

**Against Ambiguity and Underspecification:
Evidence from Presupposition as Anaphora**

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Abstract

I propose a critical assessment of both the underspecification (sense-generality) and ambiguity positions. I argue that within the frameworks that espouse the dynamic approach to meaning construction, a non-ambiguous interpretation ensues. My Default Semantics that merges the logical form with the output of the intentionality of the corresponding mental states (Jaszczolt, 1999a, b, 2000) demonstrates that the concept of underspecification is redundant in the case of definite descriptions. In the case of apparently semantically ambiguous referring expressions, the speaker's intentions interact with the logical form of the sentence and produce a unique propositional representation. The problem of ambiguity does not arise because intentions 'intrude' into the semantic representation. The view is compatible with pragmatic intrusionism of dynamic-semantic approaches such as Discourse Representation Theory. In this paper I present an argument against underspecification that comes from the approach to presupposition as anaphora by van der Sandt (1992) as supplemented by Krahmer and van Deemter (1998). Van der Sandt suggests that presuppositional expressions are anaphoric expressions. When accounted for in terms of a dynamic semantic theory, they exhibit the capacity to bind to an antecedent or to accommodate in the relevant context, and these processes are aided by pragmatic factors. I propose an amendment to van der Sandt/Krahmer and van Deemter's approach by demonstrating that where multiple representations are viable, they are ordered on the scale of preference that does not allow for ambiguities. I replace van der Sandt's admittance of some degree of ambiguity of presuppositional anaphors with a scale of salience of possible anaphors, ranging from the default to the most unlikely one. Underspecification is not denied its theoretical status: if the theoretical discussion focuses on the theoretical question as to *to what extent* sentences have to be disambiguated for logical reasoning to proceed (van Deemter, 1998), distinguishing the stage of underspecification is justified. Instead, I question the need for distinguishing underspecified representation as a separate stage in utterance interpretation, at least in the fragments of English that I have tested so far.

1. Ambiguity and Underspecification: Setting the Scene

The boundary between what is said and what is communicated has been drawn in a variety of ways. The main standpoints can be summarized as follows (cf. Jaszczolt 1999b: 2):

- (i) Some sentences are semantically ambiguous. This is the traditional view advocated, among others, by Russell.
- (ii) There is no semantic ambiguity. The differences in meaning between the two (or more) readings can be attributed to implicated information. This is Grice's postulate of unitary semantics, also classical by now, complemented with conversational implicatures.
- (iii) There is no semantic ambiguity. The differences in meaning belong to what is said rather than what is implicated. Semantics is underspecified as to these aspects of meaning. Within this approach, the distinction has been proposed between the semantics of natural language and the semantics of the conceptual representation system (Carston, 1988; see also Recanati, 1989). Pragmatic factors, such as contextual information and a form of (Gricean or post-Gricean) principle of cooperation based on an account of speaker's intentions, contribute to the latter. This view is held by Atlas, Kempson, Sperber and Wilson, to name a few.
- (iv) There is no semantic ambiguity, semantics is underspecified, but the differences in meaning belong to the middle level located between what is said and what is implicated. The main proponents of this view are Bach 1994a, b and Levinson (1995, 2000), although the middle level is interpreted by them rather differently.

In this paper I argue against both underspecification and ambiguity positions by demonstrating that within the frameworks that espouse the dynamic approach to

meaning construction, such as Discourse Representation Theory (henceforth: DRT, Kamp and Reyle, 1993) or File Change Semantics (Heim, 1988), a non-ambiguous interpretation ensues without the need for the level of underspecified semantics.¹ Instead of underspecification, I suggest a merger of the dynamic semantic representation with the output of intentionality of the corresponding mental states. I call this approach

(v) Default Semantics

(see also Jaszczolt, 1999a, b, 2000a). I use two interrelated semantic phenomena for this discussion: (i) the default referential sense of referring expressions and (ii) presupposition as anaphora. Point (ii) is the new research on the ordering of interpretations of presuppositional expressions and constitutes the main part of this paper. It is concluded that in dynamic approaches to meaning the issue of the semantics/pragmatics boundary does not arise, neither does the ambiguity/underspecification dilemma.

2. A (Summarized) Argument from Referring Expressions

As is well known, definite descriptions allow for two readings: referential, when they refer to a particular individual, and attributive, when they are used to attribute properties to whoever or whatever undergoes the description. However, this duality of reading does not yet suggest that these expressions are semantically (or pragmatically) ambiguous. As I have demonstrated with a variety of semantic and syntactic arguments (Jaszczolt, 1997, 1998, 1999a, b, 2000a), the referential reading is the unmarked reading and is arrived at by default, unless the context of the utterance indicates that the attributive reading has been intended. The main argument comes from the role of intentions in communication. According to Grice (1957, 1969), the hearer understands the speaker's utterance by recognizing the speaker's intention. Bach and Harnish (1979) call it a communicative, or illocutionary-communicative

intention and say that it is guaranteed by the so-called 'communicative presumption': whenever the speaker says something to the hearer, he/she says it with some illocutionary intention. The fulfilment of this intention consists in its recognition. Next, Sperber and Wilson (1986) added a distinction between the communicative and the informative intention, where the second is embedded in the first. By communicative intention they mean making it mutually obvious to the speaker (or, generally, communicator) and the hearer (or, generally, addressee) that the communicator has this informative intention. Finally, Bach (1987, 1992) adds the referential intention, which is a part of the communicative intention:

"...what is said, to the extent that it is not fixed by linguistic meaning, is determined by speaker intention, which itself can include the intention to refer to what one is demonstrating." Bach (1992: 140).

All in all, speakers mean something by uttering a sentence, which is an equivalent claim to saying that they utter the sentence with an intention of inducing a belief in the hearer by means of the recognition of this intention (cf. Grice, 1957: 219). There are three types of intentions recognised: the over-arching communicative, and two embedded intentions: informative and referential.

Now, the role of the referential intention is most conspicuous in the interpretation of definite descriptions such as the one in (1):

(1) The man in the blue shirt is very rich.

It can be observed that the hearer normally assumes that the referential intention accompanies such an utterance and hence he/she assigns to it a referential interpretation. This is intuitively correct. More support comes from the *intentionality* of the underlying mental state. Intentionality makes mental states *about* or *of* something (object, state, event). These objects then trigger a semantic interpretation.

Intentionality has a long and successful tradition (Brentano, 1874; Husserl, 1900-1901, 1913; Searle, 1983, 1990) and, moreover, it has recently been almost reconciled with naturalism, i.e. the claim that everything that the sciences talk about is physical (see Woodruff Smith, 1999; Fodor, 1994; Jaszczolt, 1995). Intentionality applies directly to language and language use on the assumption that language is one of the vehicles of thought. In view of the existence of numerous arguments to the effect that language is used in at least some varieties of thinking, I am going to espouse this assumption. So, in other words, intentionality becomes a property of linguistic acts and hence when the speaker utters a sentence, he/she does so with an intention to speak about someone or something, or, in 'weaker' acts of communication, about a state or event. The strength of intending is a crucial notion in this argument: when intentionality is strong, the speaker refers to an object. When it is weaker, or dispersed (cf. Jaszczolt, 1996, 1999b), the speaker talks about the event or state as a whole, without using the definite description referentially. I have also distinguished the middle case of a referential mistake, where intentionality is weakened as a result of a wrong referent being intended – Donnellan's (1966) standard scenario of an inappropriate description obtains an interpretation in this way. Hence, we end up with three degrees of intentionality: strong, in the referential reading of definite descriptions; weaker, in the referential reading that involves a referential mistake; and the weakest, dispersed, in the attributive reading, where there is no referential intention present.

The best way of representing these three readings is in belief contexts such as (2):

- (2) Ludwig believes that the man in the blue shirt is very rich.

By embedding the definite description in the belief construction we can demonstrate that the three readings correspond to the three different degrees of information the holder of the belief (here: Ludwig) has concerning the individual in the blue shirt.²

The most adequate theoretical framework to represent them is DRT. I shall use Kamp and Reyle's (1993) version of this theory. I suggested the single representation of these three readings, where I indicated the three options of placement of the relevant discourse referent³ in the universes of various discourse representation structures (DRSs): the outer, middle, or inner (most embedded) one (Jaszczolt, 1998: 16, 1999b: 287, 2000: 173). The fact that there are these three options may, to a hasty theoretician, indicate either a semantic ambiguity of definite descriptions and propositional attitude constructions or their underspecified semantics. However, neither of these has to be the case. The DRT framework merely allows us to represent the options of interpretation; the decision as to whether the presence of the options indicates an ambiguity, underspecification, or some other phenomenon lies, at present, outside the scope of DRT.

Now, I have said that the three readings of a referring expression⁴ correspond to the three degrees of strength of the referential intention that accompanies the utterance of the expression. The strongest referential intention gives rise to the default reading as intentionality is fully realised there, without being impeded by referential mismatches or dispersion. Intentionality renders a scale of salience of the readings: from the strong, default referential, through the weaker, referential with a referential mistake, to the weakest, attributive, where the referential intention is dispersed and does not reach any object. The scale of the strength of referring fits well in the hierarchies of referential properties of referring expressions that carry various amounts of information (cf. e.g. Gundel, Hedberg and Zacharski's (1993) Givenness Hierarchy) in that it extends them beyond the *types* of expressions to the uses *within* the type: definite descriptions occupy a place in the hierarchy, but also exhibit an internal cline of properties.

If the referential reading is the unmarked one and there indeed is such a cline of salience, then it will not do to postulate a semantic ambiguity: some readings are more salient than others. In any case, there have been multiple arguments put forward in the literature against the semantic ambiguity stance; they all spring out of Grice's

(1978) Modified Occam's Razor, the methodological principle that warns against multiplying senses beyond necessity. To summarize crudely two decades of research in one brief statement, this principle gave rise to the idea of underspecification, namely the claim that the semantic representation, in the form of the logical form as an output of grammar, can be underspecified as to some crucial aspects of meaning that are essential for determining truth conditions of the sentence. Pragmatic processes intrude into the semantic representation and help produce a fully truth-evaluable propositional representation. Many problems with sentential connectives and definite descriptions have been frequently approached in this way. However, underspecification need not be the only alternative to ambiguity. As has been increasingly more frequently argued, in addition to the semantic and the pragmatic level, there is also a level of default interpretations; that is, there are meanings that are neither the output of the syntactic processing of the sentence, nor the product of inference. They are the standard, conventional meanings arrived at on the basis of the general lexical *and* encyclopaedic knowledge (see e.g. Lascarides and Copestake, 1998; Levinson, 1995; Jaszczolt, 1999a, b, and various strands of research on the rhetorical structure of discourse, e.g. Lascarides and Oberlander, 1993; Lascarides, Copestake and Briscoe, 1996; Asher and Lascarides, 1995).⁵

The way to incorporate defaults in the semantics and pragmatics seems to be this. The speaker's intentions are not separate from the linguistic expression: language is one of the vehicles of thought and hence if intentionality pertains to thoughts (mental states), it also pertains to language. And if intentionality does, so do intentions in communication, including the relevant referential intention. Hence, intentions 'intrude', so to speak, in the semantic representation producing the unique, default interpretation. This interpretation can be overridden if the context suggests so. The non-default interpretations are the output of pragmatic processes of inference from the context. So, ambiguity does not arise, neither is there any need to consider the underspecified representation: although the output of grammar *is* semantically underspecified, there is no underspecified logical form *separate* from the output of

intentionality. This view is compatible with the semantic intrusionism of dynamic semantic theories such as DRT where pragmatic factors 'intrude' into a unitary semantic domain, or, MEANING = _{def.} context-change conditions (see Turner, 1999a). There is one discourse-level representation to which syntax, semantics and pragmatics contribute. Combining the intrusionism of DRT with this account of intentions renders the desired default interpretations.

All in all, the conclusion that there is some form or other of default meaning has been reached independently by various linguists in the past few years, both in the research on discourse and in the area of lexical semantics. This conclusion clearly demonstrates that the boundary between semantics and pragmatics need not be drawn or, perhaps, cannot be drawn. Not only do pragmatic processes contribute to the propositional representation, but propositional representation may be the result of combining the logical form directly with the properties of mental states such as intentionality. If it is indeed so (and various arguments to this effect have been provided, see e.g. Jaszczolt, 1999b), then it is not very useful to discuss the boundary between semantics and pragmatics; there are either three levels of meaning, with the middle one being neither semantic nor pragmatic, as Levinson (1995, 2000) has it, or various processes of utterance interpretation should be semanticized, i.e. made fit in the dynamic representations of discourse.

3. An Argument from the Properties of Presuppositional Expressions

Another argument against ambiguity and underspecification is implicit in the current research on presupposition that stemmed out of van der Sandt (1992)⁶, supplemented among others by Krahmer and van Deemter (1998). Van der Sandt suggests that presuppositional expressions should not be regarded as referring expressions, as the standard Fregean view has it. They should be accounted for neither in terms of non-standard logic (i.e. relegated to semantics) nor in terms of pragmatic theory. Instead, presuppositional expressions are anaphoric expressions, similar to pronouns and other anaphors. I shall first summarize van der Sandt's proposal and next move on to

suggesting an amendment. This amendment will consist of replacing van der Sandt's admittance of some degree of ambiguity of presuppositional anaphors with a scale of salience of possible anaphors, ranging from the default to the most unlikely one.

The problems with the standard view of presuppositions as referring expressions are as follows. Sentences (3)-(5) should be truth-value-less when the second component of the complex sentence suffers from presupposition failure. In fact, they are not truth-value-less. Moreover, the presupposition that John has children does not carry over to the whole compound.

- (3) John has children and *his children* are bald.
- (4) If John has children, *his children* are bald.
- (5) Either John does not have any children or *his children* are bald.

(from van der Sandt, 1992: 334). Also, in (6), the phrase 'his child' is not a referring expression because the pronoun is bound by an external quantifier.⁷

- (6) Someone had a child and his child was bald.

(from *ibid.*). Van der Sandt also demonstrates that defining presupposition in terms of entailment does not work, essentially because presupposition is a non-monotonic relation. The presupposition may disappear as a result of the growth of information, as in (7b) compared with (7a):

- (7a) It is possible that *Harry's child* is on holiday.
- (7b) It is possible that Harry does not have a child, but it is also possible that {*he/Harry's child*} is on holiday.

(from van der Sandt, 1992: 335; similar non-monotonicity can be observed for the entailment of the negation of (7a)). Although presuppositions appear to be non-

monotonic, and so cancelable and defeasible, the pragmatic approach to presupposition is equally rejected by van der Sandt. Semantic content should not be viewed as computed prior to presuppositions. According to him, all pragmatic information may exhibit binding with the original expression. For example, in (8) and its presupposition (9), we have to ensure that the truth-conditional content includes the information that we are specifying the same child-cat pairs.

(8) A child beats his cat.

(9) A child has a cat.

(from van der Sandt, 1992: 340). So, it can be clearly seen that as far as presuppositions are concerned, the semantics/pragmatics distinction need not be drawn – or at least need not be observed in utterance interpretation. Also, on the pragmatic account, adding presuppositions is treated uniformly as a result of accommodation, inference and adjusting the context to make them fit. Contextual incrementation and accommodation are not distinguished.

On the contrary, on van der Sandt's picture, presuppositions, when accounted for in terms of dynamic semantic theory such as DRT, exhibit the capacity to bind to an antecedent or to accommodate in the relevant context. DRT mirrors the incremental process of utterance interpretation by providing discourse referents that function to collect whatever information, concerning the given referent, is available as discourse progresses. Van der Sandt claims that presuppositions are anaphors and can be analysed in the same way in which pronominal and other anaphors are handled. But, in addition, since they contain some descriptive content, they can also function successfully when the antecedent cannot be found; in this case, they are subject to contextual repair, i.e. they are contextually accommodated. Accommodation is performed with respect to the previous discourse, so, in terms of DRT, the antecedent is normally found in the main DRS (the outer box). This is the case in (10):

- (10) If John has grandchildren, his children will be happy. They wanted to have offspring long ago.

(from van der Sandt, 1992: 351). But, sometimes, the presupposition can be bound in a subordinate box instead, as in (11):

- (11) If John has children, he will regret that all of his children are bald.

(from *ibid.*: 353).

This proposal differs significantly from the idea of contextual satisfaction held by Karttunen, Stalnaker and Heim, according to which presuppositions of a sentence must be entailed by the context.⁸ Van der Sandt says that the relation of entailment between a potential antecedent and an anaphoric expression is not a sufficient condition for selecting this potential antecedent. For example, there can be several potential antecedents to a masculine pronoun available. It is not the case that as soon as a suitable antecedent is encountered, it is selected. Instead,

"...presuppositional anaphors may be genuinely ambiguous, that is, there should be cases where we can either select among different antecedents or have the choice between either binding or accommodating."

van der Sandt (1992: 349).

For example, in (12):

- (12) If John has an oriental girlfriend, his girlfriend won't be happy.

(from van der Sandt, 1992: 350), 'his girlfriend' may or may not be coreferential with 'an oriental girlfriend'.⁹ In other words, the presuppositional anaphor 'his girlfriend' can be bound to 'an oriental girlfriend' or can be accommodated.

This claim of a 'genuine ambiguity' is what I would like to question. Firstly, van der Sandt (1992: 357) himself states that

"Accommodation generally will take place at the highest accessible level such that the resulting structure does not violate general constraints on (un)binding and acceptability."

So, the 'genuine ambiguity' does not apply to finding the sites for accommodation. Instead, there seems to be a default, albeit a further unexplained one: we are not told why accommodation proceeds this way. Moreover, generally, accommodation ensues when binding cannot work. Accommodation proceeds in the opposite direction to binding: binding takes place at the *nearest* accessible site, going from the anaphor upwards along the projection line. This accounts for some less problematic examples such as (13):

(13) John has a goose and every farmer loves *his* goose.

(from *ibid.*: 352). The intuitive explanation of the differences between the ordering of sites for binding and accommodation is that in the search for binding we may go all the way up and not find a suitable antecedent, at which place, i.e. on the top of the projection line, accommodation begins. But this does not yet render cases of van der Sandt's 'genuine ambiguity', unless we are prepared to treat the notion of a 'suitable' antecedent in a very rich, context-dependent way. Normally, there is one preferred understanding, especially that van der Sandt admits pragmatic interference in the process of anaphora/presupposition resolution. However, by the same argument, if pragmatic inference is a powerful helping hand, then talking about the ordering of binding and accommodation, including the ordering of sites within them, seems unnecessary. Since van der Sandt follows this route and orders the readings, he is obliged to provide conditions on suitability of various possible

binding/accommodation sites. He suggests an order of preference that is determined by full vs. partial matching, the relative distance along the projection line, as well as two somewhat general factors of the principles of discourse and non-linguistic knowledge. Prior to all this, there are also general conditions on binding and accessibility. Sentence (14) obtains the preferred interpretation in (15) rather than, for example, (16), because of the preference for binding over accommodation:

(14) Every man loves his wife.

(15) Every man who has a wife loves her.

(from van der Sandt, 1992: 363-364)

(16) Every man loves Tony Blair's wife.

Van der Sandt's account of DRS construction differs somewhat from that of Kamp and Reyle in that he allows a structure of unresolved anaphoric elements (a so-called 'A-structure', a set of DRSs) for further processing when an appropriate amount of information in discourse interpretation is reached. The DRS for a sentence is merged with the main DRS, after which the anaphoric structures are processed, subject to the constraints of accessibility. Both anaphoric binding and accommodation are accounted for in this way, by postulating the so-called projection line along which looking for the antecedent proceeds (see also Kamp 2001). With the amendment proposed here, this suspension of processing appears to be an unnecessary complication. Proposing a collection of DRSs well represents the multiple choice for anaphora resolution that is superficially present, but it is theoretically misleading. It needlessly suggests the presence of a semantic or pragmatic ambiguity. The priority of binding over accommodation, the priority of local over distant binding, as well as the priority of global over local accommodation exercise most of the apparent ambiguities. Partial matches such as (12) remain, though, and I shall discuss them in

what follows, referring to Krahmer and van Deemter's (1998) treatment. On the other hand, suspending accommodation until later stages renders correct intuitions concerning the semantic status of proper names. They are not rigid designators, neither are they *necessarily* introduced in the highest representation (outermost DRS). They tend not to be embedded because they have a very limited descriptive content (cf. van der Sandt, 1992, fn 26).

An alternative DR-theoretic treatment of referents, including presuppositional, has recently been proposed by Zeevat (2000) in the form of so-called intensional anchoring. Instead of postulating a discourse referent that is linked directly to an object in the world (externally anchored, see Kamp 1990: 51-55 and in progress), he proposes adding new conditions to the DRS which define this individual for the particular universe of discourse. In this way he captures the observation that anchors must include the ways in which the objects figure in discourse. Presuppositions are resolved on the basis of considering such relevant guises under which the referent is known or perceived. The role of the presuppositions concerning the descriptive meaning of referring expressions is rendered with much more fine-tuning in this theory: "The objects that are found by presupposition resolution in the common ground are anchored by an intensional anchor" (2000: 307). In other words, the speaker's concept has more content than the referring expression itself. Further discussion, however, would fall beyond our current concern.

Van der Sandt (1992, fn 23) admits that contrastive stress may partly disambiguate the presuppositional anaphors. But in this paper, he does not provide detailed conditions for contextual acceptability. Now, Krahmer and van Deemter (1998) attempt to further explain the 'genuine ambiguity' of (12). First, in such partial matches, the non-identity reading tends to have an accented anaphor. This conforms to the rule that strong quantifiers (i.e. quantifiers that come with an appropriate domain of quantification) and accented weak quantifiers induce an existence presupposition (see also van Deemter, 1998; Asher and Lascarides, 1998). Accenting can in effect disambiguate sentences where there is no identity anaphor, as in (17):

(17) If John talks to some partygoers, the CHILDREN will laugh at him.

(from Krahmer and van Deemter, 1998: 364).¹⁰ When there is no accent on 'children', then all the partygoers are understood to be children. With the accent, 'the children' are a real subset of the set of partygoers or some other set of children. So, it can be seen that information structure has been successfully incorporated in dynamic semantics, especially in DRT (see also Dekker, 1998; Geurts, 1998). A further step is comparing the interpretation of the sentence with a focused element with the set of alternatives in Rooth's alternative semantics – performed, among others, by Blok and Eberle (1999), Büring (1999), Eckardt (1999), Jäger (1999), Partee (1999) and other contributions to Bosch and van der Sandt (1999).¹¹ It is evident in this research that quantificational domains can be restricted through binding, accommodation of presuppositions, or through focusing (see Geurts and van der Sandt, 1999). The idea is that focusing induces presuppositions (see also Jaszczolt 2001 for discussion and for a review of the core literature on focus). There is a slight weakness in this approach, though. Geurts and van der Sandt view focusing and presuppositions as separate phenomena. But focus is part of contextually given information and it is simply obvious that one of its roles is to induce presuppositions. As a result, incorporating focus in this theory seems rather lacking in formalism and, indeed, *raison d'être*. Regarding focus as a constraint for domains of quantification on a par with binding and accommodation seems to be *ad hoc*. In fact, *presupposition* gives us alternatives for the semantics of *focus* rather than the other way round. This is so because focus induces presuppositions.¹²

Now, selecting an interpretation from a set of alternatives is not the end of the story. The alternative is selected for some reason. As Kameyama (1999) states concerning stressed and unstressed pronouns, the *attentional state*, a term from Centering Theory (see e.g. Walker *et al.*, eds, 1998), dynamically updated, which is the salient set of individuals, is the pool for selection. Heim (1990: 157) makes a

similar observation concerning the scope of stressed and destressed indefinites.¹³ So, stress as a correlate of attentional state is an indicator of a binding site.

Naturally, there are unresolvable ambiguities where there are more than one suitable (fully matching) antecedents equally available, as in (18):

- (18) A man was quietly walking down the street, when he was joined by another man. *The man* said: ...

(from Krahmer and van Deemter, 1998: 362). So, the 'genuine ambiguity' has to be taken to mean that there is no *preferred* reading. This is different from (17), where the accent (signal of focus) suggests an interpretation. Generally, the topichood, or, alternatively, focus, can help with the hierarchy of preference of interpretations. For example, in (19) where 'the mother' is clearly in the topic position, 'she' selects it as its antecedent:

- (19) The mother picked up the baby. She had been ironing all afternoon.

(from de Swart, 1998: 149). Topics are good antecedents for pronouns: their referents are more salient than those of other referring expressions of the sentence (cf. Lambrecht 1994).

Further, as Krahmer and van Deemter (1998) say, the information properties of the phrases that qualify as antecedents have to be considered. For example, if 'the man' has two suitable antecedents, 'a man' and 'an uncle of mine', it is more likely to select 'a man', independently (within some range) of the distance from the anaphor (cf. Krahmer and van Deemter's example (26)).¹⁴

All in all, the preferences are as follows:

- (i) Binding to a fully matching antecedent is preferred to binding to a partially matching one and to accommodation;

(ii)Accommodation occurs 'on top' at the least embedded possible level of the representation structure, whereas binding occurs as close to the anaphor as possible (cf. 1998: 377).

However, the authors still uphold the 'genuine ambiguity' between binding and accommodation in the case of partial matches. This 'ambiguity' has subsequently been exorcised, though. The suggestion for preferences that extends also to partial matches comes from the research on the rhetorical structure of discourses which can be summarized briefly as follows.

Information properties of the NPs, the hearer's knowledge and other similar sources of disambiguation are further accounted for by Asher and Lascarides (1998) in their spelling out of accommodation as discourse update through 'rhetorical links'. It is assumed by the interlocutors that discourse is coherent, and the interlocutors are also governed by certain rules of rhetorical structure in proceeding with the interpretation of utterances. For example, if the utterance₁ in the context of which we try to interpret a new utterance₂ represents an event, and utterance₂ also represents an event, then the relation between them is Narration. If utterance₂ is a state, then the relation between them is Background. Such rhetorical relations have some indubitable theoretical values such as clarity of description of the links between eventualities (states, events and processes) and providing more detail as to what pragmatic processing consists of as compared with van der Sandt's binary distinction into binding or accommodation. However, rules such as Maximize Discourse Coherence or Prefer Global Attachment (i.e. accommodation at the most superordinate level) do not yet yield an explanatorily adequate theory of preferred interpretations.¹⁵ In other words, we are only part-way towards a theory. Asher and Lascarides (1998: 282) provide a list of factors on which presupposition projection depends, including the semantic and pragmatic properties of the relevant utterances, the type and strength of the rhetorical relations, as well as the preference for global attachment. Asher (1999) also provides rules for discourse focus in the form of the relations Contrast and

Parallel which I shall not discuss in the present context. It is, however, unlikely that the analysis of discourses requires a semantic theory such as DRT supplemented with a list of discourse rules. It is much more plausible that default interpretations, if they can be found, can be explained with reference to one over-arching principle, such as the strength of intentionality (and the strength of the referential intention where applicable¹⁶), resulting in the placement of the feasible alternatives on the scale of 'degree to which the referent is salient', in a manner resembling Gundel, Hedberg and Zacharski's (1993) proposal of the hierarchy of givenness of the referent that groups referring expressions on a scale of salience.¹⁷ (*Nota bene*, this is only one of several hierarchies of referring currently on the market; for discussion see Jaszczolt, 1999b, chapter 5; see also Walker *et al.*, eds, 1998 for Centering Theory). Furthermore, this scale is compatible with the degree of *being in focus* which, as we know from Geurts and van der Sandt (1999), contributes to the disambiguation of quantificational domains.

This is how the 'reduction to the referential intention' may proceed. If binding and accommodation allow for scales of preferred sites for antecedents, there is only one step from there to claiming that the scales reflect the degrees to which the potential antecedent is salient in the discourse. And salience of referents translates directly into the degree of referential intention that accompanies the use of the expression that introduces this discourse referent. The 'degree of being in focus' is equally translatable, albeit focus has a different status as a constraint on quantification domains from that of binding and accommodation (*pace* Geurts and van der Sandt), as I have argued above. Focus is a 'helping hand' or a repair device that has to be signalled by accent or sentence structure and trigger the search for what is, by default, the strongest referent. Focus induces a presuppositional reading, and hence indicates accommodation or binding to a partially matching antecedent rather than binding to a fully matching antecedent. Let us take example (17) again:

- (17) If John talks to some partygoers, the CHILDREN will laugh at him.

Here 'the CHILDREN' is a subset of the set of partygoers or some other set of children. Generally, backgrounded material in the nuclear scope tends to be interpreted as belonging to the quantifier's restrictor and focused information is in the nuclear scope. The referential intention is weaker than that of the unstressed version: the subset is further unspecified, neither is the other set of children. Hence, from the strength of this intention, as well as from the strength of the intentionality of the underlying mental state, we can conclude that the presuppositional reading is not the default. We can also predict that binding with a partial match is preferred to accommodation as the referential intention is stronger in the first. I shall return briefly to the semantic role of focus in Section 4.

Naturally, not all presuppositions are existential presuppositions. But neither are all sentences attempts to refer to an individual, or, intending an individual the only instantiation of intentionality. There are instances of 'intending a state or event' rather than 'intending an individual' and presupposing readings still come out as cases of weaker intentionality (albeit without the referential intention as it is not relevant) than the non-presupposing readings, as in partial matches in (20) and (21):

(20) If someone at the conference solved the problem, it was Julius who solved it.

(21) If John murdered his wife, he will be glad that she is dead.

(from van der Sandt, 1988: 158). Again, stressing 'AT THE CONFERENCE' and 'MURDERED' respectively gives us the presuppositional reading. Examples (20) and (21) are partial matches in that 'John's wife being dead' is entailed by 'John's wife being murdered' and 'solving the problem' is entailed by 'solving the problem at the conference'. The presuppositions¹⁸ of the consequent, that someone solved the problem and that John's wife is dead, can be either anaphoric on the more informative statement in the antecedent or they will have to be accommodated. Now, instead of

postulating discourse markers for propositions, as Krahmer and van Deemter (1998: 386) suggest, we can account for this anaphora in terms of stronger and weaker intentionality, i.e. intending an eventuality referred to in the antecedent of the conditional or not so intending (see also van der Sandt, 1988: 158-160) on the role of context in establishing the factuality of the *if*-clause). The presupposing reading is the result of accommodation and so it is not as strongly communicated as the non-presupposing reading. The strongest communicative intention, then, gives us the default interpretation. As I argued in Section 2, intentions with which utterances are conveyed are directly linked to the intentionality of mental states. Hence, intentionality gives us an over-arching principle for ordering the interpretations, which by Occam's razor has to be preferred to multiple rhetorical rules of discourse structure.

To recapitulate, binding is preferred over accommodation, and there are preferences both among binding sites and among accommodation sites. Problematic examples, such as partial matches, do not seem to exhibit a 'genuine ambiguity' either: there are rules that tie topic (unstressed anaphor) with binding and focus (stressed anaphor) with accommodation, for example in (12) and (17). These are the defaults. The rules can be spelled out either in terms of van der Sandt's preference order, where discourse principles and non-linguistic knowledge are left as loose generic labels but binding and accommodation are carefully worked out, or in terms of Asher and Lascarides's rhetorical relations where accommodation can be dispensed of in favour of the over-arching relations of binding presuppositions to the context through rhetorical links, the payoff being the multitude of discourse rules. Although neither approach provides an ultimate, successful theory, there is no 'genuine ambiguity' as part of the semantic analysis in either case. As a more economical alternative, I have suggested ordering the interpretations on the scale of the strength of intentionality that accompanies the utterance.

4. No Ambiguity, No Underspecification

All in all, it can be seen that the interpretation of such anaphoric/presuppositional expressions makes use of pragmatic, as well as semantic, processing. Pragmatic information, including pragmatic constraints, intrudes in the construction of the semantic representation. Underspecified semantics is not questioned either by van der Sandt or by others working on presupposition and anaphora. However, the fact that there are scales of preferred binding/accommodation sites, i.e. scales of preferred interpretations, witnesses against the need to postulate an underspecified representation as a separate, theoretically interesting level of analysis. Perhaps it also acts in favour of abandoning the semantics/pragmatics boundary altogether. Binding is a 'mostly' semantic phenomenon, but binding sites are arrived at through a variety of constraints; accommodation is a 'mostly' pragmatic phenomenon, but led by a syntactic rule on preferred sites. Focus is neither: there are various types of focus (see Gundel, 1999) and the role it plays is similar to the weak/strong distinction in the case of quantifiers, which has been successfully semanticized or even accounted for in terms of syntactic constraints.¹⁹ In general, *focus* describes "...prosodic prominences serving pragmatic and semantic functions" (Rooth, 1996: 271) and "...intonational focus in English has a weak semantics of evoking alternatives" (*ibid.*: 296). So, as Rooth further points out, instead of asking whether a particular construction (such as e.g. cleft) is a focusing construction, we should ask what is its semantics in a particular language (*ibid.*). DRT is a sufficiently flexible framework to incorporate all these types of rules for utterance interpretation.²⁰ The output of these rules is semanticized: where multiple representations are viable, they are ordered on the scale of preference. Neither ambiguity nor underspecification ensues. Syntax renders the first stage towards the semantic interpretation which is correctly called underspecified semantics but this stage in utterance interpretation need no longer be stressed as separate in the analysis of sentence meaning and utterance meaning.

Moreover, as I have mentioned in the context of Asher and Lascarides's work on rhetorical rules, these rules may ultimately be reducible to one over-arching principle of the degree of intentionality, realized in the discussed examples as (i) the

paper show that in addition we need a theory of the ordering of such possible justifications and such a theory can be founded on intentionality and intentions.

It has to be emphasized that underspecification is not denied a theoretical status here; merely the need for distinguishing the underspecified representation as a separate stage in the analysis of meaning is questioned. If the theoretical discussion focuses on the question as to *to what extent* sentences have to be disambiguated for logical reasoning to proceed (van Deemter, 1998), distinguishing the stage of underspecification may be of some interest. This is where van Deemter proposes a logic for underspecified representations (an 'ambiguous logic'): the system tries to disambiguate a representation but it stops as soon as the representation becomes sufficiently specific to act in further reasoning. But ambiguous logic only gives further evidence to the claim that contextual and other information may be utilized at various stages of utterance processing and hence underspecification is also a matter of degree rather than constituting one, unique stage as an output of grammar.

Finally, I would like to comment on Blutner and van der Sandt's view of the changing semantics/pragmatics boundary. In the Editorial Preface to the Special Issue of the Journal of Semantics on Underspecification and Interpretation they say the following:

"From a methodological perspective work on underspecification forces us to rethink the traditional way in which the semantics/pragmatics boundary has been drawn. In recent years (and under the influence of the 'dynamic turn') there has been a shift in emphasis from pragmatics to semantics. Many phenomena which had been labeled pragmatic in earlier theories turned out to be amenable to a semantic treatment in dynamic theories ('intonational' focus, 'pragmatic' presupposition, connotations of temporal succession, etc.). Recent work in underspecification seems to push us in the opposite direction. Once we allow 'flat' underspecified representations we shift much of the burden of determining the information that a sentence conveys back to pragmatics again.

The point is more than just a matter of terminology and brings us to questions of lexical representation, abduction, defeasible reasoning and the role of contextual accommodation in linguistic processing".

Blutner and van der Sandt (1998: 1).

Seen from the perspective of the Default Semantics where intentions are constituent parts of the semantic interpretation, the issue appears to be largely terminological. Intentions are both semantic and pragmatic: functionally they are semantic, epistemologically they are pragmatic. If we shift the emphasis from the boundary dispute to the availability of semantic representations, the futility of the former is evident. To summarize this in one slogan: it is not that the various proposed rules of utterance interpretation take us part way towards the speaker's intention; it is speaker's communicative and referential intentions (the strength of the first and the degrees of the latter) that get translated, in the discussed approaches to presupposition, into a methodologically more accessible discourse about rules, generalizations over the discourse interpretation process.

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Notes:

¹ *Nota bene*, Geurts (1999) proposes to use the 'dynamic semantics' label exclusively to the approaches taken by Heim, Barwise and the Groenendijk and Stokhof's 'Amsterdam school'. To use a well-known slogan that dates back to Irene Heim, only for these approaches is the meaning of an expression its 'context change potential'. Geurts points out that these two types of approaches give rise to two different theories of presupposition projection: DRT supports the binding theory, that is the presupposition-as-anaphora view discussed in what follows, whereas the 'truly dynamic' approach supports the satisfaction theory (see Geurts, 1999: xi-xiii) for more details). I do not share Geurts's conviction that the differences surpass the similarities. Both types of approaches are rightfully called 'dynamic' in that they incorporate the information from the changing context into the interpretation of sentences, which *ipso facto* becomes an interpretation of utterances as parts of discourses.

²For the purpose of this argument, we need not discuss separately the *de re/de dicto* distinction that is applicable to intensional contexts such as (2).

³ Here, e.g., the discourse referent x and discourse condition 'the man in the blue shirt (x)'.

⁴I classify definite descriptions in the same category of referring expressions as the standardly accepted proper names, demonstrative NPs and pronouns. Both proper names and definite descriptions exhibit the three readings: about the known individual, about whoever undergoes the name/fits the description, and the referential mistake.

⁵ On the lexicon-encyclopedia interface see Peeters (ed.) (2000).

⁶ This is the most thorough presentation of the idea. For references to earlier sources see van der Sandt (1992).

⁷ For references to Mates see van der Sandt (1992).

⁸Heim's account is problematic with respect to propositional attitude sentences: 'Tom believes that his brother is happy' presupposes that Tom believes that he has a brother rather than the intuitively correct 'Tom has a brother'. See Heim (1992) on the preference for *de re* readings and Geurts (1998) on *exportation* and *importation* which bear some similarity to van der Sandt's original proposal of indexing presuppositions for the speaker or for the the subject of the attitude (1988: 226-227).

⁹ In (1988: 158) van der Sandt talks about a 'systematic ambiguity with respect to contextual parameters'.

¹⁰ It has to be borne in mind that accenting does not always equal focusing and hence this terminology is somewhat confusing. See Lambrecht and Michaelis (1998) on topic accents.

¹¹ De Swart (1998: 145-152) argues convincingly for the merger of functional and formal approaches in the semantics of anaphora.

¹² A more detailed spelling out of this intuition is provided in Cohen's (1999) paper. According to Cohen, Rooth's alternatives that arise in the focusing of a phrase are induced by means of presupposition. The computation of alternatives and the projection of presupposition are governed by the same principles. Cohen gives convincing examples in which the disappearance of the presupposition also gives the wrong set of alternatives:

John always [agrees]_F with Mary.

?John always has a discussion with Mary and [agrees]_F with her.

(p. 62). The presupposition has to be present and induce the same set of alternatives as focus. Cf. also:

"Assuming that there is some mechanism which derives the presuppositions of a sentence in context, we do not need any additional device in order to derive the set of alternatives induced by the sentence in that context."

Cohen (1999: 54).

¹³ "Very roughly, destressed indefinites tend to take scope outside the domain of a subscripted situation-variable, stressed ones inside." (*ibid.*).

¹⁴ The authors also stress the importance of the information value of anaphors: an antecedent with a non-specific interpretation cannot be less informative than the anaphor if there is an identity relation between them (see the Informative Anaphors Hypothesis, p. 365).

¹⁵ See also e.g. Lascarides and Oberlander (1993) for a detailed presentation of the types and the role of rhetorical relations.

¹⁶ 'Where applicable' because of the variety of types of presuppositions: e.g. the presupposition triggered by the verb 'manage' is not referential. I discuss this constraint in what follows.

¹⁷ This claim is also compatible with von Heusinger's (2000) argument that anaphoric expressions pick out the most accessible referent.

¹⁸ In the case of binding to the partially matching proposition, the non-presuppositional reading ensues.

¹⁹ Cf.: 'There are *most/some politicians in this hotel.'

(from Krahmer and van Deemter, 1998: 384).

²⁰ Cf. e.g. Asher's SDRT, or segmented DRT, an approach that accounts for the semantics of discourses by paying particular attention to discourse structure and based on Rhetorical Structure Theory discussed above (where propositions are regarded as related by discourse relations).

²¹ This translation of discourse rules into intentions revives the spirit of Stalnaker's (1973) proposal that the presupposition relation has to be explained in terms of speaker's beliefs and intentions, although it does not uphold its dispositional flavour: presupposing is not regarded here as a linguistic disposition to behave as if one had certain beliefs (cf. Stalnaker, 1974: 202), neither are beliefs regarded as dispositions to act (cf. Stalnaker, 1984: 15).