

When less is more: implicit arguments and relevance theory

KATE SCOTT

Abstract

Traditionally, verbs are classified as transitive or intransitive. However, data show that certain seemingly transitive verbs may often occur without their object complements. This paper reviews some of the key existing accounts of this phenomenon and re-examines the data in light of work in the pragmatic framework of relevance theory. It is argued that the definition of optimal relevance allows us to account for speaker motivation behind the realisation or otherwise of object complements, and that recent work in concept narrowing may help explain the process by which this occurs.

1 Introduction

Different verbs have different argument structures. Intransitive verbs take only a subject (1), whilst transitive verbs (2) take a direct object and some, di-transitive verbs (3), may take an indirect object as well:

- (1) Andrew slept
- (2) Brendan ate the cake
- (3) Clare put the book on the table

However, in language usage this division is not so straightforward. We find examples in everyday conversation where one or more of the expected arguments are not explicitly articulated. The distribution of these non-explicit arguments is not random, and several authors have put forward theories to account for their occurrence.

In English, we find a group of verbs, which whilst seemingly transitive, often occur without an object complement:

- (4) David cooked
- (5) Fernando sang

- (6) George read
- (7) Harry ate

Early discussions (Katz and Postal 1964) of data such as (4)-(7) proposed that the understood objects in such examples represented the concept of STUFF, SOMETHING or IT. Working within a generativist framework, these theories required an object to be present at deep structure level and this motivated the idea that the overt forms of such arguments are deletable at surface level. However, more recently, Fillmore (1986) and Groefsema (1995) have offered alternative approaches to explaining the data. Their ideas have also been applied and developed by other authors (Nemeth 2000, Velasco and Munoz 2002, Iten et al 2004). I will outline each account and consider the data they cover and the criticisms they have drawn.

My main interest lies in finding the pragmatic restrictions that underlie null subject use in abbreviated registers of English¹. In pursuing this aim, I am not trying to formulate a purely pragmatic explanation for all implicit arguments, but rather looking to see if there are any patterns that may be generalised to other truncated examples. I do not dispute the claims made by Fillmore (1986), Groefsema (1995) and Iten et al (2004), that pragmatics alone cannot fully explain the occurrence of implicit arguments. However, I will use the principles of relevance theory to show how the data can be reinterpreted under one unified pragmatic framework. In sections 2-4 I shall review the work already in existence and then, in sections 6 and 7, I will offer an alternative approach using the principles of relevance theory.

2 A lexically-based account

Fillmore (1986) offers a lexically-based account of the omissible arguments phenomenon, and dismisses any possibility of a more general semantic or pragmatic explanation. He argues that neither a purely pragmatic nor a purely semantic account will be able to fully explain the data. He presents examples of what he claims are synonymous verbs (8) which behave differently in regard to allowing null complements, and holds these up as evidence against the possibility of an explanation at the semantic level:

¹ I will also consider other non-*pro*-drop languages where appropriate.

- | | | |
|------------------|---------------------|----------------------|
| (8) ² | I looked everywhere | *I sought everywhere |
| | I tried | *I attempted |
| | She promised | *She pledged. (p.99) |

In relation to a possible pragmatic account, Fillmore argues that there are some verbs, such as *locked* in (9), which will never allow an understood object, no matter how rich the context, and he thus dismisses the possibility that an explanation could lie with pragmatics:³

- (9) *I locked.

Fillmore begins to outline his alternative, lexically-based approach by drawing the distinction between what he terms indefinite null complements (INC) and definite null complements (DNC). In utterances with DNCs the identity of the missing argument is, as the term suggests, something definite, and should be retrievable from the context. For example (10):

- (10) They found out.

For (10) to be acceptable the speaker must be referring to something specific in the context as the object of ‘found out’ and she must know what this is. Fillmore confirms this with his diagnostic ‘wonder’ test, based on the premise that you cannot wonder about something that you already know. As, according to Fillmore, the object of ‘found out’ is definite and must be retrievable from the context, for the utterance to be understood, it must be known. It is, therefore odd to say (11):

- (11) ??They found out. I wonder what they found out.⁴

In utterances with INCs, on the other hand, the identity of the empty argument slot is either unknown, unimportant or both. The same test can be applied to verbs that take INCs with the opposite result.

- (12) He was eating. I wonder what he was eating.

² These are Fillmore’s examples and I do not necessarily agree with his judgements on acceptability or synonymy.

³ Nemeth (2000) suggests that Fillmore’s failure to explicitly define what he means by ‘context’ and ‘immediately retrievable’ considerably weaken his argument.

⁴ Except perhaps in a marked reading where the first clause of (11) is used interpretively, perhaps quoting an overheard utterance.

According to Fillmore's theory, different verbs mark their various arguments as omissible with either a definite or indefinite interpretation. Whilst DNCs must be retrievable from the context, Fillmore claims that with INCs the referents must be 'obligatorily disjoint in reference with anything saliently present in the pragmatic context' (p.97). He provides the following example (13).

- (13) a. What happened to my sandwich?
b. *Fido ate.

According to Fillmore's analysis the verb *ate* marks its implicit object as indefinite. The reference of the complement slot in this example must therefore be interpreted as 'obligatorily disjoint' with the sandwich mentioned in the previous utterance. A reply such as (b) is therefore not an acceptable answer to the question in (a). Whilst (b) may be acceptable in isolation as a general statement, the indefinite marking assigned to the null complement by the verb means that in a context such as (13) it is blocked from co-reference with the sandwich mentioned in (a). In contrast, consider (14), where the verb marks its complement as definite, and so it may be omitted in the reply.

- (14) a. Who came to the party?
b. Sarah came.

Fillmore's approach treats the null complements as licensed by syntactic features on the verb. Null complements are either permitted or prohibited depending on the features of that verb.

2.1 Problems with Fillmore

Fillmore claims that neither a pragmatic nor a semantic approach can account for the null object data. According to him the verb 'locked' can never occur without an object, no matter how rich the context. Although this may seem generally to be the case, Velasco and Munoz (2002) take issue with Fillmore's analysis. They argue that if a particular door is clearly the "focus of attention" (p17) of the participants in the discourse then utterances such as (15) and (16) are acceptable.

- (15) Did you lock?
(16) Have you locked?

However, Velasco and Munoz do lend support to a separate aspect of Fillmore's work. They present semantically related pairs of verbs similar to those put forward by Fillmore (8), and like him they claim that they behave differently in relation to complement omission. Their examples, taken from corpus material, are reproduced here as (17) and (18).

- (17) a. I'll be back, I promise
 b. That'll loosen a few apron strings, I guarantee it
(18) a. She found out
 b. It's taken me 10 years to discover it (p17)

They claim that 'guarantee' and 'discover' do not allow the object's 'presentation as Given information' (p517) and therefore they cannot take understood objects. They acknowledge the need for future work on the semantics of these verbs in order to explain this. I disagree with their intuitions in these examples, finding corresponding versions of the utterances where the objects are left implicit to also be acceptable:

- (19) I guarantee
(20) It's taken me 10 years to discover

Fillmore's work also rules out an explanation at semantic level, but he does concede that there are some semantic patterns amongst the occurrences of the DNC and to a lesser extent the INC. He notes that some 'particular meanings lend themselves more' (p104) to allowing null complements than others, concluding that 'there may be a great many minor regularities in the semantics' (p105). For example, he claims that DNCs do not tend to occur with 'change-of-state verbs' such as BREAK, MOVE, LIFT, DESTROY, and suggests that this is related to the object taking on the semantic role of PATIENT. Despite his objections to a pragmatic-based account, Fillmore seems to be dangerously close to straying into pragmatic territory himself when he outlines another 'generalization.' He notes that DNCs are often found with 'aspectual complementation,' when the 'event or action can go unmentioned in a setting in which it is contextually given' (p105). This reference to context seems to clearly implicate the need for some kind of pragmatic role in interpreting such sentences. However, Fillmore leaves this observation to one side and concludes that ultimately we should look for an explanation by positing that different senses of verbs are represented by different lexical entries.

In her 1995 article, Groefsema takes issue with Fillmore's proposals and with his dismissal of pragmatic and semantic explanations. As we have seen, Fillmore's

approach relies on verbs marking their arguments for omission with either definite or indefinite reference. Groefsema argues that this approach does not always make the correct predictions and she provides counterexamples as evidence of this. According to Fillmore, and as we saw in (13) above, *to eat* marks its omissible complement as indefinite, and so the entity to which it refers must be, ‘obligatorily disjoint in reference with anything saliently present in the context’ (p142). With this in mind, Groefsema considers (21).

(21) John brought the sandwiches and Ann ate.

According to Fillmore’s analysis, the understood argument of ‘ate’ must be disjoint with the sandwiches brought by John as they are highly salient in the context by virtue of being mentioned explicitly in the utterance. Therefore according to Fillmore, (21) communicates that Ann ate something other than these sandwiches. This interpretation does not satisfy Groefsema. Rather, on Groefsema’s interpretation, Ann ate at least some of the sandwiches, but it is left unspecified as to how many she ate. I would agree with Groefsema in finding Fillmore’s analysis problematic. However, I suggest that relevance theory⁵ may be able to provide us with the means to fine tune Groefsema’s intuitions even further. If, following relevance theory we assume that the speaker is being optimally relevant, then it falls out that Ann ate at least enough of the sandwiches for it to be relevant. I will expand on this further in sections 6 and 7.

Along with this objection, Groefsema also produces counterexamples to the prediction of Fillmore’s treatment of DNCs. Fillmore claims that the verb *win* lexically marks its direct object complement as omissible if definite, and as such the omission can only take place if there is a contextually salient competition to act as the referent. For example, to be able to understand (22) we must know what the competition is that Graham entered and came third in.

(22) Graham won the bronze medal

According to Fillmore the definite or indefinite value of a complement is assigned by the verb and it should therefore be constant for any given verb across contexts. However, Groefsema points out that during a discussion of older sports people, (23) may be perfectly acceptable, despite the lack of a particular competition being contextually given.

(23) Martina Navratilova has won again.

⁵ See section 5 for an overview of relevance theory.

The understood argument of *won* is interpreted as ‘an instance of a competitive tennis event’ (p142). In effect the null complement in (23) is an indefinite competition. Groefsema therefore provides us with counter examples to both strands of Fillmore’s theory.

Whilst these observations by Groefsema highlight problems with Fillmore’s approach and his total dismissal of pragmatic factors, his work introduces interesting data and opens up various channels for further work. His distinction between the definite and indefinite cases, whilst I feel it may be too simplistic as it stands, does introduce the possibility that different motivations may underlie different instances of omission.

3 A Semantico-Pragmatic Approach

As outlined above, Groefsema finds several problems with Fillmore’s account of null complements and in her 1995 article she presents her own account. She outlines what she calls a ‘semantic/pragmatic explanation of when arguments can be left implicit’ (p139). She draws upon elements of Jackendoff’s (1983) theory of conceptual semantics, along with Sperber and Wilson’s Relevance Theory (1986) to propose an alternative treatment to that of Fillmore.

In *Semantics and Cognition* (1983) Jackendoff treats verb meanings as structured conceptual representations. As part of their conceptual representation, some verbs put restrictions on the type of arguments they select as complements. For Jackendoff, these restrictions form part of the verb’s meaning and so the choice of a verb gives the hearer access to information concerning the arguments involved, whether or not the arguments are explicitly expressed in the surface form of the utterance. Jackendoff (1983: 52.) comments:

Selectional restrictions are just explicit information that the verb supplies about its arguments. If an argument is unexpressed, the information is supplied entirely by the verb.

This treatment of verbs is crucial to Groefsema’s proposal, and combines with relevance theory to result in her proposed treatment of implicit arguments. Groefsema provides us with a summary of some of the main points of relevance theory, paying special attention to the role played by context in deriving cognitive effects. She considers what it is that makes an assumption accessible in a given context and formulates a working definition of what she terms ‘immediately

accessible'. This definition (Groefsema 1995: 150) forms the basis of her implicit argument theory:

An assumption (or an assumption schema) is immediately accessible if it is accessible from more than one conceptual address currently accessed (i.e. conceptual addresses already present in the context, and in the logical form of the utterance being processed) (p.150).

According to Groefsema an argument may remain implicit if its interpretation is constrained in one of two ways. The first way relies heavily on Jackendoff's approach to verb meanings. Adopting this approach to verb meanings allows us to construct a more 'fine grained' (Iten et al 2004 p.8) semantics for each verb, which in turn will help explain the differences in omission potential between apparently semantically synonymous verbs. When a verb is uttered the hearer has access to its conceptual representation that, as we have seen above, may include selection restrictions. For example, according to this approach, *drink* restricts its direct object to some form of liquid. According to Groefsema, if this restriction on its own is sufficient to yield an interpretation that satisfies the hearer's expectation of relevance, then the argument may be left unexpressed. Groefsema works through an example of this using (24).

(24) We have already eaten

Groefsema claims that the verb 'to eat' puts a restriction on its internal arguments such that the object must be some kind of food. This selection restriction makes accessible any associated assumptions the hearer may hold about food. If these assumptions can combine with the context to provide an interpretation that satisfies the hearer's expectation of relevance then the omission is licit. For example, both the concept EAT and the restriction-selected concept FOOD make accessible assumptions concerning the type of occasions when people eat, and the fact that food is usually part of a meal. The meaning may therefore be enriched, via these immediately accessible assumptions, to allow the hearer to derive contextual effects such as the speaker having recently eaten a meal and therefore probably not wanting to eat anything else at this moment.

Groefsema's second scenario for allowing an argument to remain implicit is if, 'the rest of the utterance makes immediately accessible an assumption which gives us an interpretation in accordance with the principle of relevance' (p153). To exemplify this, Groefsema takes the verb *give*, and compares the acceptability of (25) and (26):

- (25) Paul gave to Amnesty International
 (26) ?Paul gave to Ann

Unlike *eat* in the examples above; *give* does not put any restriction on the thing that is given and so the interpretation of the argument is not constrained in this way. However, according to Groefsema, the rest of the utterance in (25) makes relevant assumptions accessible. She claims that the assumption that people sometimes give money to charity is accessible from both the concepts GIVE and AMNESTY INTERNATIONAL. Following Groefsema's definition, the fact that this assumption is accessible from more than one conceptual address means that the assumption takes on the status of being immediately accessible. If this immediately accessible assumption leads to an interpretation that satisfies the communicative principle of relevance then the argument may remain understood only. By contrast, in (26) there is no assumption that becomes accessible from the concepts of Paul and Ann alone, and as there is no further information in the utterance, and no selection restriction is in place, the utterance is unacceptable.

Groefsema argues that if the interpretation of the missing arguments is not constrained in either of the ways described above, then the possible referent will not be uniquely identifiable via the immediately accessible assumptions, and the speaker must linguistically realise the arguments in order to communicate her message.

In sum, Groefsema proposes that the use of implicit arguments is licensed when one of the following conditions (Nemeth 2000, p1681) is satisfied:

- a. If a selection restriction of a verb makes it possible to recover the implicit argument in accordance with the principle of relevance.
- b. If the rest of the utterance in which the argument occurs makes immediately accessible an interpretation which is consistent with the principle of relevance.

3.1 Objections to Groefsema.

Iten et al (2004) make several criticisms of Groefsema's approach. In regard to her conditions for omission, they question why non-linguistic elements can't contribute to assumptions. They argue that if, as Groefsema suggests, the aim is really to achieve optimal relevance, then other aspects from the general context should be able to be brought into play during interpretation.⁶ If non-linguistic factors are not

⁶See section on Nemeth below for more on this issue, with reference to Hungarian data.

banned, there should be contexts in which (27) is acceptable, or at least as acceptable as (28)

(27) ?Paul gave to Ann.

(28) Paul gave to Amnesty International.

They quote Groefsema's reply to this objection, which they term 'Groefsema's Dictum' (p11). She argues that relying on non-linguistic context will always lead to more processing effort and will therefore detract from optimal relevance. Therefore, it should always be more relevant to add to the linguistic material, rather than rely on non-linguistic context. However, Iten et al counter this argument by quoting empirical evidence from sub-sentential speech that suggests that what they call Groefsema's dictum is incorrect. They give attested examples where it is more relevant to use a shorter utterance and rely on contextual factors to fill in the gaps, rather than to produce more linguistic material. They describe a situation where an adult utters the order in (29) to a child picking up a full glass of milk.

(29) Both hands

This, they claim, suggests that this short utterance is more relevant than the longer alternatives of full sentences. With this evidence suggesting that Groefsema's defence of her own approach is flawed, Iten et al's objection to a ban on extra-linguistic factors contributing to the interpretation becomes valid again. Further to this I would question the claim that, given the right context, (27) could not be as acceptable as (28). I would suggest that *Amnesty International* has strong assumptions associated with it that mean that it is rigidly associated with charity, money giving and donations, and so (28) can be satisfactorily interpreted even in an apparently neutral context. However, *Ann* in (27) is not so fixed in meaning and associations, but given a rich enough context where GIVE and ANN combine to make assumptions immediately acceptable, I do not see why this should be a problem. Consider the following scenario. Paul and Ann work in the same company. All the female employees are taking part in a sponsored walk. Their colleagues are discussing who has sponsored whom. John is reeling off a list of generous donators and Bill chips in with (27).

Along with these specific objections, Iten et al also take issue with the narrow coverage of Groefsema's approach. As Groefsema herself admits, her explanation does not hold cross-linguistically and as Iten et al add, neither can it be extended to non-sentential utterances. I would also like to suggest some further problems with Groefsema's account. Selection restrictions play a vital role in her semantic-pragmatic approach, and Groefsema provides examples using 'eat' to demonstrate

the effect that she claims they have. ‘To eat’, according to Groefsema, restricts its object to being a ‘kind of food.’ This may seem to be stating the obvious, until we come across and are able to understand and accept sentences such as (30) to (32).

- (30) The dog ate my homework.
- (31) The goat ate my gloves.
- (32) Peter ate his words

Of course, it could be argued that as soon as something is eaten it becomes ‘food’ in some sense, but this in turn renders the idea of a selection restriction meaningless. If anything can satisfy the selection restrictions by virtue of being selected then in effect nothing is constrained. This strand of Groefsema’s argument appears to be missing a point made by Fillmore and others when considering the motivation behind such null complements. The selection restriction is not required in indefinite cases, as the object itself is not important in these cases. The act of eating itself is the focus of the utterance. It is not what is eaten, be it conventional food or something else that may be consumed, that is the point at issue in the indefinite null complement cases. I will argue below that it is indeed this kind of motivation that drives implicit argument use rather than the sort of conditions proposed by Groefsema.

3.2 A prediction of Groefsema’s account

Groefsema claims to be working within relevance theory and as such she makes a clear prediction about when a speaker should leave an argument implicit. According to Groefsema, a speaker should wherever possible leave arguments implicit so as to save her hearer the extra effort of processing additional linguistic material. In this way the output of the relevance theory effects-for-effort equation should be optimized. Groefsema points out that such a proposal predicts that with all other things being equal, ‘an utterance of *I could not eat any food* would, in principle, give rise to the same interpretation as *I could not eat* but would increase processing effort,’ (pg156).

This prediction relies on two main assumptions. Firstly that any such pairs of sentences will produce the same cognitive effects whether the complement is explicitly expressed or remains implicit. Secondly, that processing linguistic material always takes more effort than making inferences. The second assumption is an empirical matter. The example given above in (29) would suggest that this is not necessarily the case and I would at this stage hypothesise that the level of processing effort is affected by many different factors including familiarity with vocabulary, structural complexity, recency of use, frequency of use, accessibility of

the inferred referents and saliency in the linguistic and physical context. These factors and their possible influence on processing demands are open to empirical investigation. However, work on child language (Bloom (1990), Valian (1991)) suggests that they do in fact have an impact. In section 6.1 below I will give evidence that leaving an argument implicit can lead to the hearer deriving very different cognitive effects. This evidence, along with the questionable validity of the first assumption brings Groefsema's prediction into question.

3.3 An application and extension of Groefsema's work

Nemeth (2000) provides an overview of both Fillmore's and Groefsema's work on null complements, and applies their findings to Hungarian. Hungarian allows arguments to be left implicit to a much greater degree than English, and Nemeth questions whether the existing accounts can be applied to her Hungarian data to explain the distribution of implicit arguments in languages which omit more freely.

Nemeth finds much to agree with in Groefsema's work, and she applies Groefsema's two conditions for implicit argument use to her Hungarian data. She finds that, as Groefsema predicts, the selection restriction of the verb, and the rest of the utterance, along with the communicative principle of relevance, pragmatically licence the use of implicit arguments. However, she also finds examples where neither condition is fulfilled, and yet implicit arguments are in evidence. Rather than take this as evidence against Groefsema's relevance-based account, Nemeth instead works from the assumption that languages do not vary as to 'whether they allow verbs to occur with implicit arguments' (p.1682), but that instead they vary as to 'in what manner and in what context' (p.1682) they allow them. She proposes that in Hungarian a further possible condition must be added to Groefsema's original list:

If extending the immediate context of the argument leads to an interpretation which is consistent with the principle of relevance (p.1681).

Nemeth provides examples where either the physical environment or the hearer's encyclopaedic knowledge must be drawn upon to extend the context until a relevant interpretation is reached. Thus, according to Nemeth the interpretation of implicit arguments, like the rest of utterance interpretation, involves both decoding and inferential processes. The hearer must decode certain information such as that conveyed by the use of *pro*-drop (in appropriate languages) or by the choice of definite or indefinite arguments, and then undertake an inferential enrichment process until relevance is satisfied. This begins to strip implicit arguments of any special status and instead makes them subject to the same processes of

comprehension as any other element of an utterance. Thus it seems that with Nemeth's work we are moving closer to an account of implicit arguments that is fully integrated into a wider theory of utterance interpretation.

4 Velasco and Munoz

Velasco and Munoz (2002) take elements from the various accounts outlined above and approach the phenomena from within the framework of functional grammar. Although my work is not based within this theory, their work highlights several interesting issues connected with properties of the phenomenon, and they discuss some interesting examples. They begin by outlining a range of factors that have been identified as influencing the distribution of null arguments, and they divide them into two broad areas of influence; the lexicon and the discourse. For Velasco and Munoz these two categories of factors lead to two different types of omission; lexically driven and discourse driven. I will outline both these and the identified contributing factors and consider some of the claims made.

4.1 Lexically driven omission

According to Velasco and Munoz, lexically driven omission can originate from either the nature of the verb or the nature of the object. They claim, following Rice (1988), that some verbs can only take a very limited number of objects and that this specificity leads to those objects being more likely to be left understood. It is not completely clear exactly which aspect of the verb semantics Velasco and Munoz are referring to here and they give no examples. If they are referring to the kind of selection restrictions used by Groefsema in her approach, then they face the same problems and need to be able to address the same counter arguments given in section 3.1. Velasco and Munoz account for these observed tendencies as being lexically driven due to the verb 'requiring' a +/- specific feature on the object. However, I would argue that any such tendencies are better dealt with via contextual means. It is possible that certain verbs appear to select specific objects because they frequently occur in contexts where that particular type of object is highly accessible or salient. Velasco and Munoz later go on to consider factors such as situational frames under their discussion of discourse driven omission, but it is possible that such frames also have an influence here. For example, eating often occurs in social situations where people are eating what is usually accepted as food. Therefore, when the verb 'eat' occurs it is likely that such associations will be activated. This does not mean that the verb has specifically selected 'kind of

food' as an obligatory requirement for the object, and given other contexts, other uses are possible, as in the examples (30)-(32) above.

In terms of the influence of the verbal object, Velasco and Munoz distinguish between utterances that denote activities versus those that denote accomplishments. Vendler (1957) uses these terms when he classifies verbs into four groups depending on their temporal sense: activity, accomplishment, achievement and state verbs. First he draws the distinction between verbs that 'possess continuous tenses' (p144) and those that do not. To illustrate this he considers what an appropriate answer to the question, 'what are you doing?' might be. A continuous tense must be used to answer such a question. Therefore, whilst it is acceptable to reply, 'I am running,' or 'I am running a mile', a reply such as 'I am loving' or 'I am knowing' is not acceptable. The set of verbs that allow continuous tense is then divided again into activity verbs and accomplishment verbs. Vendler distinguishes these two groups by considering whether the verb describes something that must necessarily reach a 'terminal point'. For example, if someone stops before they have run a mile, they cannot say they were 'running a mile'. However, no matter how long they ran for, they could say they were running. Those verbs that must necessarily reach some kind of end point Vendler terms accomplishment verbs, and those which don't he terms activity verbs. Velasco and Munoz seem to be working to this kind of distinction when they consider the example in (33).

(33) John eats

(33') John eats an apple.

They claim that in (33), the focus of the utterance is on the activity of eating, whereas in (33') the speaker is referring to the accomplishment of eating an apple. Thus, they conclude that this type of omission 'seems an efficient strategy to shift from one type of SoA (state of affairs) to another in a very economical and efficient way,' (p9).

This is not the only role that the verb plays according to Velasco and Munoz. They also draw on work by Dixon (1991) to suggest that differences in the general semantics of the verb type may also play a part in determining omission. For example, according to Dixon, 'verbs of "motion", "rest" or "giving" do not usually allow omission' (Velasco and Munoz p7). These generalisations are subject to notable exceptions, and it seems that this approach reduces to something in essence very similar to that of Fillmore and his lexical marking. Some verbs mark their complements as omissible and some do not.

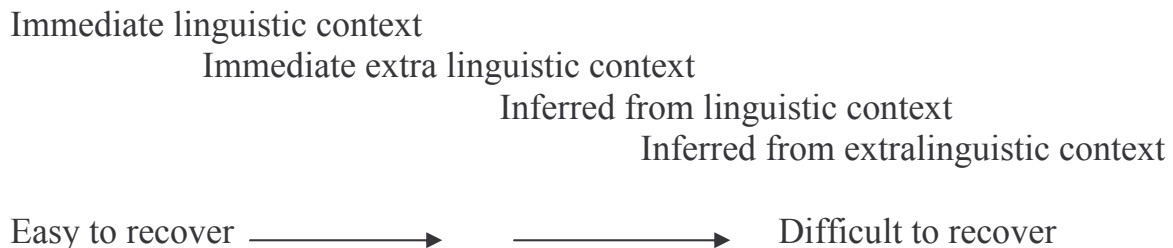
Velasco and Munoz therefore outline several 'lexical' factors that they see as influencing the omission of a complement. However, I find their arguments for this

distribution being lexically based to be problematic and I will suggest that much can be accounted for in a contextually driven pragmatic approach.

4.2 Discourse driven omission

Velasco and Munoz consider several discourse-based factors that they see as contributing to occurrences of object omission. Discourse or context-based omissions are, they claim, roughly equivalent to Fillmore's definite null complements. The reference of the missing element is recoverable from the context of the utterance and several factors can contribute to making this either harder or easier for the hearer to achieve. The authors cite Allerton (1975) and his scale of 'givenness' as describing one of these factors. They argue that the more 'given' an argument is, the more likely it is to be omitted. This is compatible with a more general theory of argument representation as it allows for a continuum of referring forms ranging from fully lexicalized indefinites to the nulls under consideration here. Each region of the continuum correlates with a level of givenness. This approach is intuitively attractive and parallels the findings of previous work on child omissions (Allen (2000), Bloom (1990), Valian (1991)) and theories of Accessibility (Gundel, Hedberg and Zacharski (1993) and Ariel (1988)). Along with the 'givenness' of the referenced argument, Velasco and Munoz also consider the influence that 'situational frames or context' may have on argument realisation. Their definition of context is quite broad, encompassing the preceding discourse and physical environment as well as encyclopaedic and world knowledge. They present what they call their scale of 'understood object recoverability' based on the way in which context is used to resolve reference. The scale is reproduced here as figure 1.

Figure 1
Referent availability



As this scale demonstrates, the recoverability of a referent, and therefore the likelihood that it will be left implicit, is influenced not only by its presence in linguistic or extra linguistic context, but also by whether it is immediately available

or must be inferred. This feeds nicely into a relevance theory account where the processing effort involved in accessing via inference as opposed to via immediate context plays a vital role in the process of utterance interpretation. However, I would question whether the linguistic context would always necessarily lead to easier recovery than the extra linguistic context. I would suggest that rather than linguistic context being more accessible as a prescriptive rule, it is preferable to work from the premise that recoverability is related to relevance. It is possible to imagine a situation where linguistic context takes a back seat to some extra linguistic element in the context during the interpretation of a particular utterance. For example, a professor is lecturing to a room full of students when a fire alarm goes off. He finishes his sentence and then utters (34)

(34) We will just ignore that

When interpreting this utterance, it is clear that a hearer would normally resolve the reference of ‘that’ as the highly relevant fact that the fire alarm has rung, as opposed to the content of the previous sentence uttered by the professor. If we follow Velasco and Munoz’s scale, along with a strategy of least effort, we would expect ‘that’ to refer to the professor’s previous utterance as it forms part of the immediate linguistic context. I am not disputing that it is often the case that the immediate linguistic context will be highly accessible, but I hope that this example demonstrates that it is not necessarily always the most accessible. It seems that whilst scales such as this may be descriptively accurate to a certain degree, laying them down as hard and fast rules leads to over-generalisation. Rather, each interpretation must be considered individually within its own context. This is exactly what relevance theory allows us to do.

4.3 Testing Hypotheses

Having outlined these influencing factors, Velasco and Munoz take both the lexical and discourse-based features and work through a number of hypotheses concerning the distribution of argument omission. Many of their conclusions parallel the work outlined in sections 2-5 above. They too conclude that the referents of INCs must be ‘obligatorily disjoint’ with entities in the immediate context, as they conclude that ‘indefinite objects do not present available referents in the surrounding linguistic or extra linguistic context’ (p9). They find that the more “predictable an object is from the meaning of the verb, the more likely it will be to be left out” (p11). Again we can find this result echoing both Fillmore’s work on verb types and Groefsema’s selection restrictions. In terms of discourse related omissions, Velasco and Munoz conclude that the ‘situational context’ (p16) can make possible

otherwise unlikely candidates for omission, and they acknowledge that this parallels Nemeth's work on extension of the context.

In sum, the work of Velasco and Munoz serves to confirm many of the findings outlined in the above sections. They acknowledge the role of lexical, grammatical factors and discourse, context-driven factors and propose that this results in two different types of object omission:

The first type, clearly lexical in nature, mainly serves to turn an accomplishment SoA [state of affairs] into an activity. The second serves to put the message across in a more economical and efficient way by omitting material available in context. (p22).

Thus, their work echoes that of several of the previously discussed authors in calling for a combined approach, and they acknowledge the need to draw on grammatical, semantic and pragmatic factors to produce a comprehensive account.

5 Relevance Theory

Although arguing for different approaches, and working within different frameworks, the above accounts share many commonalities. Fillmore's lexical specification, Greofsema's selection restrictions and Velasco and Munoz's +/-specific feature all focus on the effect that the lexical entry of the verb has on the realisation of the complement, all of the accounts distinguish in some way between those references which must be resolved (definite) and those which may remain uninterpreted, and all of the accounts, including Fillmore, acknowledge at least some role for context and pragmatics. My work is primarily concerned with the pragmatic factors involved and I will suggest that many of the pragmatic aspects of the above theories and the data they cover are best reinterpreted within the relevance theory framework. Several of the authors attempt to account for the data with the aid of specified 'conditions' 'scales' or other means of classification. I hope that I have shown that these do not provide full and comprehensive coverage of the data. I believe that the problem lies with the prescriptive and stipulatory nature of such devices. By utilising relevance theory as a comprehensive pragmatic framework and theory of utterance interpretation, we can account both for these generalisations and any exceptions by considering how each utterance combines with its unique context to yield adequate cognitive effects as laid out in the definitions of the theory. In this section I will outline the basic principles of relevance theory, before arguing that the definition of optimal relevance offers us great insight into the pragmatic motivation behind implicit argument use.

5.1 Relevance Theory and Optimal Relevance

Relevance theory (Sperber and Wilson 1986/1995) offers a cognitive approach to utterance interpretation based on two main principles. The first, or cognitive, principle deals with cognition in general and makes the claim that human cognition is geared towards the maximisation of relevance. The second, or communicative, principle deals specifically with communication:

Communicative principle of relevance

Every act of ostensive communication communicates a presumption of its own optimal relevance (p260).

Utterances, as acts of ostensive communication, fall under this principle. Sperber and Wilson define relevance as dependent on two separate factors: cognitive effects and processing effort. At any one time an individual will hold a set of assumptions about the world. Cognitive effects result when new information interacts with these assumptions. The interaction may take place in one of three ways: (1) It may strengthen the existing assumption, (2) contradict and eliminate the existing assumption, or (3) combine with the existing assumption resulting in contextual assumptions. To illustrate, consider the following example. Susan is a tennis fan. The week before the Wimbledon tournament begins, she decides the following (35):

(35) If the sun is shining on Monday I will go to the tournament.

Susan waits in anticipation and wakes up early on Monday morning and opens her curtains. As she looks out of her window she sees that:

(36) The sun is shining.

The new information (36) combines with Susan's existing assumption in (35) and she reaches the conclusion, or contextual implication, (37).

(37) I will go to the tournament.

As the tournament progresses, Susan is lucky enough to be given a ticket to the men's final. She is a fan of a tennis player called Bob Smith. She believes he is on form this year and she therefore holds the assumption (38)

(38) I will see Bob Smith play tennis in the final.

A few days into the tournament Susan opens the newspaper and sees the headline
(39)

(39) Bob Smith easily wins first two matches.

The new information in (39) acts to strengthen Susan's assumption in (38). However, two days later she opens her newspaper and sees the headline (40)

(40) Bob Smith knocked out in straight sets

In this case the new information contradicts Susan's assumption in (38) and, as a result, eliminates it. Thus we can see how new information can interact with existing assumptions to result in the three types of cognitive effects.

The other notion on which Sperber and Wilson's definition of relevance relies is that of processing effort. When a hearer processes new information in a context of existing assumptions and therefore derives the type of cognitive effects outlined above, effort is expended. Other things being equal, the less effort that is required when deriving cognitive effects the greater the relevance. The amount of effort expended can depend on various different factors. For example, it takes effort to process linguistic material. When Peter asks Mary what time the train leaves, it is more relevant for her to answer with (41) than with (42)

(41) At 5 o'clock

(42) At 5 o'clock, and Paris is the capital of France.

In processing the longer utterance (42), Peter will use more effort and so, all other things being equal, the overall relevance of Mary's utterance will be reduced. Aspects of the utterance itself will also affect the level of processing. These may include the logical complexity of the utterance or the frequency or recency of mention of entities referred to or assumptions accessed. All other things being equal, the less effort a hearer is required to expend when processing an utterance, the more relevant that utterance will be. So, cognitive effects and processing effort combine to produce a level of relevance for each utterance that is comparable with the effects and efforts of any other utterance.

However, according to Sperber and Wilson the addressee is not entitled to expect that the utterance chosen is always going to be maximally relevant, i.e. it is not always going to be the one that provides the maximum effects for the minimum effort, as compared with other utterances. Rather the speaker has the right to

presume that any utterance addressed to her will be optimally relevant. Sperber and Wilson give the following definition of optimal relevance:

Presumption of optimal relevance

- (a) The ostensive stimulus is relevant enough for it to be worth the addressee's effort to process it.
- (b) The ostensive stimulus is the most relevant one compatible with the communicator's abilities and preferences

(Sperber and Wilson 1986/1995, p270)

Every utterance addressed to someone communicates a presumption of optimal relevance as part of the speaker's meaning. The definition of what it means to be optimally relevant will play a vital role in my account of the motivation behind implicit argument utterances.

5.2 Principles rather than conditions

We have seen above how Groefsema's theory introduces two conditions for null complements, and how Nemeth then adds a further condition to these when she reviews them in relation to her Hungarian data. Whilst such conditions are able to account for a large number of cases, such a list is conceptually prescriptive and psychologically unintuitive. Use of such a device to account for a range of phenomena suggests that when formulating an utterance the speaker in some way checks down the list of conditions before 'deciding' whether the complement is suitable for omission or not. This does not fit with the online nature of utterance formation and interpretation. Groefsema's 'more than one' definition of immediately accessible is also conceptually problematic as it relies on the premise that online production and comprehensive mechanisms are able to count. This approach is also deficient in that although the conditions specify under which circumstances a complement may be omitted, they fail to offer any explanation as to why a speaker will then sometimes go on to take the opportunity to omit and sometimes not. I will argue that relevance theory offers a way to overcome these problems and that the data to which these conditions apply is better accounted for by the general principles of relevance theory. I will argue that all three of Groefsema and Nemeth's conditions can be absorbed into the one cognitively based theory. Firstly, if, as Jackendoff suggests, the selection restriction is 'part of the verb's meaning,' (p53) then it is also necessarily a part of the utterance. Thus, the distinction between the two clauses is irrelevant and both can be combined under the clause that refers to the rest of the utterance. Furthermore, in relevance theory each utterance is processed in relation to a context, and this context is constructed

as part of the comprehension process itself. Context in relevance theory terms is a ‘subset of the hearer’s assumptions about the world’ (p15.) and as such includes assumptions derived from observations of the physical environment, the hearer’s encyclopaedic knowledge, memories and beliefs as well as any preceding linguistic material. Such a definition of context easily encompasses ‘the rest of the utterance in which the argument occurs’ from Groefsema’s second condition and the extension of the immediate context proposed by Nemeth. Such incorporation into one principle of relevance is conceptually preferable. The list of conditions provided by Groefsema and Nemeth equates to introducing extra machinery to deal with this individual phenomenon. Incorporating the essence of their findings more fully into a relevance theory approach utilises a framework that is independently motivated. In this way the interpretation of implicit arguments becomes just one application of a general principle rather than a separate rule of communication to be acquired or learnt.

So we see that Groefsema and Nemeth’s stated conditions for allowing omission can be replaced with one relevance theoretic sense of context interacting with the communicative principle of relevance. However, we still need to specify why omission occurs in some cases and not others. Again, I will return to the basics of relevance theory to offer an explanation for this. I will revisit the definition of optimal relevance and the notions of cognitive effects and processing effort in order to do this.

6 Applying Optimal Relevance

As we have seen, according to relevance theory, each utterance carries with it a presumption of its own optimal relevance. Thus, when an utterance with an implicit complement is uttered we must assume that the omission in some way contributes to optimal relevance. I will therefore consider the definition of optimal relevance in relation to this and suggest that such an approach offers us an explanation that goes some way towards accounting for the motivation behind complement omission. I will conclude that complements are omitted, where syntactically permissible, in an attempt to optimise relevance, and that the two clauses of the definition of optimal relevance reveal differing motivations lying behind a speaker’s decision to omit or realise an optional argument.

Firstly reconsider the definition of optimal relevance:

Presumption of optimal relevance

- (a) The ostensive stimulus is relevant enough for it to be worth the addressee’s effort to process it.

- (b) The ostensive stimulus is the most relevant one compatible with the communicator's abilities and preferences
(Sperber and Wilson 1986/1995, p270)

There are various ways in which the omission of a complement can interact with this definition. Clause (a) deals with the effort for effects payoff. It suggests that any effort expended by the hearer will be rewarded with cognitive effects. Staying consistent with this, it is logically possible that the choice to omit a complement could either reduce the processing effort or increase the cognitive effects. Both of these outcomes will result in the utterance being more relevant. The hearer will presume that the speaker is aiming to maximise relevance, as far as is compatible with clause (b), and so, if one of these possibilities is available to the speaker then they should take it. However, the speaker is not presumed to be necessarily being maximally relevant and we must allow for the possibility that the speaker's 'abilities and preferences' lie behind the motivation to omit.

The motivation behind the omission or articulation of a complement will change with the situation in which the utterance occurs. I will consider the various effects that the drive to achieve optimal relevance may have by considering the same utterance (43) in various contexts and show that it is possible that different motivations underlie the speaker's choice in each case.

(43) John dances

6.1 Optimal relevance in practice

6.1.1 *Extra or different effects.*

A speaker may choose to leave an object implicit so that the hearer derives different or extra effects from the utterance than would have been derivable from an explicit object. Consider an utterance (43) with an explicit object and its counterpart utterance (43') without an explicit object.

(43') John dances the tango

When Mary utters (43') it is usually understood that she asserts that John has the capacity to dance the tango, whereas when she utters (43) she makes the more general assertion that John has the capacity to dance (some or any sort of dance). It is possible that this distinction could lead to very different cognitive effects in a hearer. Peter is getting married and wants somebody who he can rely on to get the disco dancing going at the reception. He has heard a rumour that John has been taking dancing lessons, and therefore holds the assumption that John might be a

good person to ask. Whilst discussing the situation with his fiancée Mary, she utters (43). In such a context, (43) will lead to the cognitive effect of strengthening Peter's assumption that John would be a good person to ask. However, if Mary utters (43') the resultant effects may be very different. In this case the information from Mary's utterance may well combine with his assumption that ballroom dancing is not appropriate at a disco, resulting in the contextual implication that John is not a good person to ask in this situation.

The different effects that may result from the decision to omit an object could at least in part account for the accomplishment / activity distinction observed by Velasco and Munoz. It certainly seems that the absence or presence of a complement often coincides with the focus of the utterance being on activity or accomplishment respectively. I want to first suggest that the kind of prescriptive rule that Velasco and Munoz propose over-generates and I instead propose that we can account for the same generalisations, whilst gaining better descriptive coverage, by returning to the definition of optimal relevance. Consider the following.

(44) Do you read?

(44') Do you read the newspapers?

(44') has an explicit argument complement. However, instead of changing the focus from activity to accomplishment the explicit argument changes or specifies the type of activity in question. (44') is a question asking about general habitual reading, whilst in (44) the question focuses on habitual newspaper reading. In a similar fashion, returning to the example in (33), I would suggest that the accomplishment reading that we get from (33') derives not purely from the presence of an object, but rather from the context in which it is likely to be interpreted. This context is likely to include a hearer's encyclopaedic knowledge of people's apple-eating habits. Eating a specific apple is something that by necessity must have an end-point, rather than being an ongoing or habitual action. When processing such an utterance, the most relevant interpretation is therefore likely to be the accomplishment reading. The speaker's use of a singular referring expression encourages this reading as eating an apple is necessarily a finite activity.⁷ If the speaker wanted to focus on the activity instead, she may have

⁷ With perhaps the exception of a fairytale context where, for example, a giant apple has been bewitched so that it constantly regenerates and John has been condemned to eat it for all eternity. In such a scenario we would expect that the speaker would have to firmly believe that the context was clearly known to the hearer.

uttered (45) to save the hearer from wasting processing effort on a misleading interpretation.

(45) John eats apples

It could therefore be argued that rather than changing the state of affairs via some convention, a complement is explicitly articulated in those examples where the extra information is needed. Following a path of least effort (33) would be processed as John ate (something or other), and, presuming optimal relevance, the hearer would assume that he is to derive cognitive effects from the act of eating as this is all he has to go on. If the speaker wishes the hearer to derive cognitive effects from the eating of an apple specifically, he is forced to articulate this, otherwise the hearer will stop deriving before the intended effects have been reached.

6.1.2 Reduction in Processing Effort.

Examples that fall into this category involve the payoff in effort between decoding something linguistically and inferring it from the context. Whilst inference may, in certain circumstances, involve an increase in processing effort, the experimental data cited by Iten et al (see section 3.1 above) suggests there are clearly circumstances where something is so salient in the context that it demands less effort from the hearer to identify it by inference than it does to decode a linguistic form leading to the same referent. Alternatively, it may be that the specification of a particular complement is unimportant in the derivation of the desired effects and so articulating the extra elements will only waste the hearer's effort. Whilst Peter and Mary discuss their wedding reception arrangements, Mary remembers that they have both seen John dancing particularly well at a recent party. Mary utters (43) to jog Peter's memory. She knows that Peter is aware of John's dancing skills and so she does not need to specify any further.

6.1.3 Abilities.

The second clause of the definition of optimal relevance takes us into the concerns of the speaker. The first issue of this sort that may affect the utterance is the knowledge and abilities of the speaker. Again let us return to the example in (43)

(43) John dances

Returning to the context outlined above, it may be that during the discussion of the wedding reception with Peter, Mary remembers that she has overheard John talking about his dance classes, but she has no idea what sort of dance classes he takes.

She utters (43) because she does not know enough to be any more specific. Mary has every intention of providing Peter with the information he needs, and has no wish to deceive or mislead him, but she simply does not have the knowledge to make her utterance any more relevant.

6.1.4 Preferences.

Again let us consider the situation of Peter and Mary's wedding reception. This time Mary is fully aware that John can only dance the tango. However, she has recently fallen out with John and wishes to see him make a fool of himself in public. Peter is unaware of this background. Once again Mary utters (43). However, in this situation Mary has the ability to be more specific, but does not wish to be so. She does not wish Peter to realise what she is planning, and so her utterance is deliberately non-specific and indefinite.

However unlikely the scenario may be, these examples demonstrate how the definition of optimal relevance can result in complement omission for a variety of different reasons. In reality it is likely that these will overlap and coincide with each other. For example, Mary may not know what type of dancing John does, but may also believe that it is unimportant.

6.2 Some Applications

To satisfy the expectation of optimal relevance which relevance theory presumes each utterance carries with it, that utterance must satisfy the two conditions. We have seen how the conditions can influence how the speaker formulates her utterance for optimal relevance. I will now return to some of the examples considered earlier and apply this approach to them. Reconsider example (21), repeated here:

(21) John brought the sandwiches and Ann ate.

It may be that the speaker does not know, or perhaps does not wish to divulge, how many sandwiches were eaten, in which case the formulation of the utterance is constrained by the speaker's abilities or preferences. Alternatively, it may be that the number of sandwiches eaten is not important in achieving relevance, and so it would be causing the hearer unnecessary processing effort to focus on it. The role that the number of sandwiches plays in achieving relevance depends on the speaker's communicative intention and the context in which she is communicating. I will present two possible contexts in which the utterance in (21) could be spoken to further illustrate how the interpretation may be affected in this way.

Context A: Paul and Mary are telling their friend about a picnic they went on at the weekend.

Paul : Tom brought the cakes, Alan brought the cheese, Peter brought the wine...

Mary: John brought the sandwiches and Ann ate.

Context B: Ann is an anti-war protestor who is on hunger strike. She has made it known that she will continue to starve herself until an important politician named Andrew John comes to speak with her. Newspapers are covering the story and they print the utterance in (21).

In both these examples it is not the substance or the amount that is eaten that makes the utterance relevant, but rather the fact that the act of eating took place. In context A this is to implicate that Ann contributed nothing productive to the picnic and therefore, perhaps, to comment on her character. In context B, the speaker is communicating that Ann has started to eat again after a period of abstinence. In both cases it is entirely possible that Ann ate all the sandwiches, but this is not important. It is also possible that Ann ate something other than the sandwiches as well or instead. All the hearer need derive is that Ann ate enough of the sandwiches, or conceivably enough of something, to derive the necessary implicatures in the given context and therefore to make the utterance worth processing. These examples demonstrate that the hearer can derive cognitive effects without fully resolving the reference of exactly what Ann ate. In fact, if the speaker gave detailed information on the numbers or specifics of what was eaten they would cause the hearer unjustified effort and therefore detract from the overall relevance. For example, consider the effect if the newspaper had printed (46) instead of (21).

(46) John brought the sandwiches and Ann ate two ham sandwiches, three egg sandwiches and two packets of crisps.

Such a formulation would detract from the relevance of the utterance in this context. It will cause the hearer the added effort of processing the extra linguistic material and it is likely to distract the hearer from the main message by causing him to search for something more to justify the effort he has put in by processing these specific yet unimportant details. Of course, there are contexts in which the extra material in (46) will be justified. It might be that Ann is always saying she is on a diet and she is notorious for not sticking to it. An utterance of (46) would be relevant if the speaker wanted the hearer to, for example, strengthen his assumption that Ann is not sticking to her diet.

7 The definite / indefinite distinction revisited

The distinction between definite and indefinite null complements plays a vital role in Fillmore's approach to implicit arguments and is taken up and explored in the work of Velasco and Munoz. Examples such as (21) and (23) given by Groefsema suggest that the distinction doesn't fall out as smoothly as Fillmore would like. However, his data clearly suggest that there is some kind of correlation between verbs and the definite / indefinite status of their possible implicit complements. I want to revisit this observed distinction in the light of work by Francois Recanati and more specifically in relation to the principles of relevance theory to see if a clearer picture emerges.

7.1 Recanati's 'Unarticulated Constituents'.

Recanati (2002, 2006) discusses implicit arguments and other unarticulated constituents in relation to truth-conditional pragmatics. His work covers a wider spectrum of cases than is addressed by the authors discussed above. Whilst implicit verbal arguments play a role in his approach, Recanati is also concerned with other elements that contribute to intuitive truth conditions, but may remain unarticulated. For example, Recanati provides (47) as an example of an utterance that involves an unarticulated temporal location.

(47) I've had a very large breakfast

The utterance in (47) would be literally true if and only if the speaker has had a very large breakfast at some point in the past. However, if (47) is uttered as the answer to an enquiry as to whether the speaker would like any lunch, it conversationally implicates that the speaker is not hungry. To derive this implicature the hearer must assume that the breakfast the speaker is referring to was eaten recently. This extra step of assuming a temporal location is necessary for the utterance to have its intended effect, and yet there is no explicit mention of a time in the utterance. The temporal location is unarticulated.

Like Fillmore, Recanati divides the phenomenon into two classes: the definite implicit arguments where there is an, 'unavailability of indefinite readings' (2006, p4) and indefinite arguments such as in (48) where the argument of the verb is interpreted as something 'something or other.'

(48) Mary eats (something or other)

However, Recanati argues that only one of these two groups should really be described as truly implicit. He proposes an alternative account of the indefinite examples that, he claims, means that we no longer need to posit an implicit argument at all in these indefinite cases. Under this analysis the indefinite interpretations result from the application of a variadic function on the underlying form of the verb. This function either adds or removes an argument 'slot' and at the same time either provides or suppresses the material with which to fill it. Recanati argues that 'to eat', when used intransitively, is an example of such a function acting recessively. 'To eat', he claims, is a transitive two-place predicate. When it is used intransitively it is operated upon by a function that both removes the otherwise obligatory object slot, and suppresses the argument role. Thus, in effect, the verb is no longer transitive and so there is no object argument and so no implicit argument. The argument is not truly implicit, because the verb no longer denotes 'a relation between the eater and the 'implicit argument' (the food).' (2006, p5) The same type of function can be seen acting productively with predicate modifiers. 'Run' maybe modified by 'fast' to produce 'run fast', red may be modified by 'blood' to become 'blood red' and so on. Recanati suggests that we view such modifiers as contributing a variadic function to the semantics of the predicate. In these cases the function adds an argument role to the semantic frame and contributes the material that fills the role.

Thus, according to Recanati, the semantics of a verb may change depending on its use. Recent work by relevance theorists in the area of lexical pragmatics also considers how meanings may be modified in use. In the next section I will consider this work in relation to the null complement examples.

7.2 Concept Adjustment

Just as Recanati's conception of a variadic function allows the specific meanings of verbs to change in use and in context, so relevance theory allows us to apply a general principle of pragmatic adjustment to these examples to explain the various intuitions they produce. I will follow Recanati in dismissing the indefinite examples as not truly implicit, and I will suggest that in such cases, the semantics of the verb is adjusted, narrowed, broadened or fine-tuned as the hearer follows the path of least effort in his search for relevance. This process of adjustment blurs the distinction between definite null complements and indefinite null complements. As outlined above, every utterance carries with it a presumption of its own optimal relevance. The hearer is entitled to assume that the speaker is being optimally relevant. According to relevance theory, pragmatic concept adjustment is extremely common in language use and examples can be found in virtually every utterance. Wilson (2004) provides illustrations such as (49)

(49) All doctors drink

Taken literally (49) would mean that all people with doctoral degrees drink some kind of liquid. However, utterance (49) would normally lead to the interpretation that all medical doctors drink alcohol, possibly to a significant degree or to excess. The fine-tuning of the exact meaning would depend on the context in which it was spoken. However, it is clear that in this case the verb ‘drink’ and quite possibly the noun ‘doctors’ do not convey their strict literal sense. In fact, they provide ‘no more than a clue to the speaker’s meaning’ (Wilson 2004 p354). The hearer will take the encoded meanings and narrow or broaden them as part of his search for relevance. With the presumption that the utterance is optimally relevant, the hearer will follow the path of least effort in constructing the content and context and in computing cognitive effects. Some basic and easily accessible encyclopaedic knowledge tells us that (49) is trivially true. Therefore, interpreted literally, it does not produce any cognitive effects and so is not worth the hearer’s effort to process. Therefore, as part of the comprehension process the hearer will adjust the concepts so that enough implications will be derived to satisfy the expectations of relevance. In the case of (49) this means that the word *drink* is narrowed to the ad hoc concept DRINK*, where DRINK* denotes *drinking alcohol to a significant degree*. The same word might be narrowed differently in a different context.

(50) Would you like another drink?

‘Drink’ in (50) will be narrowed in different ways depending on whether, for example, it is said to a small child at a birthday party or to a close adult friend whilst in a pub.

Let us consider how such an approach to encoded word meaning might allow us to reanalyse some of the implicit argument examples given above. Let us return to example (21)

(21) John brought the sandwiches and Ann ate.

If we begin with the literal meaning of the verb ‘to eat’⁸ we again find ourselves faced with a trivial truth. If we accept that Ann is a living human being, then it is trivially true that at some point she must have eaten something or other. A generalised indefinite reading of this sort therefore fails to lead to any positive cognitive effects for the hearer. If an indefinite reading is rejected in this way we

⁸ I make no claim that this is the process followed during interpretation.

may consider a definite reading of the missing argument. However, as discussed above intuitions suggest that (21) does not communicate that Ann ate all, or even a definite number of the sandwiches. Instead we find ourselves with an interpretation where what Ann ate included an indefinite amount of a specific substance. If we accept that the encoded meanings of words can be adjusted during the on-line comprehension process then we can see how the meaning of 'ate' can be adjusted to denote the concept ATE*, where ATE* communicates something like *ate of the sandwiches*. When interpreting such an utterance the hearer must presume that the utterance will be relevant enough to be worth processing, but must also allow for the preferences and abilities of the speaker. The speaker of (21) may not know how many sandwiches were eaten or may not wish to divulge. Therefore this use of the ad hoc concept, constructed as part of the comprehension process and specific to the context in which the utterance occurs allows the hearer to derive the sort of implicatures discussed above and expectations of relevance can be satisfied. A similar approach can be applied to Groefsema's example in (23). Here, *won* is narrowed to WON*, where WON* means *won a competitive tennis event*.

In section 7 I looked at the possible motivations lying behind a speaker's decision to omit an argument. In this section I have suggested one possible process by which this may take place. Omitting the arguments in (21) and (23) allows the speaker's meaning to hover between the definite and indefinite readings, directing the hearer to some kind of specific yet indefinite interpretation.

8. Concluding remarks.

The number of different accounts that have been put forward for implicit complements suggests that the phenomenon is not a simple one. I wish to reiterate that I am not trying to claim that relevance theory, or even pragmatics in general can alone account for all the distribution we see evidenced. However, it seems clear that pragmatics certainly plays some role at least in the process and that the principles of relevance theory offer some way to explain this role. These principles allow us to consider each utterance individually in its context whilst utilising one consistent framework across the spectrum of examples. Thus we are able to not only deal with the cases which neatly follow apparent rules or patterns, but also with the examples which seem to be exceptions. Relevance theory has wide ranging implications for utterance interpretation and I believe that there is potential to use it to gain insight into many aspects of the implicit argument phenomenon. In this paper I have focused on using its principles to understand the various motivations that may lie behind a speaker producing an utterance with an implicit argument. I have also considered the lexical pragmatic process of concept adjustment as one

possible process by which optimal relevance may be achieved. However, further work remains to develop this more precisely and to consider factors and elements of existing research that may be applicable. In sum, I wish to conclude that whilst implicit argument use may be influenced by many factors both within the grammar and during pragmatic processes, the overall understanding of their production and comprehension is vastly improved if we work within an established cognitive-based pragmatic framework, and I believe that relevance theory provides just such a framework.*

References

- Allen, Shanley E. (2000). A discourse-pragmatic explanation for argument representation in child Inuktitut. *Linguistics* 38(3), 483-521.
- Allerton, D.J. 1975. Deletion and proform reduction. *Journal of Linguistics* 11: 213-237.
- Ariel, Mira. (1988). Referring and accessibility. *Journal of Linguistics* 24, 65-87.
- Bloom, Paul. (1990). Subjectless sentences in child language. *Linguistic Inquiry* 21 (4), 491-504.
- Dixon, Robert M.W. 1991. *A New Approach to English Grammar on Semantic Principles*. Oxford: OUP.
- Fillmore, C.J. (1986). Pragmatically controlled zero anaphora. In V. Nikiforidou et al (eds.), *Proceedings of the XII Annual Meeting of the Berkeley Linguistics Society*. Berkeley, CA: BLS.
- Groefsema, M. (1995). Understood arguments: A semantic/pragmatic approach. *Lingua* 96: 139-161.
- Gundel, J. Hedberg, N. and Zacharski, R. (1989) Cognitive status and the form of referring expressions in discourse. *Language* 69(2), 274-307.
- Iten, C et al. (2004). Null complements: Licensed by syntax or pragmatics? In M.O. Junker, M. McGinnis & Y.Roberge (eds.) *Proceedings of the 2004 Canadian Linguistics Association*, pp. 1-15.
- Jackendoff, R. (1983). *Semantics and Cognition*. Cambridge Mass: MIT Press.
- Katz, J.J & Postal, P.M. (1964). *An Integrated Theory of Linguistic Description*. Cambridge, MA: MIT Press.
- Nemeth, E. (2000). Occurrence and identification of implicit arguments in Hungarian. *Journal of Pragmatics* 32 1657-1682.
- Matsui, Tomoko. (2000). *Bridging and Relevance*. Amsterdam: John Benjamins.
- Recanati, F. (2002). Unarticulated Constituents. *Linguistics and Philosophy*, 25.299-345.
- Recanati, F. (2006) – It is raining (somewhere). *Linguistics and Philosophy* (submitted to).
- Rice (1988). –Unlikely lexical entries. *Proceedings of the Berkeley Linguistics Society* 14: 202-212.
- Sperber, D and Wilson, D. (1986). *Relevance: Communication and Cognition*. Oxford: Blackwell.
- Valian, Virginia. (1991) Syntactic subjects in the early Speech of American and Italian children. *Cognition* 40 21-81.

* Thanks to Deirdre Wilson for her comments on this paper, and her help and encouragement.

- Velasco, D.G. & Munoz, C.P. (2002). Understood objects in functional grammar. *Working papers in functional grammar* 76.
- Vendler, Zeno 1967. Verbs and times. *Linguistics in philosophy*. Ithaca, NY: Cornell University Press.
- Wilson, D. (2004). Relevance and lexical pragmatics. *UCL Working Papers in Linguistics* 16: 343-360.