it seems as if much of the work of variables can be done in their absence. The third-level involvement should be avoided, which casts doubt on the second-level involvement too, assuming that semantics should interpret or at least be constrained by syntax. Much, however, remains unclear about both syntax and semantics, but I hope that I have cast some light on how theories that putatively trade in variables should be sceptically assessed.[51]

Notes

[1] For example, if we take the denotation of $[_{DP}$ every boy] to be the set of sets that contain every boy, then we can take the denotation of $[_{DP}$ every boy$]_{f(x)}$ to be the set of sets that contain every boy that meets condition $f(x)$, which in context might be, say, having taken a particular exam, so the denotation of the DP is the set of sets that contain every boy who has taken some particular exam.

[2] Thus, compare:

(i) Who did everyone think was safe?

(ii) Everyone believed most passengers were safe

(i) is OK with *wh*-movement from the subject position of the embedded clause (there are so-called 'that'+trace effects here, but they are not relevant). On the other hand, (ii) does not have a reading with the embedded DP *most passengers* scoping over *everyone*.

[3] See Boeckx (2012) for an overview of islands. He concludes that islands are probably not syntactic. As I shall suggest just below, it doesn't make a difference to my argument whether islands are syntactic or not; what is important is that indefinites scope differently. Boeckx does not address the scopal behaviour of indefinites.

[4] Someone of a nihilistic bent might conclude that scope is a mess about which we should not expect to find any clean theory (cf., Culicover, NUTS). As we shall see, things are not *that* messy; in particular, a subclass of the indefinites do appear to be exceptional.

[5] The distinction between 'weak' and 'strong' determiners remains contentious. The core idea, deriving from Milsark (1977) and Barwise and Cooper (1981), is that the 'weak' determiners carry an existential commitment in a way 'strong' determiners do not. For our purposes, this rough notion will suffice. See Szabolcsi (1997, 2010) for excellent overviews of the apparently divergent ways of scope taking. Among the weak determiners, the class of exceptional scoping determiners appears to be restricted to the monotone increasing ones, but is not identical to them; see Endriss (2009, p. 122).

[6] See, for example, Partee (1974), Ioup (1977), Kripke (1977), King (1988), Neale and Lundlow (1991), Enç (1991), Farkas (2002), Schwarzschild (2002), Zimmerman (2006), Endriss (2009), and Hawthorne and Manley (2012).

[7] Ultimately, Fodor and Sag (1982, p. 383) claim that there is a truth-conditional difference between wide-scope existentials and referential indefinites. The latter entail the former, but not *vice versa*.

[8] According to Fodor and Sag, the narrow scope reading is non-specific, equivalent to *some or other student*, and the wide scope reading is specific and independent of any other scope-taking items, hence maximal.

[9] Ludlow and Neale (1991, p. 181) use the labels *strong* and *weak* specific uses to mark, respectively, an utterer expecting her audience to work out that the indefinite is being used about a particular entity and an utter having no such expectation. Abbott (2010, p. 273) rejects the very distinction between referential and specific uses on the basis of its supposed commitment to object-dependent Russellean propositions. I do not think the distinction carries the commitment Abbott supposes. It is enough if the speakers and hearers differ in their expectations in the ways indicated, which need not be spelt out in terms of the Russellean proposition intended; after all, one may note the indicated difference in expectation without seeking to offer any ontological gloss on it.

[10] This issue will be returned to at length in the following discussion of Schwarzschild (2002).

[11] Apart from the issues to be raised below, see King (1988) and Ludlow and Neale (1991) for arguments against an ambiguity approach to indefinites in favour of a semantic uniformity thesis that treats all indefinites as quantificational. Also see Hawthorne and Manley (2012, pp. 101-5) for a nice summary of problems with the ambiguity view. Although, as will become clear, I have little sympathy for an ambiguity approach, the heavy burden on any univocal approach is to explain the scopal behaviour of indefinites. To show that intermediate readings are available does not suffice to confirm the univocal approach, for indefinites remain peculiar. Ludlow and Neale (1991, p. 187), are correct, however, in noting that even if indefinites are semantically referential, a wide-scope

construal would still be required, since referential and wide-scope construals are not the same.

[12] The use of *certain* and other such modifiers aids the effect here, but they are not necessary for the island-escaping readings (see the above examples), and not even essential in the present case.

[13] Also see Winter (1997). Below I shall discuss an influential counter-proposal from Kratzer (1998), partially supported by Matthewson (1999) and Chierchia (2001), but it is worth noting now that Kratzer, Matthewson, and Chierchia all appeal to choice functions. The issue between turns on the of the existential closure of the choice functions.

[14] King (1988) correctly notes that the kind of problem exhibited by (41) does not arise if we forgo the straightforward material reading of the conditional in terms of either of the variant approaches offered by Stalnaker (1968) or Jackson (1976). After all, alternatives to the unadulterated material reading of the conditional just are ones that deny that the falsity of the antecedent is sufficient for the acceptance of a conditional. King's point, although true, does not weaken the motivation for the choice function approach. Firstly, one wouldn't want to be forced into a position on the highly contentious issue of the nature of the conditional in order to avoid the choice function analysis. Secondly, the analysis does not depend upon a material reading of the conditional anyway, for it is intended to apply generally and so offers an choice function analysis of the relevant conditionals, however understood; it is simply consistent with the material reading of conditionals.

[15] Choice functions can be defined on the empty set, but complicating the analysis in such a manner will not affect my considerations, so we may stay with the simple cases. See Reinhart (1997, pp. 388-93) and Winter (1997, pp. 434ff) for discussion.

[16] The account also embodies a freedom in the sense that, when taking narrow scope, the indefinite may be read as a quantifier or via a choice function narrowly existentially bound (Reinhart, 1997, p. 379, and Reinhart, 2006, pp. 101-23). For present purposes, I shall assume that the choice function analysis applies uniformly.

[17] Two technical points are worth noting. Firstly, Winter (1997) takes the choice function to be of type <<e, t>, <<e, t>, t>>, which, taking a monadic predicate of type <e, t> as argument, renders the whole DP to be of quantifier type <<e, t>, t>. On this account, the function would take its restrictor N to be an argument. For present purposes, I shall assume Reinhart's simpler account. Secondly, an assumption of the account is that where we have a normal quantificational interpretation, the determiner may move into the SPEC position (Reinhart, 1997, p. 378).

[18] It would be modified in cases such as *Exactly*/*at least*/*no more than* N.

[19] The position Reinhart is distancinging herself from is a so-called 'unselective binding' account, where quantification over individuals, not functions, can occur in wide-scope position (see Heim, 1982; and Kamp and Reyle, 1993). Reinhart borrows from such an account, however, the notion that existential closure can occur as a discourse effect, which needs no determinate syntactic mechanism.

[20] One key virtue of the account is that it offers an integrated account of ellipsis and sluicing phenomena (see Reinhart, 1997, and Winter, 1997, for the details). Below, I shall only highlight some virtues that directly bear on indefinites in relation to relative scope.

[21] The kind of examples below are offered by Farkas (1981), King (1988), Ludlow and Neale (1991), Ruys (1992), Abusch (1994), Winter (1997), Reinhart (1997), and Matthewson (1999).

[22] This much-discussed example is due to Ruys (1992, 1995). See Reinhart (1997, pp. 367-70/379-81) for discussion.

[23] The impossibility of wide-scope distributive readings has been contested (see Abusch, 1994; Matthewson, 1999; Geurts, 2002). The data are complex in this area, but what does seem clear is that the collective reading is always available and does not require focus or priming. On the other hand, the distributive reading is sometimes impossible, even when content of the sentence is coherent *only* on a distributive reading. Winter (1997, pp. 416ff) offers the following kind of example:

(i) If three women gave birth to Bill, then he has a nice mother

We cannot help but read the scoped out DP *three women* collectively, even though the predicate *gave birth* renders the content incoherent. On the other hand, read distributively, the content of (i) is OK. Imagine three women, all of whom are all nice. In such a scenario, one could truthfully say that three women are such that if one of them gave birth to Bill, then he would have a nice mother, which is just what (i) would 'say' on a distributive reading.

[24] There is a corresponding difference in type, where D´ is of type <<e, t>, t> (a set of sets just like a GQ quantifier) and SPEC *f* is <<<e, t>, t>, <e, t>>, which maps a set onto the set of sets. Of course, there is nothing untoward with such a difference in type properties from the singular case, for type properties are determined by the semantic

properties of the items, not by their syntactic position, which merely licenses the relevant composition.

[25] Also see Ruys (1992) and Abusch (1994).

[26] These are the relevant readings. The narrow scope readings are both quantificational so do not bear on the evaluation of choice function variables on Kratzer's account.

[27] A Skolemization is a contextual definition of an existential quantification over individuals in terms of a quantification of a function. If the existential takes wide scope, the resulting function has zero arity (the 'Skolem constant'). Thus, (ii) is the Skolemization of (i):

(i) $(\exists x)(\forall y)[\phi(x, y)]$

(ii) $(\forall y)[\phi(f, y)]$

Where the existential occurs in the scope of a universal quantifier, the function takes the values of the bound variable as arguments:

(iii) $(\forall y)(\exists x)[\phi(x, y)]$

(iv) $(\forall y)[\phi(f(y), y)]$

The Skolem functions are, in a sense, implicitly existentially quantified, as they are interpreted over the domain that satisfies the first-order formulae. So, (ii) will be satisfied iff the function *f* takes a value that satisfies the open formula formed by removing the existential quantification from (i). Similarly, (iv) will be satisfied iff $f(x)$ takes a value that satisfies the open formulae formed by removing the existential quantification from (iii). For example, if everyone is such that some person loves them, then everyone is such they are related to an entity such that that entity loves them, and *vice versa*. More perspicuously, therefore, we can take the functions to be bound by wide-scope second-

order quantifiers. Hence it is that leaving the choice functions free in Kratzer's manner is equivalent to taking the functions to be Skolem functions.

[28] It is worth noting that no intonation pattern is required for the relevant readings. Kratzer (1998, p. 167) suggests that the contextual valuation of a DP 'can be signalized by a pitch rise localized on determiners like *some* or *one*, followed by a falling pitch on the noun'. It is certainly true that such differences of pitch may prime a scope construal, but it is worth noting that no intonation pattern is required for the intermediate readings under discussion, just relative plausibility of what a speaker means to say. The case is different with echoic *wh*-questions, say, where the *in-situ* item requires stress for the interrogative construal to be supported (compare: *He said WHAT* and *He said what*).

[29] Chierchia (2001, 2005) develops a complex position that seeks a compromise between the Reinhart-Winter and Kratzer models. I shall here only be concerned with his arguments that directly bear upon the putative free variable.

[30] The original Schlenker source is unpublished, but Schlenker (2006) discusses the relevant cases.

[31] Ludlow and Neale's (1991) distinction between *referential* and *specific* uses of indefinites is might be appealed to here. As previously noted, a referential use is where the utterer intends to speak about a particular entity or, in our case, a particular relation or function, and intends the audience to recognise that such an entity is being spoken about. In the above scenario, this would be where, say, the teacher and her interlocutor share information about the respective weak areas of the students in the semantics class. A specific use is one where the utterer, again, has a particular entity in mind, but does not necessarily intend the audience to recognise what is being spoken about, perhaps because

the utterer believes that her interlocutor lacks the relevant information to pick out the object in question. In our case, this might be a scenario where the teacher's interlocuter does not know the details about the students progress in the semantics class. In either case, though, and this is Ludlow and Neale's point, the particular entity is only involved in either the grounds or basis for the utterance or what proposition was intended to be communicated (the two coincide in referential uses, but come apart in specific uses). In neither case does the entity enter into the sentence's truth conditions. Of course, this point does not directly map onto Chierchia's case, for he would claim that the relevant sentences remain open or truth-conditionally indeterminate in the absence of a value for the function parameter. My present point, though, is that we can precisely assign truth conditions to the relevant sentences without imagining a contextually supplied value for the parameter; the intended truth conditions may be referential or specific, but that does not entail that the sentence need have such truth conditions, or, rather, that the syntax supports a variable interpretation.

[32] Szabolcsi (2010, p. 213, n. 56) notes that Szabó suggested that cases such as (21b) are elliptical for the kind of fuller specification just given. I think this is essentially correct, although one need not treat ellipsis here as in any way syntactically or semantically encoded, but merely as what the speaker intended to put across.

[33] I do not mean this remark to be facetious. What counts as linguistic phenomena, and so what should be explained by linguistic theory proper, as opposed to an effect of wider cognition is the most fraught and difficult question there is. My project throughout this book is, in part, to try to isolate what is linguistic proper in a fairly narrow way (syntax plus lexicon), while being sensitive to the interactions between language, as so

understood, and wider cognition and the context of linguistic usage. As we shall see, Chierchia's seeking of a syntactic condition on the existence of the putative implicit variable is precisely the right methodology to follow by my lights.

[34] Note that were this argument to go through, it would only bear on bound occurrences of the putative variable, for weak cross-over only applies to cases where the pronoun is bound. So, weak cross-over should not apply to rule out cases where the indefinite is contextually bound. Chierchia (2005) seeks to articulate a general constraint on variable binding that is meant to be supported by the data he presents. On this view, contextual valuation of a variable is a species of binding and is subject to the same constraints as bound variable anaphora. Chierchia (ibid., pp. 168-9) proposes that the variable is λ-bound at the highest point of a structure. Movement of the object DP to generate the cross-over case would thus generate an intervening item between the λ-operator and the indefinite, for that operator will always occupy the highest scope position. In effect, therefore, it is not weak cross-over that explains the relevant cases but a minimality-like effect (Rizzi, 1990). This is problematic for three basic reasons. Firstly, I can see no reason to think that the λ-operator is a feature of the syntax subject to a minimality requirement and Chierchia does not offer any reason (see the above discussion of Heim and Kratzer, 1998, on QR). Secondly, even if the λ-operator is a kosher syntactic item, I can see no reason to think that it always takes highest scope; in particular, since the abstraction forms a singular term, it needn't take highest position syntactically in order to take widest scope. Thirdly, if a variable is contextually valued, then it should not be λ-bound, for being so bound make the interpretation of the most general, not specific. In other words, there would be no semantic difference between the sentence being open or

closed, but the very idea of the mechanism is supposed to be to capture the effect of contextual valuation as a species of variable binding. It looks, on the contrary, that the former case is conflated with the later.

[35] Chierchia (2001, p. 73-4) notes that (i) is OK on the wide-scope reading of *every student*, with *some professor* dependent on it:

(i) Some professor competent on some problem examined every student

The relevant property here is that on its 'intended reading' *some problem* is not dependent on *every student*, but has its normal local existential reading.

[36] Chierchia (2001, 2005) also seeks to articulate a general constraint on variable binding that is meant to be supported by the data he presents. One problem with this approach, however, is that the contextual valuation of the variable does not look to be a case of variable binding at all

[37] Consider:

(i) Most car salesmen end up selling a certain kind of car

This is ambiguous between a singular reading, where a continuation might be *namely, a Ford*, or a functional reading, where a continuation might be *namely, the one they drive themselves*.

[38] I am focusing on the examples Chierchia leads with just so as not to make the discussion overly complicated. Suffice it to say that I think that analogous points I make about one set of cases holds for another set. For example, as noted, Chierchia thinks it obvious that (30) does not admit the intermediate scoping of the *some* DP, with the wide scoping of *every man present*, for such a reading would amount to a weak cross-over violation.

(30) Several stories about some member of the royal family were told by every man present

As it is, I think (30) happily supports the reading Chierchia thinks impossible. To be sure, it is not the first reading that springs to mind, but as soon as it is primed, it seems readily available. If so, then there is nothing to explain here.

[39] That the putative moved item is an indefinite is not problematic here. If all wide-scope cosnstruals (widest and intermediate) are dealt with by closure of choice functions without QR, then the relevant reading should still not be witnessed according to the Kratzer-Chierchia position, if we take weak cross-over to govern referential dependence; for it would apply to the chain of variables realised by the closure of the two choice functions as much as if the lower quantifier was moved via QR.

[40] Chierchia (2001, 2005) also discusses attitude reports and conditionals as further evidence for free argument variables. His discussion of conditionals is somewhat complex and, in fact, only offers partial support for Kratzer's model. His discussion of attitude reports suffers from the same problems as his discussion of passive/active cases, save more so. Chierchia reckons that the 'natural reading' of (i) is *de r*e, where different people believe different Vermeers were stolen:

(i) Everyone was upset that a (certain) Vermeer was stolen

The *de dicto* reading is easily most salient for me and my informants, if for no other reason than the unlikelihood of a number of Vermeers being stolen. Be that as it may, (i) does support both readings. Chierchia (2001., pp. 75-6) holds that (ii) does not; it only supports the *de dicto* reading, i.e., the reading where everyone was upset by the same event/proposition:

(ii) That a Vermeer was stolen upset everyone

Chierchia's point in highlighting this putative contrast is that were *everyone* to wide scope in (ii) such that different people were upset by different paintings being stolen, then the structure would amount to a weak cross-over violation, which would explain the unavailability of the wide-scope reading of *everyone*. As it is, I find the supposedly impossible readings as easy to get for (ii) as for (i), with neither being preferred. It remains unclear to me whether anything here requires explanation.

[41] Of course, granting so much leaves the status of absolute generality entirely open.

[42] Etxeberria (2009) certainly favours an implicit variable account of domain restriction, but, in my terms, blurs the difference between first and second grades of variable involvement.

[43] Schwarzschild (2002, p. 8) presents his account as 'pragmatic' and does not situate variables in 'semantics proper or… syntax'. Still, it is worthwhile to see what support Schwarzschild account might lend a more committed account.

[44] Schwarzschild (2002, 295) offers a more complex definition: 'A 'singleton indefinite' is an indefinite whose restrictor has a singleton extension, relative to each relevant assignment of values to any bound variables in the restrictor'. This is to cover cases where a bound variable makes the indefinite dependent on some higher DP. For our purposes, we elide this complication.

[45] Hawthorne and Manley (2012, p. 124, n. 81), who commend Schwarzschild's account, are also neutral on the status of the covert material.

[46] Schwarzschild is not explicit on this point. He does note that 'markers of specificity are widely used to elicit so-called wide-scope readings', and comments that the intuitions concerning specificity cannot be explained by way of scope taking. He then writes as

follows: 'I hope to show that viewing specific indefinites as a kind of singleton indefinite does hold out the possibility of explaining these intuitions in terms of properties of contextual paramerization in general and quantifier domain restriction in particular' (ibid., p. 16). It is unclear to me if Schwarzschild is suggesting that contextual paramertization explains the specificity intuitions or all wide-scope intuitions. Still, it seems clear enough that the ideal direction of Schwarzschild's account is to explain all wide-scope indefinite behaviour as being due to singleton restriction, even if there is no disisive consideration in this regard (Schwazschild, 2002, p. 15).

[47] In fact, (36) is not an exact paraphrase of the choice-functional analysis of (35). The formal analysis of (36) is (i):

(i) $(\exists f)[\mathrm{CH}(f) \wedge [f(\{X\text{: relative of mine}(X) \wedge \text{three}(X)\})\text{die} \rightarrow \text{I inherit a house}]]$

Note that here the only element scoping out of the conditional is the quantification of the function, not the material that tells one that the function maps from a set of sets of three relatives to one such set where each member is dead. The whole point of the analysis is to capture the wide-scope effect without QR movement of the DP, which is enabled by existential commitment to a set of the relevant members. An appropriate paraphrase of (35), therefore, would be (ii):

(ii) There is a set such that if the members of the set are three dead relatives of mine,

then I will inherit a house

This paraphrase admits the vacuous reading with a vengeance: (35) could be true thanks to the mere existence of a set. We are assuming, however, that the choice function is not empty (see above). So, what we are existentially committed to, according to the choice-function analysis, is a set of sets of three relatives

[48] Hawthorne and Manley do correctly note that the tie case does not speak against domain restriction, but merely specificity. Still, if we are supposed to understand the specificity of (34a) as an argument against the Reinhart-Winter model, then the 'tie case' does undermine the argument, for the 'tie case' is perfectly explained by the Reinhart-Winter model, unlike the specific reading.

[49] Chierchia (2005, pp. 148-50) argues that Schwarzschild cannot handle certain intermediate scope readings, for the domain restriction model essentially eschews intermediate closure. I agree with Chierchia that intermediate readings are problematic for Schwarzschild; in particular, I think Chierchia is right to think that the kind of specificational paraphrase Schwarzschild proposes is ill-suited to capture a fully general intermediate reading (see above). For present purposes, however, I remain neutral on the kind of cases Chierchia discusses and the possible analyses they might possess. Endriss (pp. 146-7) offers a counter example to Schwarzschild in terms of partitive DPs, which can take wide scope, but cannot be singletons. Consider:

(i)a Bill has three relatives

b If one/some/several/two of them die(s), then he will inherit a house

So, here appears to be a case where the indefinite can scope out of an island, but cannot be restricted to a singleton. Note here, which Endriss does not mention, that one may have a specific selection of the relatives in mind (Jim and Bob, say), but such a selection cannot be read as a singleton restrictor on *them*, which must remain anaphoric on non-singleton *relatives*.

[50] Of course, that specificity elicits wide-scope readings does not mean that wide-scope readings just are specificity effects.

[51] Thanks...

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