

PRESUPPOSITIONS AND QUANTIFIER DOMAINS

ABSTRACT. In this paper, I will argue for a new account of presuppositions which is based on double indexing as well as minimal representational contexts providing antecedent material for anaphoric presuppositions, rather than notions of context defined in terms of the interlocutors' pragmatic presuppositions or the information accumulated from the preceding discourse. This account applies in particular to new phenomena concerning the presupposition of quantifier domains. But it is also intended to be an account of presuppositions in general. The account differs from the Satisfaction Theory and the Binding Theory of presuppositions in that it can be viewed as a conservative extension of traditional static semantics and in that it does not involve the notion of pragmatic presupposition.

1. INTRODUCTION

To explain the behavior of presuppositions in complex sentences, sentences with connectives, modals, and attitude verbs has been a major challenge in more recent semantic theory and has motivated at least in part, the development of dynamic semantic theories, that is, roughly, theories that replace the traditional notion of a proposition as the meaning of sentences by that of a context change potential (a function from information states to information states). In this paper, I will give an outline of a conceptually quite different account of presuppositions. This account is based on a static semantics using structured propositions, double indexing, and certain kinds of minimal representational contexts as part of the content of an utterance.

The central idea of the account can be illustrated by the behavior of presuppositions in attitude and modal contexts, as in (1a) and (1b):

- (1) a. John might read War and Peace, and he might finish reading War and Peace.
- b. John might finish reading War and Peace.

(1a) does not itself presuppose what the sentence embedded under the second occurrence of *might* presupposes, namely that John was

reading *War and Peace* before. It suffices that he did so in the relevant possible worlds. By contrast, (1b) does presuppose that, namely that John was reading *War and Peace* before. The difference between (1a) and (1b) obviously is that in (1a) what is presupposed is explicitly mentioned in the preceding modal sentence, whereas in (1b) it isn't.

In the terms I will use, this means that lexical presuppositions (such as the one of *finish*) must either be anaphorically linked to an antecedent (which is part of the representational context that I will make use of) or else be evaluated as true with respect to the context of the utterance (rather than the current index). The central idea of my account is that this apparently disjunctive condition is a manifestation of a single fundamental requirement on presuppositions, namely that presuppositions be semantically 'anchored', which means that presuppositions must be verified prior to the evaluation of the expression triggering the presupposition at the current index, in the course of the evaluation of the truth value of the sentence.

The account is in particular designed to deal with a novel kind of presupposition that involves the domain of strong quantifiers (e.g. *every*, *the*, *most*) and displays the semantic anchoring condition in quite analogous ways, as in (2a,b):

- (2) a. John might write ten books, and he might publish every book.
 b. John might publish every book.

Whereas the domain of *every book* in (2a) can be identified with the set of (possible) entities introduced by *ten books*, in (2b) it must consist of the actual entities identified by the utterance context. That is, in (2a) the domain of *every book* is anaphorically linked to some preceding descriptive content, whereas in (2b) it is identical to the domain the quantifier would have relative to the context of the utterance. What is presupposed in the case of strong quantifiers is a set of objects rather than a proposition. Thus, in this case, semantic anchoring will require the prior identification of a domain, rather than the prior verification of a proposition, in relation to the evaluation of the presupposition trigger.

Empirically, this Domain Presupposition manifests itself foremost in intensional contexts. But also the restriction of *there*-sentences to weak quantifiers (e.g. *no*, *few*, *several*) can be analysed in its terms. Moreover, the two ways of satisfying the anchoring condition of domain presuppositions provide a natural explanation of the apparent ambiguity between anaphoric and Russellian uses of definite descriptions.

On the dynamic semantic view, presuppositions are preconditions to be met by an information state in order for a presupposition-carrying sentence to be applicable to that state. The present account makes no use of contexts defined in terms of pragmatic presuppositions which are central on any dynamic account. In fact presuppositions are accounted for mainly within nonintentional terms, making use only of the course of the truthconditional evaluation of a structured proposition together with a supplementing minimal representational context. The account has features in common, though, with the one developed within Discourse Representation Theory (DRT), the Binding Theory of presuppositions developed by van der Sandt and Geurts. Unlike the latter, the present account is based on fundamentally different semantic notions, though, such as static meanings of sentences and double indexing and the notion of propositional content, construed as a structured proposition. The present account differs from the Binding Theory also in a number of other conceptual and empirical respects, concerning the status of global accommodation, the distinction between anaphoric and nonanaphoric presupposition triggers, and cases of local accommodation.

It is an important insight of the dynamic semantic approach that the previous discourse may play an important role for the meaning of a sentence.¹ However, rather than taking this to require a radical reconception of the notion of sentence meaning, the present account uses a notion of a discourse-driven context in a minimal way: as supplementing a traditional notion of propositional content and as being driven entirely by anaphoric relationships involving expressions of the sentence in question.

The first part of the paper gives an outline of my account of presuppositions of propositions, using some rather standard conception of structured propositions. It starts with an exposition of the semantic dynamic account of presupposition projection, that is, the Satisfaction Theory. Then two major problems for this account, which have lead to the development of the Binding Theory within DRT, will be addressed and accounted for within what can be considered a 'conservative' extension of traditional double-indexing semantics. The second part of the paper extends the account to presupposition of quantifier domains, treating familiar and new phenomena involving the distinction between weak and strong quantifiers.

2. PRESUPPOSITIONS

2.1. *The Central Idea*

The central idea about presuppositions in complex sentences that I will explore is as follows. Presuppositions are conditions that need to be verified, at least in part, prior in the procedure of evaluating the truth value of a sentence than the semantic evaluation of the presupposition trigger. This requirement of ‘semantic anchoring’ of presuppositions can be satisfied in one of two distinct ways: either the presupposition is verified with respect to the utterance context (in addition to the index) or else it corresponds to explicit material which has already been evaluated semantically and acts as an antecedent of the presupposition trigger. These two disjunctive ways are manifested by conceptual presuppositions carried by lexical items such as *finish* and *repeat* as well as the domain presupposition of strong quantifiers such as *every* and *most*. Some expressions are limited to the second way of satisfying the anchoring condition, though, namely expressions like *again* and *too*, or the quantifier *each*. Others, namely sortal requirements, are limited to the first way.

2.2. *Propositions as Structured Propositions*

A fundamental feature of my account is that it maintains a traditional notion of propositional content. In fact, it uses a conception of propositional content as a structured proposition, certainly the most widely accepted notion of proposition in the philosophy of language, especially for construing the object of propositional attitudes (cf. Cresswell 1985; Soames 1987).²

Structured propositions also have particular advantages for the treatment of presuppositions. First, structured propositions are particularly suitable for construing the relevant notion of a discourse-driven context. On the account I propose, the evaluation of a sentence will be made dependent on a discourse-driven context (a ‘background’), but this context will be limited to representing information that is required by anaphoric elements in the sentence. The material in such a context will be mentally activated, structured elements, either structured propositions or properties. If the propositional content is itself a structured proposition, it will be of the same nature as those background elements. With a structured propositions conception of context and content, also anaphoric

relations between constituents of the proposition and elements in the background can be straightforwardly established.^{3, 4}

At this point I will present one version of a structured propositions account, namely basically that of Soames (1987), but only for structured propositions for sentences without presuppositions. Later the account will be modified for the purpose of presuppositions.

While a sentence like (3a) may be taken to express the proposition that is a pair consisting of a property and two objects as in (3b), a quantificational sentence like (4a) will express a proposition consisting of a quantifier and a predicate, as in (4b), with the quantifier being, at a world w , the set of sets defined in (4c):

- (3) a. John likes Mary.
 b. LIKE, $j, m >$
 (4) a. Everybody left.
 b. $\langle \text{EVERY}(\text{PERSON}), \text{LEAVE} \rangle$
 c. $X \in \text{EVERY}(\text{PERSON})^w$ iff $\text{PERSON}^w \subseteq X$.

Here LIKE is a two-place property and LEAVE a one-place property, each of which having an extension at a given world. Structured propositions will themselves be truthconditionally evaluated as in (5a) and (5b) for (3a) and (4a):

- (5) a. $[\langle \text{LIKE}, j, m \rangle]^w = 1$ iff $\langle j, m \rangle \in \text{LIKE}^w$.
 b. $[\langle \text{EVERY}(\text{PERSON}), \text{LEAVE} \rangle]^w = 1$ iff
 $\text{LEAVE}^w \in \text{EVERYBODY}^w$.

Similarly, complex sentences with conjunctions and conditionals will express structured propositions as in (6) and (7) (tense being neglected), with the truth conditions given there (cf. Soames 1987):

- (6) a. John came and Mary left.
 b. $[\langle \text{AND}, \text{COME}, j \rangle, \langle \text{LEAVE}, m \rangle]^w = 1$ iff
 $\langle [\langle \text{COME}, j \rangle]^w, [\langle \text{LEAVE}, m \rangle]^w \rangle \in \text{AND}^w$
 (7) a. If John comes, Mary leaves.
 b. $[\langle \text{IF}, \langle \text{COME}, j \rangle, \langle \text{LEAVE}, m \rangle \rangle]^w = 1$ iff
 $\langle [\langle \text{COME}, j \rangle]^w, [\langle \text{LEAVE}, m \rangle]^w \rangle \in \text{IF}^w$

AND has as its extension at any world the relation that holds between two truth values just in case they are both true; IF, viewed as material implication, has as its extension at any world the relation that holds between truth values t and t' just in case t is false or t' is true.

Sentence with indefinites and/or unbound anaphora ('donkey'-anaphora) will express structured propositions with variable-like objects ('discourse referents'), that is, objects whose primary function is to be replaced by real objects in the evaluation of the truth value of a sentence. I will call these objects *parametric objects*, following a closely related notion used in Situation Semantics (Gawron and Peters 1990). Thus, a *donkey*-sentence like (8a) will express the complex structured proposition in (8b) containing the parametric object x_1 , which will be evaluated by quantifying over 'anchoring functions', based on the evaluation of simpler structured propositions as in (8c):

- (8) a. If John buys a book, he reads it.
 b. [$\langle \text{IF}, \langle \langle \text{BUY}, j, x_1 \rangle, \langle \text{BOOK}, x_1 \rangle \rangle, \langle \text{READ}, j, x_1 \rangle \rangle$]^{w, f} = 1 iff for all objects d and anchoring functions f' that differ from f in assigning d to x_1 , [$\langle \text{IF}, \langle \langle \text{BUY}, j, x_1 \rangle, \langle \text{BOOK}, x_1 \rangle \rangle, \langle \text{READ}, j, x_1 \rangle \rangle$]^{w, f'} = 1.
 c. [$\langle \langle \text{BUY}, j, x_1 \rangle, \langle \text{BOOK}, x_1 \rangle \rangle$]^{w, f'} = 1 iff $\langle j, f'(x_1) \rangle \in \text{BUY}^{w, f'}$ and $f'(x_1) \in \text{BOOK}^{w, f'}$

This treatment of *donkey*-sentences is a fairly standard one, simply cast within a structured-propositions approach and thus requiring parametric objects as constituents of propositions. It is introduced here because it will later on be made use of.

In what follows I will use the function '[[]]' as a mapping of expressions of English, relative to an (utterance) context, to meanings that is, structured propositions or possible constituents of structured propositions. Thus, $[[S]]^w$ is the structured proposition expressed by S at the context w and $([[S]]^w)^{w'}$ the truth value of S at w' . $[[N]]^w$ is the property expressed by N at w and $([[N]]^w)^{w'}$ is the extension of N at w' .

2.3. Views of presuppositions

I will start with some important notions and distinctions that will play a role in this paper. First, there are two conceptually rather distinct notions of presupposition: semantic presupposition and pragmatic presupposition. Semantic presuppositions are relations between linguistic units (sentences, utterances, or propositions), whereas pragmatic presuppositions are the contents of a kind of propositional attitude, namely that of 'taking something for granted' in the context of conversation. Whereas the former notion has had a

long tradition in the philosophy of language and linguistic semantics, the latter notion has been established as such mainly in the work of Stalnaker (1970, 1973, 1979). In dynamic semantics, the two notions have been closely linked, and this sometimes has led to a disregard of the original conceptual distinction.

A central distinction in this paper is that between context and index (cf. Kamp 1971; Kaplan 1977; Stalnaker 1979; Lewis 1981). Context is the context of utterance (consisting at least of the world and the time at which the utterance is made), whereas the index is an additional circumstance that may diverge from the first one as a result of evaluating an intensional operator (consisting of the world and perhaps time of evaluation). Relative to a context a sentence has a content, or expresses a proposition, and relative to a context and an index it has a truth value. An index and especially a context may consist in more than a world, but I will generally disregard other possible parameters.

There are two traditional notions of semantic presupposition: the Fregean notion of presuppositions as preconditions for the truth or falsity of a sentence (logical presupposition) and the Strawsonian notion of presupposition as a precondition for a sentence to express a proposition (expressive presuppositions) (cf. Soames 1989). Following Soames (1989), this distinction can be construed in terms of double indexing as follows. Expressive presuppositions need to be fulfilled by the context in order for a sentence to have a content, whereas logical presuppositions need to be fulfilled in order for a sentence to be either true or false at an index (that is, a world of evaluation). Expressive presuppositions generally are referential presuppositions imposed by singular terms, whereas logical presuppositions come about in various ways either on the basis of lexical meanings (preconditions for the applicability of concepts) or on the basis of syntactic constructions (e.g. clefts). In what follows, I will deviate from Soames's suggestion in taking also conceptual presuppositions to sometimes act as conditions on a context and thus as preconditions for a sentence to have a content.

In the development of dynamic semantics, a close link has been posited between semantic presuppositions and pragmatic presuppositions, that is, propositions taken for granted in the context of conversation: Semantic presuppositions must be pragmatically presupposed for a sentence to be acceptable in a context of conversation, and the notion of pragmatic presupposition has been taken to be crucial for explaining how presuppositions of component

sentences are inherited by complex sentences, especially the familiar facts illustrated in (9) (cf. Stalnaker 1979; Heim 1983):

- (9) a. John asked a question and then repeated the question.
 b. If John has asked a question, he will repeat the question.
 c. John repeated the question.
 d. John did not repeat the question.

Only (9c) and (9d), but not (9a) or (9b) presuppose that John asked the question before.

Whether a complex sentence inherits a semantic presupposition from a component sentence depends, so the view, on changes in pragmatic presupposition in the course of the acceptance or processing of the complex sentence in a conversation. This is the basic idea of the so-called *Satisfaction Theory* of presuppositions (Karttunen 1974; Heim 1983, and subsequent work). The Satisfaction Theory makes crucial use of the notion of common ground or *context set*, the set of worlds compatible with what is pragmatically presupposed in the context of conversation (cf. Stalnaker 1970, 1973, 1979). One fundamental idea of the Satisfaction Theory is that the semantic presuppositions of a simple sentence need to be entailed by the context set relative to which the sentence is uttered. The other fundamental idea is that the meaning of (at least certain) connectives, in particular conjunction and the conditional, involves a change in the context set from the initial or *global context* to another, *local context*. The Satisfaction Theory requires semantic presuppositions of component sentences to be entailed only by the relevant *local context* not the global (or initial) *context* (Heim 1983; cf. Stalnaker 1979; Karttunen 1974; among others). This applies to a conjunction *S and S'* as in (9a) as follows: *S* is applied to a global context *c* first; so the presuppositions of *S* need to be entailed by *c*. Then a new context *c'* arises from adding the information of *S* to *c*, a context to which *S'* applies, requiring that the presuppositions of *S'* be entailed by *c'*. When a sentence *if S, then S'* as in (9b) applies to a context *c*, then *S* is applied to *c* first, that is, the presuppositions of *S* need to be entailed by *c*. Then the information given by *S* can be added to *c* yielding a context *c'* to which *S'* will then apply, requiring its presuppositions to be entailed by *c'*. More formally, the dynamic semantics of simple sentences and sentences with negation, conjunction, and the conditional are as follows, where $S \langle p \rangle$ is a simple sentence presupposing *p*:

- (10) a. $c[S < p >] = \{w \mid w \in c \ \& \ S \text{ is true in } w\}$, if c entails p ; undefined otherwise.
 b. $c[\neg S] = c \setminus c[S]$
 c. $c[S \ \& \ S'] = c[S][S']$
 d. $c[S \rightarrow S'] = c \setminus (c[S] \setminus c[S][S'])$

If S is the first conjunct of a conjunction or the antecedent of a conditional, the ‘processing’ of S will change a global context c to a local context c' which differs from c in containing the information given by S . In both cases, any presupposition of the second conjunct or consequent S' will be inherited by the entire sentence just in case the presupposition is not expressed or implied by S .

The Satisfaction Theory locates the satisfaction of presuppositions at the level of the index, rather than the context: the context set is in fact nothing but the set of indices at which the previous discourse is true. We will see that locating presupposition satisfaction at the index is one source for the inadequacy of the Satisfaction Theory.

3. PROBLEMS FOR THE SATISFACTION THEORY

The Satisfaction Theory is quite appealing for sentences with connectives and quantifiers. However, it has difficulties with complex sentences involving an intensional operator (cf. Geurts 1995, 1996, 1998). In order for the Satisfaction Theory to apply to sentences embedded under modal or attitude verbs, it needs to draw a distinction between two sorts of contexts: *primary contexts*, representing the speaker’s presuppositions about the world, and *secondary contexts*, representing what is presupposed about the content of the relevant modality or the relevant agent’s propositional attitude (cf. Stalnaker 1987; Geurts 1995, 1998).⁵

This will account for examples like (11a) where the presupposition of *he continues going to school* need not be satisfied in the actual world, but will be satisfied with respect to the set of worlds in which the previous piece of discourse information *John goes to school* is true.

- (11) a. John must go to school, and he must continue going to school.

The problem is that without such a previous piece of information, the presupposition must be satisfied in the actual world:

- (11) b. John must continue going to school.

(11b) presupposes that John actually goes to school, not only that he is required to do so.

(11b) constitutes a major problem for the Satisfaction Theory: the Satisfaction Theory predicts that (11a) only presupposes (or rather requires accommodation of the presupposition) that John is required to go to school, not that he in fact goes to school. That is, it predicts that the context that will be modified so as to include the information that John goes to school is the secondary, not the primary context. In other words, the Satisfaction Theory predicts *local*, not *global accommodation* (cf. Geurts 1998).

The generalization about presuppositions in modal and attitudinal contexts that has been established is as follows: The presuppositions of a presupposition trigger in the scope of an intensional operator are always inherited by the entire sentence, unless there is preceding linguistic material in the same intensional context that matches the presupposition (cf. Geurts 1995). That this also holds for attitude verbs is seen in (12) (cf. Karttunen 1974; Heim 1992; Geurts 1995, 1998):

- (12) a. Mary believes that John repeated the question.
 b. Mary believes that John asked the question before, and she believes that he repeated the question.

(12a) (for most speakers) presupposes that John asked the question, whereas (12b) does not. Again, the Satisfaction Theory wrongly predicts that what will be accommodated in this case is the secondary context, not the primary one. Let me call the phenomenon displayed by (11a, b) and (12a, b) the *de re effect*.

Another general problem for the Satisfaction Theory is what Geurts calls the *proviso problem* (cf. Geurts 1986). In many cases, it appears, the Satisfaction Theory predicts weaker presuppositions than a complex sentence actually carries. For example, the Satisfaction Theory predicts that (13a) only presupposes (13b):

- (13) a. It is possible that Theo hates sonnets and that his wife does too.
 b. Theo hates sonnets → Theo has a wife.

If contexts are construed as sets of possible worlds, then once the sentence *Theo hates sonnets* is applied to a context, the resulting context also supports all of that sentence's implications – and thus it

is sufficient that *Theo has a wife* is among those. However, (13a) in fact presupposes unconditionally that Theo has a wife.

4. THE BINDING THEORY OF PRESUPPOSITIONS

Within DRT (Kamp 1981; Kamp and Reyle 1996), Rob van der Sandt and Bart Geurts have developed an alternative to the Satisfaction Theory, the *Binding Theory* of presuppositions (van der Sandt 1992; Geurts 1995, 1996, 1998). Only a few remarks about this approach should suffice, for readers already familiar with DRT. According to the Binding Theory, presupposition triggers are always anaphoric, requiring an antecedent in an accessible discourse representation structure (DRS). Instead of taking presupposition satisfaction to go along with the stages of acceptance of information, the acceptability of presupposition triggers is now traced to a formal relation of accessibility. The Binding Theory always requires an explicit antecedent to be present in the DRS that will satisfy the presupposition, and in the absence of a linguistically explicit antecedent, accommodation has to take place, that is, the insertion of an antecedent into an accessible part of the DRS. The *de re* effect observed in (11a, b) and (12a, b) is accounted for by giving preference to global accommodation over local or intermediate accommodation – that is, insertion of an antecedent into the highest level of the DRS.

The Binding Theory of presuppositions faces several difficulties. First, the Binding Theory ultimately does not draw a difference between presuppositional and assertive elements. Once a presupposition is accommodated, especially globally, it is put on a par with the assertive elements in the sentence. The presupposition does not act anymore as a precondition for the truth or falsity of the sentence or as the content of a pragmatic presupposition.

Second, in the case of global accommodation the Binding Theory fails to account for the fact that the presupposition also needs to be satisfied by the relevant secondary context. For example in (12a), Mary must also believe that John asked the question before (cf. Karttunen 1974; Stalnaker 1988; Zeevat 1992).

Third, there are problems with the way local and intermediate accommodation are treated. One problem is that local or intermediate accommodation on the Binding Theory should always be possible when it is known that the presupposition is not true. However, this does not seem the case, Compare (14a) with (14b):

- (14) a. If John is married, his wife is happy.
 b. If John plays baseball, his wife is happy.

(14a) is fine because the antecedent implies that John has a wife. But for (14b) a reading on which John does not have a wife seems excluded even if it is not known that John has a wife: local accommodation of *his wife* is impossible.

Another problem with local and intermediate accommodation for the Binding Theory arises with quantificational sentences. The Binding Theory says that intermediate accommodation must take place with quantificational sentences like (15), that is, accommodation of a proposition 'x smoked' within the restriction of the quantifier, making (15a) equivalent to (15b):

- (15) a. Two students stopped smoking.
 b. Two student who smoked stopped smoking.

This, however, yields wrong predictions when such sentences are embedded under attitude verbs or modals, as in (15c, d):

- (15) c. It is possible that two student stopped smoking.
 d. John believes that two student stopped smoking.

According to the Binding Theory, the presupposition will have to be accommodated within the scope of the modal or the attitude verb. But the *de re* effect is apparent in such sentences in just the same way as elsewhere. That is, (15c) and (15d) presuppose that two students in fact did smoke.

There is another general problem for both the Satisfaction Theory and the Binding Theory, and that is that it neglects either one or the other kind of two fundamentally different sorts of presuppositions. Kripke (ms) (see also Soames 1989, Fn. 54) convincingly argued for a distinction among two different kinds of presuppositions: anaphoric presuppositions and nonanaphoric ones. Anaphoric presuppositions are those carried by expressions like *too* and *again*. Nonanaphoric presuppositions may be carried by lexical expressions like *stop*, which can also have a nonanaphoric reading (cf. Soames Fn. 54). Anaphoric presupposition triggers relate to a specific proposition in the context, usually one made explicit in the previous discourse context. Clearly, the Binding Theory is an account designed for anaphoric presuppositions, whereas the Satisfaction Theory is made for nonanaphoric ones.⁶

Let us then distinguish between purely anaphoric presupposition triggers such as *again* on the one hand and on the other hand

presupposition triggers such as *stop*, which have both anaphoric and nonanaphoric uses. The latter generally are expressions that have concepts as meanings that impose the presuppositions as preconditions for their applicability. For such *conceptual presuppositions* the following generalization can be made: Unless the presupposition is anaphoric, it must be satisfied with respect to the context (and not just the index). This captures the *de re* effect and it reduces the projection problem of presuppositions to the establishing of anaphoric presuppositional relations (as on the Binding Theory).

To complete the picture, there may also be purely nonanaphoric presuppositions, as Rob van der Sandt pointed out to me, namely sortal requirements. Sortal requirements cannot have an anaphoric use, simply because they are conditions on the kind of argument a predicate can take that would, for a given object, need to hold in all possible worlds.

5. A NEW ACCOUNT OF PRESUPPOSITIONS

My account carries over some important features of the Binding Theory, namely the anaphoric treatment of at least certain presuppositions, and with that the account of the *proviso* problem and, to an extent, the *de re* effect. However, my account makes a distinction between anaphoric and nonanaphoric presuppositions, which are treated in two fundamentally different ways.⁷ Nonanaphoric presuppositions are conditions that need to be satisfied with respect to the utterance context. Anaphoric presuppositions are presuppositions acting as anaphora and as such need to link up to an antecedent.

The antecedents of anaphoric presuppositions need to be found in a context that I call the *background* of a structured proposition. The background is a minimal representational context that provides the ‘anaphoric completion’ for a sentence, and thus contains the kind of semantic material from the previous discourse context that can provide antecedents of certain anaphorically used expressions in the sentence. For sentences presupposing a proposition, the backgrounds consist of propositions acting as anaphoric completions for the relevant anaphorically used presupposition triggers.

For example, the background for *John failed again* will have to contain a proposition of the sort that John failed previously. It is this proposition itself that I will take to act as the antecedent of the *again-*

sentence. For an *again*-sentence to be acceptable, the *again*-sentence needs to be coindexed with such a proposition in the background.⁸ We can then say that anaphoric presuppositions impose the following condition on what can count as a background, where ‘S’ and ‘p’ are variables ranging over both indexed and nonindexed sentences and propositions:

(16) Condition on anaphoric presuppositions

If a sentence S anaphorically presupposes a proposition p, then b can be a background for S only if S is coindexed with p and $p \in b$.

Here I am assuming that a simple sentence containing a presupposition trigger such as *John failed again* carries an index and not just the presupposition trigger itself.

There will not always be a single background associated with the interpretation of a sentence. Rather backgrounds may change within the evaluation of a sentence, especially in the case of conditionals and conjunctions (just as they do in dynamic semantics). This change will involve an increase of information as goes along with the preceding subsentence. Even a sentence-internal change of the background is not strictly driven by the semantic content of subsentences, but may, to an extent, also depend on a speaker’s intentions (which will account for rare cases of local accommodation). Let us say that a background $b(c)$ depends on a context c , representing relevant speaker’s intention as well as the preceding discourse. Then if $b(c)$ is the background for a conjunction S and S’, the background for S’ will also depend on the content of S, and thus for the semantic evaluation of S’ we will have a background $b(c, S)$. Similarly for a conditional *if S, then S’*. Thus, we will have the conditions on backgrounds of embedded sentences in (19a, b):

- (17) a. $[S \text{ and } S']^{i, b(c)} = \langle \text{AND}, [S]^{i, b(c)}, [S']^{i, b(c, S)} \rangle$
 b. $[if S \text{ then } S']^{i, b(c)} = \langle \text{IF}, [S]^{i, b(c)}, [S']^{i, b(c, S)} \rangle$

For a sentence with an intensional verb V, the background for the embedded sentence generally contains propositions embedded in the same way in the background for the entire sentence, as in a simple case in (17c):

- (17) c. $[a \text{ V } S]^{i, \{[V], a, p\}} = [V], a, [S]^{i, \{p\}} >$

That is, the embedded sentence in *John must continue going to school* in (11a) will be evaluated as $[John \text{ continues going to school}]^{i, \{G, j, s\}}$ where $\{G, j, s\}$ is the proposition expressed by *John goes to school*.

I do not intend to give explicit rules for the construction of backgrounds. It suffices to say that those rules differ fundamentally from semantic rules determining the propositional content of a sentence: they do not apply strictly on the basis of the syntacto-semantic structure of a discourse, but are also influenced by the speaker's intentions. The process of building backgrounds, in a way, is a partly dynamic process, of cumulatively building relevant antecedent material for anaphoric elements. This then incorporates a fundamental insight of dynamic semantics, namely that the interpretation of sentences may depend on a discourse context that is incrementally built even within a sentence.

A background will form the content of the propositional attitude of pragmatic presupposition, or else, in the case of an embedded sentence, the content of a background attitude (usually belief). On this account then, pragmatic presuppositions will naturally go along with semantic anchoring, but do not play a direct role for presupposition projection.

Conceptual presuppositions may be satisfied either with respect to the background or with respect to the utterance context. Thus, in (18a), *John stopped smoking* relates anaphorically to the proposition that John smoked from the antecedent of the conditional, whereas in (18b) the proposition needs to be true in the actual world, that is, with respect to the utterance context:

- (18) a. If John once smoked, then he now stopped smoking.
 b. If Mary is happy, then John stopped smoking.

In the second case, as was mentioned in regard to the Binding Theory, the presupposition needs to be true also at the index.

Turning now to the condition on conceptual presuppositions, let us recall that a sentence will first be evaluated as a structured proposition relative to an utterance context as well as a background. The structured propositions will then be the bearer of the truth value, relative to an index. I take the conditions on conceptual presuppositions to be conditions on whether a sentence expresses a structured proposition, relative to a context and a background, following Soames' (1989) suggestion mentioned earlier. If a conceptual presupposition is satisfied anaphorically, the sentence needs to be coindexed with a corresponding proposition in the background, and if it is satisfied with respect to the utterance context, it needs to be true at that context. In both cases, the presupposition also needs to hold at the current index, though, and this effect can be achieved by making the presuppo-

sition itself part of the structured proposition, as an additional conjunct.

The condition on conceptual presuppositions will then be as follows:

(19) Condition on conceptual presuppositions

For a sentence $S \langle p \rangle$ presupposing a proposition p , $[S \langle p \rangle]^{i,b}$ is defined as $\langle [S]^{i,b}, p \rangle$ if either $p^i=1$ or S is coindexed with p and $p \in b$.

An important question is, why should conceptual presuppositions be subject to a disjunctive condition of either being anaphoric with respect to elements from the previous discourse or require truth relative to the context of the utterance situation? There is a unifying motivation for this disjunctive condition, namely what I will call semantic anchoring:

(20) Semantic anchoring of presuppositions

If an expression E in a sentence S presupposes a proposition p , then p must have been verified prior to the evaluation of E at the current index.

'Prior' here refers to the order of the various steps involved in the evaluation of the truth value of a sentence, which is not to be understood in temporal terms. (20) will be satisfied just when the presupposition p belongs to the background or has been verified with respect to the context. For a sentence S that is to be evaluated at a context i , an index i' , and a background b , certainly whatever conditions associated with S need to be satisfied at the context i need to be verified prior to the evaluation of S at the index i ; and the background b contains, by nature, already evaluated material. Semantic anchoring in a way unburdens the current index, from having itself to verify presuppositions.

To explain presupposition projection of complex sentences, only the semantic anchoring condition is needed, together with the rules governing the construction of backgrounds for subsentences.

With this general account of presuppositions, let us return to the problems noted for the Binding Theory and see how they can now be dealt with. First, the present account draws a clear distinction between presupposed and asserted elements in that presuppositions are either to be verified at the context or else must find an antecedent in the background. Second, the disjunctive condition in a way

explains the preference for global accommodation, rather than stipulating it, in that verification with respect to the context is simply one way of satisfying semantic anchoring. Third, the problems with local and intermediate accommodation that the Binding Theory faces are well accounted for. Local accommodation is limited to cases where a background can be construed from more or less explicit information in a preceding sentence. On the present account instead of local accommodation, there will only be a process of extracting antecedent material from the information content of a preceding sentence, which can be effectively applied to (14a), but not (14b). Also no problem arises in cases such as (15c) and (15d). The anchoring condition says that for any student d the presupposition that d smoked before needs to be true at the utterance context, rather than just an index introduced by the modal, and it imposes that condition on every student.

6. THE DOMAIN PRESUPPOSITION

6.1. *The Basic Idea*

The account of presuppositions that I have given has an important application to quantifier domains. Some quantifiers, namely strong quantifiers such as *every*, *most*, and *the*, display the same disjunctive condition concerning their domain as conceptual presuppositions. The presupposition of strong quantifiers, however, involves quantifier domains rather than propositions and hence can be called the *Domain Presupposition*. On the present account, this means that strong quantifiers have a restriction that is either coindexed with a property in the background or else must be evaluated with respect to the utterance context and not just the current index.

Note that the domain presupposition is not the condition that the quantification domain of strong quantifiers be nonempty, as in Milsark (1977), Diesing (1991) and others. Rather the Domain Presupposition concerns the identification of the quantifier domain prior to the evaluation of the quantificational NP at the current index. The domain presupposition thus presents a novel kind of presupposition in that what is presupposed is not a proposition, but a domain. Indeed the fact that the domain presupposition involves as a presupposition a domain rather than a proposition is something difficult to deal with on most existing accounts of presuppositions, including the Satisfaction Theory (where a context is conceived as a set of possible worlds (and possibly variable assignments)). The exception of course is the

Binding Theory where presuppositions are treated as anaphora, allowing in principle any semantic object to be presupposed.

There is in fact an account of the domain presupposition within the Binding Theory, namely that of Geurts and van der Sandt (1999). The aim of their paper, however, is to account for the existence presupposition of strong determiners within the Binding Theory of Presuppositions in general, rather than exploring an alternative account of the presuppositions of strong determiners with its various empirical ramifications.⁹ Their account moreover poses the same issues and difficulties as the Binding Theory of presuppositions of propositions, as we will see.

The distinction between weak and strong NPs itself, I will argue, should be characterized in terms of the Domain Presupposition, which then allows for an explanation of their different occurrences. But the fact that definite NPs denote strong quantifiers and thus presuppose their domain has also other interesting consequences. In particular, the existence and uniqueness presuppositions associated with definite determiners will now come out as consequences of the Domain Presupposition and need not be specified as presuppositions anymore.

6.2. *The Weak-strong Distinction Among Quantifiers*

Let me first present some fundamental properties of the weak–strong distinction as such in order to introduce my account of the weak–strong distinction in terms of the Domain Presupposition.

I will adopt Keenan's (1987, 1996) logical characterization of strong quantifiers as those quantifiers that are nonintersective; but I will argue that it is not this characteristic that explains the different behavior of weak and strong quantifiers, but rather a property that goes along with nonintersectiveness, namely the Domain Presupposition.

The most familiar and best-researched contexts in which the weak–strong distinction among quantifiers plays a role are *there*-sentences (discussed as the so-called '(In)definiteness Effect'). *There*-sentences reject the NPs in (21) and accept those in (22):¹⁰

- (21) a. # There is every man/the man/John in the garden.
 b. # There are most men in the garden.
 c. # There are many/few men in the garden. ('many/few relative to the number of men')

- (22) a. There is/are a man/three men/a few men/many men/no men in the garden.
 b. There are less than two/more than three/exactly two men in the garden.

The acceptability of certain complex NPs in *there*-sentences is also of interest, namely Boolean combinations of quantified NPs or participatives. I will turn to those later.

There are two kinds of approaches to the characterization of NPs acceptable in *there*-sentences. The first proposal characterizes such NPs in terms of a logical property of their determiner (Barwise and Cooper 1979; Higginbotham 1987; Keenan 1987, 1996); the second in terms of a discourse-related property (Milsark 1974; Enç 1991; Diesing 1992). The present account is in a sense a combination of the two views. It takes the distinction to be based on logical properties, which in turn go along with context-related properties. But it takes the context-related properties, not the logical properties to be crucial for explaining the different behavior of weak and strong NPs. Moreover, even though in the case of simple NPs the context-related property goes along with the logical property, in the case of complex NPs the two properties do not always coincide.

The relevant logical property is best formulated within Generalized Quantifier Theory (cf. Barwise and Cooper 1979). On the generalized-quantifier view, NPs denote generalized quantifiers Q (that is, sets of sets) and determiners denote functions D (which themselves are called 'determiners') mapping a set A onto a set of sets B (or, equivalently, a function from sets B to truth values 1 or 0). For example, *every* will denote a function which maps a set A to a function mapping a set B to 1 iff A is included in B , and (singular) *the* will denote a function that maps a set A to a function mapping a set B to 1 if A is included in B and A is a singleton set, to 0 if A is not included in B and A is a singleton set, and to the third truth value # ('undefined') otherwise. According to Keenan (1996), whom I will follow in this regard, the logical property of determiners of simple NPs acceptable in *there*-sentences is the property of denoting an intersective determiner, where a determiner is intersective just in case it only cares about the intersection of its two arguments (cf. Keenan 1996):¹¹

- (23) A determiner D is *intersective* iff for all A, A', B, B' , if $B \in D(A)$ and $A \cap B = A' \cap B'$, then $B' \in D(A')$.

In a derivative use, I will say that a determiner as an expression of English is intersective just in case it denotes an intersective determiner in the sense of (23). I will also say that an NP is intersective just in case its determiner is intersective. *A* as in *a man is in the garden* is intersective because it only cares about how many things are both men and in the garden; it need not take into account the entire set of men. But, *every* as in *every man is in the garden* is not intersective, since it has to check whether all the entities in the restriction, the set of men, are in the extension of the predicate, the set of things in the garden.¹²

Nonintersective determiners, I want to argue, are precisely those determiners that presuppose their domain, which means that their domain needs to be semantically anchored in a way analogous to the semantic anchoring of conceptual presuppositions. That is, the domain of nonintersective determiners needs to be identified prior to the semantic evaluation of the determiner at the current index.

In the case of presuppositions of propositions, those presuppositions were either specifically associated with anaphoric presupposition triggers or else they were preconditions on the application of a concept (and thus predictable given the nature of the concept). The question then arises of why strong quantifiers, but not weak quantifiers, should presuppose their domain.

An answer to this question can be obtained from the property of nonintersectiveness: in order to verify whether a set belongs to a nonintersective quantifier, the entire domain of the quantifier must be identified; whereas to verify whether a set belongs to an intersective determiner, only a subset of the quantifier domain needs to be identified. If membership in the extension of a concept depends on the precise identity of another set, then there is a sense in which it depends on that set. Let us then say that the relation among a set of sets *Q* and a set *A* (or a set of properties and a property) is that of presuppositional dependence just in case verifying membership in *Q* requires reference to *A*:

- (24) A set of sets *Q* presupposes a set *A* iff for any sufficient condition *P* for a set *X* to be in *Q*, *P* can only be defined by mentioning *A*.

The semantic anchoring of a domain presupposition is to be achieved in exactly analogous ways to the semantic anchoring of a conceptual presupposition of a proposition: the restriction of the determiner at the index of evaluation must have the same extension as when evaluated with respect to the context of evaluation or else it must be anaphoric to some previously evaluated set description.

Before making this requirement more precise formally, let us turn to the ways the Domain Presupposition manifests itself empirically. The main empirical evidence does not come from the semantics of *there*-sentences themselves (whose semantics is less obvious), but rather from intensional contexts.

6.3. *Weak and Strong Determiners in Intensional Contexts*

6.3.1. *The Domain Presupposition with Universal Quantifiers*

The crucial observation concerning weak and strong quantifiers in conditionals is found in the contrast between (25a) and (25b) and between (26a) and (26b):

- (25) a. If John owned every horse (most horses), Mary would be very happy.
 b. If John owned a horse, Mary would be very happy.
- (26) a. ?? If John owned every unicorn, he would start a zoo.
 b. If John owned a unicorn, he would start a zoo.

Suppose with Lewis (1972) that counterfactual conditionals involve universal quantification over worlds maximally similar to the actual world in which the antecedent is true. The observation then is that in (25a), those worlds must all contain exactly the same horses in their domain as the actual world – though those horses will in part be assigned different properties (namely being owned by John). Crucially, the counterfactual worlds cannot differ from the actual one in containing fewer horses (rather than the same horses, but with different properties). That is, the variation permitted by the relation of maximal similarity does not manifest itself in a variation in the domain of a strong quantifier, but only in a variation in the assignment of properties.

Domain variation is not excluded by the semantics (or pragmatics) of conditionals *per se*. In particular, domain-related differences among worlds do not constitute a violation of the condition of maximal similarity. This can be seen, for example, from (25b), where the relevant counterfactual worlds may differ from the actual world in containing an additional horse (standing in the relation of ownership to John).

The examples in (26) make the same point. (26a) must involve quantification over actual unicorns, whereas (26b) allows quantification over ‘counterfactual unicorns’.

The same observation about quantifiers in the antecedent of a counterfactual conditional can be made for quantifiers occurring in the consequent of a conditional:

- (27) a. If John had realized his dreams, he would own every horse.
 b. If John had realized his dreams, he would own a horse.

Every horse in (27a) must range over every actual horse (unless the second, domain-independent reading is invoked). By contrast, *a horse* in (27b) may easily range also over counterfactual horses.

The condition to be fulfilled by the quantifiers in (25a) and (26a) is obviously that the restriction of the determiner be the same when evaluated with respect to the context and with respect to the index. If we use double indexing, then the semantics of counterfactual conditionals can, on the basis of Lewis' (1973) semantics, be formulated as follows:

- (28) $[\langle \Box \rightarrow, p, p' \rangle]^w = 1$ iff for all worlds w' , w' maximally similar to w : if $[p]^{w'} = 1$, then $[p']^{w'} = 1$.

Thus, the worlds a counterfactual conditional such as (28a) quantifies over must be such that the horses in that world are the same as in the actual world. Let me then call the condition on strong determiners that their restriction when evaluated with respect to the context be the same as when evaluated with respect to the index the *Matching Condition*.¹³ I will take the Matching Condition to be a condition on the evaluation of strong NPs as generalized quantifiers. Disregarding backgrounds for the moment, the Matching Condition can be formulated as in (29), that is, the restriction of a determiner will have as its content at a context the property whose extension at any index is the same as at the context:

(29) The Matching Condition

For a domain-presupposing determiner D and a nominal N' , and world w , $[D N']^w = [D]^w(O)$, where O is the property such that for any world w' , $O^{w'} = ([N']^{w'})^{w'}$.

(29) obviously corresponds to the requirement that a presupposed presupposition be true both at the context and the current index. As in the case of the presupposition of propositions, however, (29) need not be fulfilled when the quantifier domain relates to a linguistic antecedent, as in (30a-c):

- (30) a. If John owned ten horses, he would feed every horse well.
 b. If John owned ten horses and fed every horse well, Mary would be very happy.
 c. If John had realized his dreams, he would own ten horses and feed every horse well.

In these cases, the strong determiner can have its restriction instead be evaluated with respect to the index, quantifying over ‘counterfactual’ horses. What is crucial about the examples in (30) is that *every horse* does not range over just any horse in the counterfactual world; rather it acts as a contextually restricted quantifier, ranging over just those horses that, according to the antecedent, John owns.

The data are exactly analogous to those with presuppositions of propositions: the domain of a strong quantifier must be identified with respect to *some* old context, where ‘old context’ is to be understood disjunctively as either some already evaluated linguistic material acting as antecedent for the restriction or else the utterance context. That is, at the current index, the domain of the quantifier can only be reidentified.

Formally, the background of a proposition now needs to be able to contain also properties, not just propositions. I will assume that the relation between an incomplete restriction and its completion when it is given in the preceding discourse is a formal anaphoric relationship, with the completion acting as antecedent to the restriction of the determiner. More precisely, the incomplete restriction will be coindexed with a property in the background that provides the completion, as in (31):¹⁴

(31) [*every horse*]_i^w.{ λx [horse(x) & own(j,x)]_i,...}

Here the completion of the incomplete quantifier restriction is taken to be a property. This is required because of the possibility of incomplete quantifier restrictions in intensional contexts as in the examples in (30), where the quantifier with its restriction will have to be evaluated at different indices.¹⁵

(31) can now be evaluated as the generalized quantifier in (32):

(32) EVERY^w([λx [horse(x) & own(j, x)]]_i^w)

The linguistic antecedent of an incomplete quantifier restriction generally does not correspond to a constituent of the preceding sentence, but may have to be construed from various parts of the preceding discourse. Thus, in the case of (30a), a predicate ‘horse that John owns’ has to be construed from the sentence *John owned ten horses*. There will be discourse-semantic rules which determine what properties, given a particular discourse, can act as completions of a generalized quantifier. These rules are in fact essentially those formulated within DRT for the purpose of antecedents for plural

pronouns (which, though, involve an additional operation of sum formation) (cf. Kamp and Reyle 1993).

For evaluating an NP with a restriction indexed to a property P in the background, the property expressed by the restriction will be conjoined with P (resulting in a property whose extension at an index i' is the intersection of the two properties):

$$(33) [D N'_i]^{w, \{P_i, \dots\}} = [D]([N'_i]^w \& P_i)$$

The semantic anchoring condition for domain presuppositions of strong determiners can now be formulated in a disjunctive way as in (34), where again 'N' stands for indexed or nonindexed nominals and 'P' for indexed or nonindexed properties:

(34) Semantic Anchoring of domain presuppositions

For a domain-presupposing determiner D, a nominal N' , indices i and i' , and a (possibly empty) set b of properties or propositions, $[D N']^{i,b} = [D]^{i,b}([N']^{i,b})$ if N' is coindexed with some property P , $P \in b$, or else $= [D]^{i,b}(O)$, where O is the property such that $O^{i'} = ([N']^{i,b})^i$ for any index i' ; $[D N']^{i,b}$ is undefined otherwise.

That is, the restriction of a domain-presupposing quantifier must be coindexed with a property in the background; or else its extension with respect to the current index must be the same as its extension with respect to the utterance context.

There is a second reading of *every horse* in (25a). On this reading, the focus is on John owning the totality of horses, regardless of what they are, whether they are actual or counterfactual. This reading does not involve any particular domain, but just the exhaustion of the horses (whatever they may be) by John's ownership. Let me call this the *domain-independent reading*. The domain-independent reading seems to be clearly distinct from the more common *domain-dependent reading* in that it requires focusing of the determiner. By contrast, the domain-independent reading does not require any particular focusing. The domain-independent reading occurs in all intensional contexts, and thus requires an appropriately general account.

There are three options available to account for the domain-independent reading, the last one of which being the most preferable. The first option is that the contextual restriction is locally accommodated. That is, the background for the antecedent itself would contain some property, that is, a property that in some way further restricts *every horse* – let's say the property x [in the barn(x)]. Such an account, however, is problematic in several ways. First, local

accommodation should then be available in the same way for presuppositions of propositions, but this, we know, is not the case. Second, the account would leave unexplained why focus should play a role at all. Finally, local accommodation should, given the present view, be limited to the construal of antecedent elements from a given discourse and not be available freely.

The second option would attribute the domain-independent reading to the quantifier undergoing diagonalization in the sense of Stalnaker (1979), an operation which arguably is generally available in intensional contexts. The diagonal proposition a sentence *S* expresses consists of the set of worlds *w* such that *S* is true with *w* acting as a context as well as an index (i.e. $\text{diag}([S]) = \{w \mid ([S]^w)^w = 1\}$). If a sentence with a domain-independent reading stands for the diagonalization of the proposition it ordinarily expresses, then we will have both domain independence (since all the worlds in which the sentence is true act as contexts) as well as an effect of exhaustiveness (since what is common among all the worlds in which the diagonal proposition is true is that in such a world the totality of the entities fulfilling the quantifier domain restriction also satisfies the predicate at that world). Moreover, the Domain Presupposition will be satisfied (since context and index will always be identical).

Diagonalization as an account of the domain-independent reading is not unproblematic, though. First diagonalization is not as freely available as it should be on that account of the domain-independent reading. Diagonalization is obviously not available for satisfying the anchoring condition for presuppositions of propositions. Second, diagonalization leaves entirely unexplained the effect of focusing on the domain-independent reading.

The third proposal to account for the domain-independent reading makes crucial use of a possibility available specifically with structured propositions. This possibility consists in that structured propositions can be more or less fine-grained (cf. Cresswell 1985). That is, the elements in a structured proposition may reflect smaller or larger constituents of a sentence. In particular, an NP may contribute to a structured proposition either the denotation of the NP itself or both the denotation of the determiner and the *N'*. Generally, for each partition of a sentence into constituents, there will be a different structured proposition that could then act as the meaning of the sentence. The sentence in (35a), in particular, may be partitioned either as in (35b) or as in (35c):

- (35) a. John owns every horse.
 b. $\langle \text{John} \rangle \langle \text{owns} \rangle \langle \text{every horse} \rangle$
 c. $\langle \text{John} \rangle \langle \text{owns} \rangle \langle \text{every} \rangle \langle \text{horse} \rangle$

Given that Semantic Anchoring of domain presuppositions as it is formulated in (34) is a condition on the evaluation of a strong NP, it will apply only to (35b), where *every horse* is semantically evaluated so as to contribute a single component to a structured proposition, but not to (35c), where *every* and *horse* are evaluated separately with each making its own contribution to the structured proposition, as in (36):

- (36) $\langle [\text{every}]^{w,b}, [\text{horse}]^{w,b} \rangle$

Of course for the evaluation of the truth value of the structured proposition, the denotation of *every* will apply to the denotation of *horse*, but at that stage it is too late to apply the domain presupposition.¹⁶ Thus, (35b) corresponds to the domain-dependent reading and (35c) to the domain-independent reading. The account might also explain why the domain-independent reading goes along with focusing of *every*, given that *every* will make its own contribution to the structured proposition.

There is another context in which strong quantifiers in counterfactuals can range over a domain of entities not matching the actual one, and that is when they have a restriction dependent on an indefinite:

- (37) a. If every novel of a writer got published, John would be confident.
 b. If a president had ever written each one of his speeches himself, he would not have had time to do his job.

What is special about the examples in (37) is that the restriction of the strong quantifier contains a variable bound by an indefinite in the scope of the conditional. Recall that indefinites as well as the pronouns they may bind are treated as contributing parametric objects to a structured proposition. Thus, the structured proposition expressed by (38a) would, somewhat simplified, be:

- (38) $\langle \text{IF}, \langle \text{EVERY}, x[\text{novel}(x) \ \& \ \text{of}(x, x_1) \ \& \ \text{writer}(x_1)], x[\text{published}(x)] \rangle, \langle \text{CONFIDENT}, j \rangle \rangle$

This proposition will be evaluated by quantifying over anchoring functions mapping the parametric object x_1 to entities in the do-

main. Since the anchoring condition associated with *every* is not satisfied by identifying the restriction it has at the current index with that it would have at the utterance context, it needs to be satisfied in some other way. However, the alternative way does not seem available either: the restriction is not anaphoric to some property obtainable from the preceding discourse context. What is special about the restriction *novel of a writer* is that it contains a parametric object and thus it is a nominal whose extension is partially identified by an anchoring function f . It thus appears that partial previous evaluation by an anchoring function f is enough to meet the anchoring condition. Thus, the semantic anchoring condition for presuppositions should be restated by making use of anchoring functions, as follows:

(39) Semantic Anchoring of domain presuppositions (simplified revised version)

For a domain-presupposing determiner D and a nominal N' , a context i , a set b of properties or propositions, and an anchoring function f ,

$[D N']^{i, b, f}$ is defined only if N' is partly or entirely evaluated on the basis of i , f , or an element of b .¹⁷

The Domain Presupposition is a condition that cannot be formulated within a semantic dynamic account, unless, of course, that account makes use of double indexing. Dynamic meanings constitute transitions from contexts to contexts, and as such and without further additions, cannot make reference to two contexts simultaneously as is required for the formulation of the Domain Presupposition.

Let me briefly turn to Geurts and van der Sandt's (1999) account of the weak–strong distinction within the Binding Theory of presuppositions. Roughly, on their account, the domain of a quantifier (represented by an open proposition) has to be identified with an accessible antecedent of the same sort or else accommodated at the highest possible DRS. This means that the same difficulties arise as for the Binding Theory of presuppositions of propositions. First, their account does not distinguish between anaphoric and nonanaphoric quantifier domain presuppositions, such as those of *every* as opposed to *each* (cf. Pesetsky 1987). Moreover, the same empirical differences arise in the context of conditionals and modals as we had seen with presuppositions of propositions. Consider (40a):

(40) a. If every horse liked his owner, Mary would be happy.

Whatever Domain-Presupposition effect there is for *every horse*, it also obtains for *his owner*. (40a) differs clearly in that respect from (40b), with an indefinite:

- (40) b. If every horse had an owner that it liked, John would be happy.

Geurts and van der Sandt (1999) predict for (40a) local accommodation of *his owner* within the antecedent of the conditional, which clearly gives the wrong result, making the sentence equivalent to (40b).

6.3.2. *The Domain Presupposition with Definite Descriptions*

The Domain Presupposition has particularly interesting applications to definite descriptions. There are quite different views about definite descriptions around, though, and the following discussion will adopt one particular such view, namely a unified Russellian analysis.¹⁸ On that view, the denotation of *the* will be, uniformly, as follows:

- (41) $Y \in [the](X)$ iff $X \subseteq Y$ and $|X|=1$

Given (41), definite descriptions are also nonintersective quantifiers and thus carry the Domain Presupposition. A variant of the view in (41) says that the uniqueness and existence conditions are in fact presuppositions (cf. Strawson 1950). Then the right-hand condition in (41) would simply be ' $X \subseteq Y$ '. We will see that the presuppositional status of the existence and uniqueness conditions follows in fact simply from the Anchoring Condition of domain presuppositions that *the* is subject to.

There is a different view of definite descriptions though, which is equally prominent (cf. Heim 1982; Kamp 1981, and more recently Gendler Szabo 2000). That view says that definite descriptions are in fact referential terms picking up an already introduced discourse referent. This view has a lot of plausibility for examples where no uniqueness seems to be implied, as in (42):

- (42) A man came in. The man said something to another man.

The view is also made plausible by the fact that definite NPs seem interchangeable with *donkey*-pronouns for which a uniqueness condition is quite implausible (cf. Heim 1982):

- (43) a. If a man meets another man, he greets him.
b. If a man meets another man, the man greets the other man.

This view is less plausible, though, for cases where uniqueness seems entirely appropriate and there is no sense of a previous discourse referent having been introduced, as in (44):

(44) The president of the US gave a speech.

Yet another view distinguishes between two uses or meanings of definite descriptions: as quantificational and as anaphoric. In (44), a definite description is used quantificationally (implying uniqueness and referring solely in virtue of the descriptive content), whereas in (42), it is used anaphorically (without uniqueness implication).

Concerning the anaphoric use, Groenendijk et al. (1995) have given convincing arguments that even the anaphoric and *donkey*-uses of definite descriptions involve a Russellian definite description. Thus, they note that in (45a), *the smallest number* and *the largest number* act anaphorically, but at the same time must be treated as quantifiers. Another example is that in (45b):

- (45) a. Mary wrote down a number, another number, and another number. She subtracted the smallest number from the greatest number.
 b. If a man meets another man, the older man usually asks a question first.

In (45a), *the smallest number* and *the greatest number* act as quantifiers whose domain relates anaphorically to the three preceding indefinite NPs. The account sketched by Groenendijk et al. (1995) amounts to saying that those three indefinite NPs introduce discourse referents which together make up the domain of quantification for *the smallest number* and for *the greatest number*. In present terms, this means that the anaphoric use will involve a special property from the previous discourse context to satisfy the anchoring condition of domain presupposition. In (45a), this would be the property $x[\text{number}(x_1) \ \& \ \text{number}(x_2) \ \& \ \text{number}(x_3) \ \& \ \text{write down}(m, x_1) \ \& \ \text{write down}(m, x_2) \ \& \ \text{write down}(m, x_3) \ \& \ x_1 \neq x_2 \ \& \ x_2 \neq x_3 \ \& \ x_3 \neq x_1]$, where 'x₁', 'x₂', 'x₃' are the parametric objects introduced by the three NPs *a number*, *another number*, and *another number*. In cases like (45b) the property is a much simpler one, namely $\lambda x[x=x_1]$, for x₁ being the parametric object introduced by *a man*.

By contrast to the anaphoric use, the quantificational use will involve the other way of satisfying the semantic anchoring condition of the Domain Presupposition, namely the identification of

the domain with respect to the utterance context. This has the effect that no condition of familiarity goes along with the quantificational use, but instead a much stronger condition of uniqueness. Thus, the two seemingly unrelated uses of definite descriptions fall out naturally from the present account of presuppositions and of domain presuppositions of strong determiners in particular: they simply are manifestations of the two ways of satisfying the Domain Presupposition of strong determiners. The two readings of definite determiners are merely another reflection of the two disjunctive ways of anchoring presuppositions in general.

Nonanaphoric definites unlike anaphoric ones should display the *de re* effect. That this is indeed the case can be seen from examples like (46a):

- (46) a. # If John has made a mistake, he will soon make the second mistake.

If (46a) is true, then there will be a unique second mistake in all the worlds in which John has made a mistake. But (46a) sounds odd unless there is an actual second mistake that John at some point makes. If not, then instead of the definite, the indefinite *a second mistake*, which does not presuppose its domain, has to be used, as in (46b):

- (46) b. If John has made a mistake, he will soon make a second mistake.

Note that (46a) is the analogue of the *proviso* problem for presuppositions of propositions.

(46a) could also be taken simply as evidence that definite descriptions carry an existence presupposition, a presupposition of a proposition which needs to be accommodated globally, or be satisfied with respect to the context rather than the index.¹⁹ In fact, it is hard to decide between these two accounts (which are themselves not equivalent though).

Given my account, the domain presupposition with definite descriptions implies that definite descriptions also carry an existence and a uniqueness presupposition, but an existence and a uniqueness condition associated with definite descriptions could not derive all the effects of the Domain Presupposition. Given the Russellian account that I have adopted, definite descriptions carry a propositional existence condition as well as a propositional uniqueness

condition, but not as presuppositions. Definite descriptions in addition carry the Domain Presupposition, though, which requires prior identification of, in this case, a singleton set, and this is why the existence and the uniqueness conditions come out as presuppositions. But if the propositional existence and uniqueness presuppositions are satisfied, this does not mean that the Domain Presupposition is satisfied too (that is, is semantically anchored). A case where this is not so is a definite description that occurs in an intensional context and has different denotations at the current index and the utterance context, for example in the counterfactuals in (47a) and (47b):

- (47) a. If the president was a democrat, John would be much happier.
 b. If the number of pages of the article had exceeded 50, it could not have been published.

In (47a) and (47b) (given that there is a president and there is an article), the existence presupposition is satisfied, but not the Domain Presupposition. Thus, (47a, b) seem to pose a problem for the Domain Presupposition.

However, the definite NPs in (47) arguably are of a special sort, allowing in fact the Domain Presupposition to be satisfied. Definite NPs may denote individual concepts, that is, functions from circumstances to individuals, as long as they come with a suitable, functional head noun (cf. Janssen 1984). Thus, nouns like *president* or *number* describe functions that map circumstances or objects to individuals. If an NP refers to a function, then a predicate applies to such a function either by taking the entire function into account or else just the value of the function at the current index, as with the predicates in (46a, b). The satisfaction of the Domain Presupposition for definite NPs referring to functions then is unproblematic: context and index will certainly identify the same singleton set containing the relevant function as the domain of the definite determiner.^{20, 21}

6.3.4. *Weak and Strong Quantifiers in other Intensional Contexts*

The Domain Presupposition manifests itself not only in conditional contexts, but is fully general and can be observed in all intensional (modal, temporal, and attitudinal) contexts.

In modal contexts, strong quantifiers generally must range over actual entities, as in (48a), unless they relate to antecedent material,

as in (48b). By contrast, other quantifiers can easily range over merely possible entities as well, as in (48c):²²

- (48) a. John might have written every book.
 b. John might have written many books and he might have published every book.
 c. John might have written ten books.

In (48c), the quantified object NP may range over epistemically possible objects, whereas in (48a) it may range only over entities considered actual (unless, of course, *every* is focused, triggering the domain-independent reading). The Matching Condition need not be fulfilled when strong quantifiers have a restriction dependent on a weak quantifier in the scope of the modal, as in (49):

- (49) John might have written the first chapter of a book.

Thus, the analogy to the case of conditionals is complete.

Attitude contexts, we have seen, display the *de re* effect with presuppositions of propositions, and they do so also with respect to presuppositions of domains – though the data (as always with attitude reports) are not that solid. Without preceding discourse, domain-presupposing quantifiers in a clause embedded under an attitude verb such as *believe* in (50a) tend to range only over actual entities (or rather entities the speaker accepts), whereas other quantifiers can easily range over entities only accepted by the described agent, as in (50b):

- (50) a. John believes that Mary knows all/most ten-year old olympic gold medalists.
 b. John believes that Mary knows some/many/at least two ten-year old olympic gold medalists.

For (50a) to be acceptable, the speaker, not only John, needs to presuppose that there are ten-year old olympic gold medalists. Again, domain-presupposing quantifiers may range over entities the speaker does not accept when they relate to an antecedent in the same attitude context:

- (51) John thinks that there are ten-year-old olympic gold medalists, and he believes that he can meet every ten-year-old olympic gold medalist.

Again, strong quantifiers with a domain dependent on a weak quantifier need not satisfy the Matching Condition:

(52) John believes that he saw the shadow of a ghost.

The Domain Presupposition manifests itself particularly clearly with quantified complements of intensional verbs that take NPs as arguments, for example *need*, *want*, *look for*, and *promise*. In Moltmann (1997), I argued that sentences with NP-taking intensional verbs like *need*, as in (53a), should be analysed as approximately in (53b):

- (53) a. John needs exactly two assistants.
 b. For any minimal situation s such that John's needs are satisfied in s (where s comes as close as possible to what is assumed about the actual world in the relevant respects), John has exactly two assistants in s .

The situations mentioned in (53b) can be treated as indexical parameters for which the truth value of a sentence may be undefined. More formally, (53a) has the logical analysis in (54a), with a new binary connective ' \Rightarrow ' whose semantics is given in (54b):²³

- (54) a. $P_j \Rightarrow Q(\lambda \Rightarrow x[A(x)])(\lambda x[R(j, x)])$
 b. $[S \Rightarrow S']^{w'}=1$ iff for any minimal situation s such that $[S]^s=1$ and s maximally similar to w' , $[S']^s=1$.

In (54a), P is a contextually given satisfaction condition (e.g. being able to do the job or be happy) and R some contextually given relation (e.g. the relation of possession, availability, or employment). Given (54), (53a) is analysed as 'John needs exactly two assistants just in case in any minimal situation s which is like the actual world except that John has whatever property P defines the satisfaction of his needs, John stands in the contextually given relation R to exactly two assistants'.

The minimality condition referred to in (54b) is quite important for the present concerns. It is motivated by the semantic difference between (53a) and (53c) (cf. Zimmermann 1992) and, more strikingly, the difference between (55a) and (55b):

- (55) c. John needs to have exactly two assistants.
 (56) a. John promised only two papers.
 b. John promised to write only two papers.

Unlike (54a), (55) cannot be true if John is satisfied in a world in which he has ten assistants; it implies two assistants being the upper limit for John's satisfaction in any world. (56a) and (56b) differ in that (56a) allows John's promise to be fulfilled even if he writes ten

papers, whereas (56b) in such a situation implies the lack of the fulfilment of John's promise.

Intensional verbs display the domain presupposition in that they lack a certain intensional reading with strong quantifiers as arguments, as in (57a, b):

- (57) a. John needs every assistant.
 b. John needs most assistants.

On the relevant reading, (57a) and (57b) would follow from (54a), since John will have every assistant or most assistants in any minimal satisfaction situation. The reason is that any one of the satisfaction situations, being minimal, will contain only assistants that John has and no others. Hence John will have all the assistants contained in such situations.

The absent reading is excluded by the domain presupposition as follows. The domain presupposition will require that the restriction of the quantifier *every assistant* in the minimal satisfaction situation coincide with the restriction the quantifier would have relative to any of the worlds in the previous context set. But this is not the case under normal circumstances (that is, when John does not need all the assistants there are).

The domain presupposition also excludes intensional readings of verbs with definite NPs. (58a), unlike (58b), does not allow for an intensional reading.²⁴

- (58) a. John is looking for his wife.
 b. John is looking for a wife.

The reason for the unavailability of an intensional reading of (58a) cannot be the uniqueness and existence condition of the Russellian analysis of definite descriptions. On the intensional reading of (58a), every minimal satisfaction situation (given normal circumstances) contains a unique (possible) woman that is John's wife, satisfying the uniqueness and existence condition. The intensional reading of (58a), however, can be excluded on the basis of the domain presupposition of *his* as a strong determiner: the domain of *his wife* in any satisfaction situation does not coincide with the domain of *his wife* relative to the actual world of evaluation, given that John does not actually have a wife. Because of the domain presupposition of *his*, (58b), with a nonpresuppositional determiner, has to be used for the intensional reading.

Note, though, that (58a) could also be excluded if definite descriptions carried presuppositions of propositions, namely the uniqueness and the existence condition. ‘Global accommodation’ of such presupposition would require those conditions to be satisfied with respect to the actual world, not (just) the counterfactual situations.

As in the case of counterfactual conditionals, strong quantifiers with a domain dependent on an indefinite do allow for an intensional reading:

- (59) a. John needs the advice of an expert.
 b. John needs the comfort of a wife.

There are certain cases in which NPs with nonintersective determiners do allow for an intensional reading, and that is because in those particular cases the domain presupposition is satisfied in some other way. One such case are partitives with a nonintersective determiner, which always allow for an intensional reading, as in (60):

- (60) John needs more than half of the solutions.

The reason why partitives with a strong determiner are acceptable is obvious: The restriction of the strong determiner clearly is semantically anchored. The definite NP that provides the quantification domain has its own referential force and can be evaluated with respect to the utterance context, that is, *de re*. Then (60) would then be true in a world *w* just in case for any satisfaction situation *s* of John’s needs (maximally similar in relevant respect to *w*), John ‘has’ more than half of the entities contained in $[solution]^w$ in *s*.²⁵

Another case in which a strong NP allows for an intensional reading is when the NP involves quantification over merely possible objects. Such NPs come in two forms: either with a restriction containing a modal relative clause, as in (61a), or with a modal adjective, as in (61b):

- (61) a. John tried every solution that one can imagine.
 b. John tried every possible solution.

Here *every possible solution* and *everything that one can imagine* has a domain consisting of merely possible entities, the set of things *x* such that it is possible to imagine *x*. Clearly, the domain of any world in the previous context does not include all possible entities. But still the Domain Presupposition is satisfied. The restriction of the quantifier is inherently defined so as to extend the domain of any possible world.

Thus, the relative clause in (61a) will have the following extension at a possible world w , for R being the relevant accessibility relation, I the property of being imagined, and S the property of being a solution:

(61) c. $\{d \mid \exists w' (w R w' \ \& \ d \in I^{w'} \ \& \ d \in S^{w'})\}$

For (61c), it is assumed that the head noun *solutions* is actually interpreted in a position inside the relative clause, following certain proposals in the syntactic literature (Vergnaud (1974) being the earliest such proposal, Kayne (1995) a more recent revival). It is rather harmless to assume that different worlds share the same sets of merely possible objects allowing the Matching Condition to be satisfied in (61a) and (61b).

6.4. *There*-sentences

Can the domain presupposition also help explain the resistance of *there*-sentences to strong NPs? In what follows I want to argue that the class of complex NPs acceptable in *there*-sentences is in fact characterized best in terms of the Domain Presupposition, and moreover that there is a plausible semantic analysis of *there*-sentences that explains their resistance to domain-presupposing NPs.

Earlier, simple NPs acceptable in *there*-sentences were characterized as those that are intersective. There are problematic cases for that criterion among complex NPs, however, as was noted by Keenan (1987) himself. These are Boolean combinations of determiners as in (62):

- (62) a. There are zero or else more than zero students in the garden.
 b. # There are all or else not all students in the garden.

The disjunctions of weak determiners in (62a) and of strong determiners in (62b) are coextensional, intersective determiners. But (62a) and (62b) clearly differ in acceptability.

The Domain Presupposition clearly distinguishes the NPs in (62a) and in (62b). None of the disjuncts of the disjunctive determiner in (62a) is domain-presupposing, and thus the entire disjunction won't be. But both disjuncts in (62b) are, and hence the disjunctive determiner will be domain-presupposing as well.

Keenan's (1987) solution to the problem is to take into account the syntactic structure of NPs: an NP acceptable in *there*-sentences must be either syntactically simple and have an intersective determiner or have as its determiner a Boolean combination of intersective determiners (or else be a Boolean combination of NPs with intersective

determiners). The problem with this condition is that it is not clear why the syntactic structure should play a role at all in a semantic explanation of the restriction imposed by *there*-sentences. Moreover, Keenan does not explain how the unacceptability of quantifiers follows from the semantics of *there*-sentences in the first place.

Zucchi (1995) takes examples such as (62a) and (62b) as an indication that a discourse-related property, rather than a logical property, governs the acceptability of NPs in *there*-sentences. Zucchi takes this property to be the presupposition of strong quantifiers to have a nonempty quantification domain. *There*-sentences resist strong quantifiers by imposing the condition that the quantifier be neutral as to the emptiness of the quantification domain. But this proposal is empirically inadequate.²⁶ It does not account for negative quantifiers with exception phrases:

- (63) a. There is no one except John in the garden.
 b. There is no child except the one I just mentioned in the garden.

Negative quantifiers modified by an exception phrase always count as weak, regardless of the status of the complement of *except* (cf. Keenan 1987). But with a definite complement of *except*, they presuppose a nonempty domain, because NPs with exception phrases presuppose that the exception is included in the restriction of the quantifier (cf. Moltmann 1995).

The Domain Presupposition can account for the acceptability of the NPs in (63). Weak NPs with exception phrases do not presuppose their domain, but rather presuppose only a subset of it, the set containing the exception.

But why should *there*-sentences exclude domain-presupposing NPs? I want to suggest that *there* prevents the domain of a strong quantifier to be evaluated in such a way that the utterance context acts as the first and the second parameter of evaluation. Formally, this means that *there* acts as an operator which serves to eliminate the utterance context as a parameter of evaluation, or better replaces that context by a dummy index '#'. Whereas expressions may still have a content at #, # cannot act as an index of evaluation and yield an extension:

- (64) For any intension A, $A^{\#} = \text{undefined}$.

The *there*-operator should only affect the interpretation of the NP and not any adverbial or the coda, which of course do allow for

strong quantifiers. That is, *there* should directly apply to the NP, influencing its interpretation with respect to the two indices, as in (65):

(65) The semantics of *there*

For any determiner *D*, nominal *N'* and any index *i*, [*there* *D N'*]^{*i*} = [*D N'*][#].

There thus is a special intensional operator, attaching to an NP and shifting its context of evaluation. If *D* is strong, then the Matching Condition requires [*D N'*][#] to be evaluated as [*D*][#](*O*), where for any index *i'*, *O*^{*i'*} = ([*N'*][#])[#], which, however, given (64) is undefined.

There is a syntactic plausibility for (65) if *there* needs to be co-indexed with the *N'* for formal reasons (cf. Reuland 1985; Safir 1987).

(65) should be modified in one respect. There are certain predicates whose extension is entirely independent of any particular time or world, that is, that always have the same extension regardless of the index of evaluation, namely nouns that describe merely possible objects or kinds of objects (in the sense of the denotation of *that kind of object*, though, rather than natural kinds). The extension of those nouns should be defined even for the dummy index. In fact, strong NPs quantifying over kinds or merely possible objects are acceptable in *there*-sentences:

(66) a. There is everything in John's car that one can imagine.

b. There is every possible solution listed in the book.

(67) There is every kind of book on the shelf.

Possible objects do not belong to any particular world, and thus properties used to quantify over them will not have different extensions at different worlds. Kinds (in these sense of sorts of objects, not natural kinds) exist independently of any possible world, and hence a domain of kinds will remain the same for any index of evaluation. It makes thus sense to say that a property is defined for the dummy index in one case, namely when no two indices could possibly yield different extensions of that property:

(68) Revised Condition on the dummy index

For any property *P*, *P*^{#,#} is defined only if for no indices *i* and *i'* *P*^{*i*} ≠ *P*^{*i'*}.

By (68), the Matching Condition can be satisfied in the examples in (66) and (67).

But what happens when an NP in a *there*-sentence has an incomplete restriction (relating to antecedent material) and thus does not require the satisfaction of the Matching Condition? As a matter of fact, a determiner with an incomplete restriction obtained from the previous discourse context is not easy to get in *there*-sentences. Thus, *some books* as well as *every book* in (69) can hardly be understood as ‘some books John wrote’ or ‘every book John wrote’:

- (69) If John had written books, then there would be some books/
every book here on sale.

This suggests that *there* not only inactivates the utterance context, but also inactivates background properties completing the restriction of the NP in question. Formally, the *there*-operator then both replaces the utterance context by the dummy index and eliminates any property coindexed with the N' in question from the background:

- (70) [*there* D N']^{i,b}=[D N']^{#,b'}, where b' is like b except that it contains no property $P \in b$ so that P and N' are coindexed.

There-sentences behave like intensional verb constructions in allowing certain other strong NPs, for, of course, the same reasons. First, *there*-sentences allow for strong NPs with a restriction dependent on an indefinite:²⁷

- (71) a. There is the wife of a prisoner in front of the building.
b. There is the father of one of your students at the door.

Moreover, partitives with strong determiner are acceptable in *there*-sentences, as in (72):

- (72) a. There are more than half of the students in the garden.
b. There are half of the guests in the garden.

Pronouns and proper names are also unacceptable in *there*-sentences, even though they do not involve a strong determiner. But as generalized quantifiers they presuppose their domain (the singleton set of the entity they refer to), and for that reason they are unacceptable in *there*-sentences.

7. CONCLUSIONS

The paper has outlined a rather different view of presuppositions than the one familiar from dynamic semantic theories. The fun-

damental idea of the present view is that when presupposition-carrying expressions are used in a sentence, their presuppositions need to be verified or identified prior in the truthconditional evaluation of the sentence than the evaluation of the presupposition trigger. This condition of semantic anchoring is a semantic condition involving the formal or evaluative context to which the presupposition trigger has contributed semantically. As such the condition does not make reference to intentional notions of pragmatic presuppositions or the way sentences are processed. Quite strikingly, the ways semantic anchoring can be achieved are exactly the same for presuppositions of propositions and for presuppositions of quantifier domains.

If the overall account is right, then the problem of presupposition projection, especially in intensional contexts, does not require and perhaps should better not make use of change of information states in the evaluation of complex sentences. All it requires besides familiar double indexing is a representation of the ‘anaphoric completion’ of a sentence by means of a background, a minimal set of ‘antecedent material’ which may change in the course of the evaluation of a sentence and of course a discourse.

ACKNOWLEDGEMENTS

I would like to thank Hans Kamp, Bob Fiengo, Martin Stokhof, Ede Zimmermann audiences at the Universities of Nijmegen, Paris VII, Stuttgart, and the participants of graduate courses at CUNY and UCL for stimulating discussions and Paul Dekker, Bart Geurts, and Rob van der Sandt for comments on an earlier version of this paper.

NOTES

¹ This insight is not limited to dynamic approaches, though. Also Fiengo and May (1994) make use of the previous discourse context for the interpretation of a sentence.

² See King (2001) for the various philosophical motivations of structured propositions and the various versions of structured-propositions accounts.

³ Structured propositions are in fact just as suited for capturing the anaphoric nature of presuppositions as the discourse representations in Discourse Representation Theory (DRT) (Kamp 1981; Kamp and Reyle 1993). It is then no surprise that the solutions developed within DRT for some of the problems arising for the Sat-

isfaction Theory of presuppositions (cf. Section 3) can be straightforwardly be taken over by the structured propositions account.

⁴ Another advantage for using structured propositions is that structured propositions may be based on smaller or larger constituents of the sentence, with different semantic effects, a possibility that I will exploit in Section 6.3.1.

⁵ Heim's (1992) account makes in fact not use of a single secondary context, but of all contexts compatible with what is presupposed about the relevant agent's propositional attitude. Of course this amounts to the same thing.

⁶ Anaphoric presupposition triggers differ from conceptual ones also in that they may require a merely formal link to an antecedent, in examples like (1a, b):

- (1) a. John may make a mistake if he won't do it again.
 b. John will go if Mary goes too.

In such examples, no condition imposed by the presupposition trigger needs to be satisfied by neither the index nor the context. An account of these phenomena goes far beyond this paper, though.

⁷ For another treatment that makes the distinction see Zeevat (1992).

⁸ It is generally agreed that for anaphoric presupposition triggers such as *again*, *too*, or *even* to find an antecedent is a condition on the acceptability, not the truth value of the sentence (cf. Karttunen and Peters (1979), Soames (1989)).

⁹ As a matter of fact, in van der Sandt and Geurts (1999), quantifier domain presuppositions are construed as propositions, but they will ultimately come out as sets or properties, since they are always open propositions.

¹⁰ A familiar fact is that *the man* and *John* in (11) are acceptable on a 'list-reading' of the sentence.

¹¹ Other logical characterizations of NPs acceptable in *there*-sentences are given in Barwise and Cooper (1979) and Higginbotham (1987). See Zucchi (1995) for a discussion of Barwise and Cooper's and Higginbotham's account.

¹² There are other proposals in the literature that trace the unacceptability of strong quantifiers in *there*-sentences to a context-related property of strong quantifiers, a property which is taken to conflict with some condition imposed by the meaning of *there*-sentences. One such proposal is that *there*-sentences are subject to the indefiniteness effect because only NPs with weak determiners can conform to the basic function of *there*-sentences, namely to enlarge the domain of discourse (cf. ter Meulen and Reuland (1987, Introduction), Enç (1991), and de Jong (1987)). This proposal is problematic when applied to examples like those below, where the function of the quantifier obviously is not to add new entities to the domain of discourse, but to characterize a given domain:

- (1) There are exactly two students/at most two students/no students except John in the garden.

¹³ The Matching Condition could not possibly be viewed a condition on the accessibility relation associated with a particular intensional operator. For this would leave unexplained why weak determiners do not impose the condition.

¹⁴ There are of courses other cases of incomplete quantifier restrictions, namely where the completion does not come from the immediately preceding linguistic context, for example in *John met everyone*, uttered out of the blue. There is a range of literature dealing with such cases and leading to some interesting recent debates, including Barwise and Perry (1983), Recanati (1996), Stanley (2002). In this paper, I

will stay neutral as to how to account for those cases of incomplete quantifier restrictions.

¹⁵ It has been argued that also in nonembedded sentences, the completion should not be a set (as e.g. in Westerstahl 1984), but a property (cf. Soames (1986), Stanley (2002)). This is because of the possibility of attributively used incomplete definite descriptions and the possibility for an utterance of *John met every student* to be true relative to one situation with one set of students, and false in another situation where the set of students is larger. These cases at first seem to pose a problem for the Matching Condition. But on the other hand they can be considered cases of the domain-independent reading of strong quantifiers discussed below. The cases in question show that this reading does not only occur in intensional contexts, but also in extensional ones, and would thus invite the same treatment.

¹⁶ Not only for the evaluation of the truth value of a proposition need [*every*] apply to [*horse*], but also when evaluating its intension, the set of possible worlds in which the structured proposition is true.

¹⁷ Note that a bound variable in the restriction of a strong quantifier does not guarantee the satisfaction of Semantic Anchoring condition. This is only the case if the pronoun is bound by an indefinite (and thus can be represented by a parametric object), but not if it is bound by a universally quantified NP:

(1) If everyone sells his horse, John would be happy.

His horse in (1) has to meet the anchoring condition just like *everybody* has to.

¹⁸ Other authors that advocate a unified Russellian account are Neale (1990) and Ludlow and Neale (1991).

¹⁹ Note that if the existence and uniqueness conditions are not satisfied, a narrow-scope reading is impossible, as seen in (1a); a nonpresuppositional indefinite as in (1b) has to be chosen instead:

- (1) a. ?? The second mistake might be fatal.
 b. A second mistake might be fatal.

²⁰ A good test that the NPs in question have indeed a functional reading is the applicability of the predicate *change*:

- (1) a. The president has changed.
 b. The number of pages of the article that John is revising has changed.

Change is a predicate that can apply only to function-like objects.

²¹ A relevant observation is also made in Gamut (1991), where it is noted that an inference from (1a) to (1b) below is impossible:

- (1) a. The president of the US must have been born in the US.
 b. Someone must have been born in the US.

Apparently, *someone* cannot quantify over the kinds of functions that *the president of the US* can refer to. By contrast, a quantified NP with a functional head noun is able to quantify over functions:

- (2) Every European head of state used to be a king or a queen many years ago.

Thus, what at first sight seemed to be a special property of definite NPs (and an apparent problem for the domain presupposition) turns out to be a possibility for NPs in general, namely that of referring to or quantifying over functions.

²² Von Stechow and Iatridou (2003) argue that epistemic modals do not allow for a wide-scope reading of quantifiers. The Matching Condition manifested in (48a) is obviously quite different from a wide-scope reading.

²³ The requirement of maximal closeness to the actual world in (54b) is necessary for the same reasons as in the case of overt conditionals (cf. Lewis 1972). Suppose (52a) is true and P is the property of being able to do the job. Then there may be situations *s* in which John has P, but which are so far removed from the actual world that John need not have exactly two assistants in *s*, for example situations in which John has three times as much time and energy than he actually has.

²⁴ See Keenan (1987) for an analysis of *his* as a strong determiner.

²⁵ When discussing partitives, I have on purpose left out *most*, which is usually classified as a strong determiner. *Most* is special in that it is unacceptable with partitives in intensional verb contexts and *there*-sentences:

- (1) a. # John needs most of the solutions.
 b. # There are most students in the garden.

Perhaps *most* is not an ordinary quantifier at all with a meaning approximating something like *more than half* (Barwise/Cooper 1979), but rather has the status of a referential expression meaning something like ‘the greatest relevant subgroup or subquantity’ of the entity in question, just like the comparative superlative *the most*.

²⁶ Besides that, Zucchi himself does not derive the unacceptability of presuppositional quantifiers from the semantics of *there*-sentences, except from some stipulated condition associated with *there*-sentences.

²⁷ The constructions in questions cannot be accommodated by exempting nonfamiliar definites from the Domain Presupposition since the Domain Presupposition was crucial for explaining the absence of an intensional reading of (1):

- (1) John is looking for his wife.

Moreover, the Domain Presupposition is active also in other cases of nonfamiliar definites, for example superlatives, which are rather bad in *there*-sentences:

- (2) ?# There is the best chess player that I know in Russia.

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