

Relevance Theory and Implications for Linguistic Analyses

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1 Introduction

Relevance theory (Sperber & Wilson 1986) is a general cognitive theory which explains how humans acquire information about the world, and within this general framework, there is a more specific pragmatic theory which has its own particular principle, called 'the principle of relevance' (see Section 2.2).

Since its publication, the theory has attracted much attention and caused much controversy, since it covers vast areas of disciplines such as information processing, communication, linguistics and so on, and understanding all the concepts in the theory is quite a task.

As is true with any scientific theory, Relevance Theory (Sperber & Wilson 1986) did, prior to its publication, go through 'sophistication processes' as seen in the change from 'maximisation of relevance' to 'optimisation of relevance', and is still going through, as seen in the emphasis on 'pragmatic criterion of consistency with the principle of relevance' (Section 2.3) rather than on 'pragmatic criterion of the principle of relevance' (Section 2.2).

As I dealt with linguistic data in English and Japanese, I became convinced that the theory can provide necessary concepts for analyzing the data adequately (see Itani 1990, 1992a-c, 1993 etc.).

So the aim of this paper is to introduce Relevance Theory in its latest available form of publication (though, strictly speaking, 'latest form' does not exist) and its semantics/pragmatics distinction which

has given a lot of implications for linguistic analyses. In Section 3.2, I will show that this Relevance-theoretic distinction is able to provide adequate analyses for problematic cases that the existing Gricean framework would face.

2 On the Notion 'Relevance'

Wilson & Sperber (1990 : 41) suggest that humans pay attention to some phenomena rather than others : they represent these phenomena to themselves in one way rather than another ; they process these representations in one context rather than another. According to Sperber & Wilson, what determines these choices is some standard governing human cognition called 'relevance'. They suggest that humans tend to pay attention to the most relevant phenomena available ; they tend to construct the most relevant possible representations of these phenomena, and to process them in a context that maximises their relevance (Sperber & Wilson 1990 : 41).

Sperber & Wilson (1986) claim that relevance, and the maximisation of relevance, is the key to human cognition, and according to Sperber & Wilson (1986), information is relevant to a human if it interacts in a certain way with his existing assumptions about the world. They present three cases of the type of interaction.

Case A

I go home with the following thought :

(1)a. If Mary is at home, I will suggest that we should go to see a play.

I arrive home and discover via visual perception :

(1)b. Mary is at home.

In this case, I can deduce the following implication (1)c. using both old and newly presented information (i.e. (1)a-b) as joint premises in a

inference process :

(1)c. I will suggest that we should go to see a play.

(1)c. is not deducible from either the existing assumption (1)a. or the newly presented information (1)b. alone, but from the union of the two.

Case B

I go home with the following thought :

(2)a. Mary may be at home.

I arrive home, hear her singing and discover via auditory perception this time :

(2)b. Mary is at home.

In this case, the newly available information (2)b raises the strength of the existing old information (2)a. from weak to certain. There might be a case in which newly available information lowers the strength of the existing old information (2)a. For example, when I am thinking Mary must be home by now, somebody tells me that he has just seen her shopping and I start to think she is not likely to be at home. This weakening is not discussed in Sperber & Wilson (1986). However, the newly available information is changing the status of the existing old information as in the case just given above and I feel this should be included here. In Itani (1992c) I have given a possible example of 'weakening' observed in utterance-final use of KEDO.

Case C

I go home with the following thought :

(3)a. Mary might be/is at home.

I arrive home and discover :

(3)b. Mary is not at home.

In this case, the newly available information (3)b erases the existing old information since (3)b is an established fact, and it replaces the former.

When a newly presented piece of information interacts with a person's assumptions in the ways mentioned above (i.e. Cases A–C), Sperber & Wilson (1986) say that it is 'relevant' both in their technical sense and in an intuitive sense. Intuitively, for example, we know that discovering that the washing machine is on, is not relevant in Cases A–C, and that discovering that Mary is not at home and the washing machine is on, is less relevant in Cases B–C.

Cases A–C show how a piece of information can be relevant or not, specifying what kind of effects the information can achieve. However this is not a sufficient characterization as, firstly, 'relevance' is a matter of degree as mentioned above, and secondly, there is another factor we have to consider, i.e. effort required for achieving the effects. It is to these that I now turn.

2.1 Processing Cost and Contextual Effects

According to Sperber & Wilson (1986), information is relevant if it interacts with existing assumptions in the ways given in Cases A–C. So there are basically three ways in which a newly presented piece of information can be relevant : it may lead to a contextual implication (Case A), it may strengthen an existing assumption (Case B), or it may eliminate an existing assumption and replace it with the newly available piece of information (Case C). Sperber & Wilson (1986) call these interactions, 'contextual effects' and say that information is relevant when it has one of these contextual effects. Having contextual effects is a necessary condition for relevance, and the more contextual effects a newly presented piece of information has, the more relevant it is. However, it is not the only factor involved.

I have mentioned that in Cases B–C, the information that Mary is

not at home is more relevant than the information that Mary is not at home and the washing machine is on. So 'relevance' is, on the one hand, a classificatory notion in that we can talk about a newly presented piece of information being relevant or not. And on the other, it is a comparative notion in that we can talk about a newly presented piece of information being more or less relevant.

Let me clarify this point. Suppose I am on my way home with the thought that if Mary is at home, I will suggest that we should go out for supper. And I meet Mary's colleague who says that Mary has to stay late in the office. This utterance is highly relevant as it eliminates my thought. Now suppose that the colleague says that Mary has to stay late in the office and I see children crossing the road behind the colleague. This conjoined information achieves the same contextual effect. However, intuitively we know that this conjoined information is less relevant than the former case.

The reason is: only the information that Mary is not at home is used to eliminate and replace the existing assumption, i.e. to achieve contextual effects; and processing the information that children are crossing the road will not yield any immediate effect in this context, and any processing requires some effort.

That is, when achieving the same amount of contextual effects, a newly presented piece of information is more relevant the less the effort that was required to derive the effects. So we can have the following extent conditions for the definition of 'relevance':

(4) Relevance

Extent condition 1: an assumption is relevant in a context to the extent that its contextual effects in this context are large.

Extent condition 2: an assumption is relevant in a context to the extent that the effort required to process it in this context is small.

(Sperber & Wilson 1986: 125)

In Cases A—C above, we have seen that relevance is a relation between a newly available piece of information and the context in which it is processed. However, we do not compute the level of relevance every time we process newly presented information, and therefore we cannot judge in which context the newly presented information is more relevant. Suppose that (1)b is processed in the following context (0)a and (1)a :

(0)a. If Mary is at home, I will suggest that we should visit a friend.

(1)a. If Mary is at home, I will suggest that we should go to see a play.

(1)b processed in the context (0)—(1)a gives two contextual implications, while (1)b processed in the context of Case A, only one contextual implication (1)c. Now on the contextual effect side i.e. the first extent condition, (1)b processed in the former context is more relevant than that processed in the latter as it has more contextual effects.

However, on the processing effort side i.e. the second extent condition, this is not necessarily the case. Indeed it might be the case that the contextual assumptions are very easily accessible and accessing (0)—(1)a requires the hearer just the same effort as accessing (1) a. However, basically contextual effects are obtained via some mental processes and mental processes necessarily involve a certain effort. So unless we fix either of the variables, effects or effort, we can not judge in which context the newly available information is more relevant.

Suppose, however, that Mary always works till late and never be home when I come home, and I do not plan anything for the evening. In this context, accessing the context (0)—(1)a. requires more effort than accessing the context (1)a. When I go home, I surprisingly discover that Mary is at home. The former context gives two conclusions that I will suggest that we should visit a friend, and that I will

suggest that we should go out to see a play, while the latter, only the latter one. On the contextual effects side, i.e. the first extent condition, the former case will be more relevant, as it gives two contextual implications. However, according to the processing effort factor i.e. the second extent condition, it is not the case, as accessing two contextual assumptions that are not easily accessible requires more effort than accessing one contextual assumption that is not easily accessible. So the context (0)—(1)a yields more effects with MORE effort than (1)a and again, neither, then, is predicted as more relevant than the other.

Sperber & Wilson thus propose the comparative definition of relevance :

- (5)a. Other things being equal, the greater the contextual effects, the greater the relevance.
- b. Other things being equal, the smaller the processing effort, the greater the relevance.

(Wilson & Sperber 1990 : 44)

An individual, whose aim is to maximise relevance, should pay attention to the phenomena which seem likely to give rise to the greatest possible contextual effects in return for the available processing effort. In turning one's attention to some phenomenon in the world we may have the hope that it will be relevant. For a certain subset of attention-demanding phenomena one can have a warranted expectation of relevance. I now turn to this point.

2.2 Principle of Relevance

Some phenomena are relevant to an individual and are worth processing mentally, and others, not relevant at all and therefore are not worth processing at a conceptual level. When a phenomenon is designed to achieve contextual effects i.e. when it is produced by an

agent with the intention of informing an audience of something, it is called a stimulus. Some stimuli are used to make an informative intention mutually manifest and they are called 'ostensive stimuli'. They are characterised as, firstly, attracting the audience's attention, and secondly, focusing it on the communicator's intentions.

There is a substantial difference between the way an individual approaches an ostensive stimulus directed at him and the way he attends to other stimuli. For example, your friend waving at you in a concert hall with the intention of informing that she is also at the concert yields contextual effects that the same act of her waving at the musician on the stage does not achieve. The former that demands your attention is an ostensive stimulus while the latter is not. The contextual effect might for example be that you might think that they should have a quick drink after the concert. While the addressee of an ostensive stimulus has fairly precise expectations of relevance, the addressee of other stimuli can only have hopes of relevance, which are sometimes totally unwarranted as in the case of the friend waving at the musician on the stage, and sometimes turn out to be justified.

Now humans pay attention only to phenomena they think will be relevant and the success of an act of ostensive communication requires the addressee's attention. This amounts to saying that an act of ostensive communication automatically communicates a presumption of relevance, that is, the stimulus directed at the addressee is relevant enough to be worth his attention.

The presumption of relevance can be characterised as, on the contextual effect side, guaranteeing an adequate range of contextual effects to be worth the addressee's attention, and on the processing effort side, guaranteeing that no unnecessary processing effort is put to the addressee. This is called 'presumption of optimal relevance' and its definition goes :

(6) Presumption of optimal relevance

- (a) The set of assumptions {I} which the communicator intends to make manifest to the addressee is relevant enough to make it worth the addressee's while to process the ostensive stimulus.
- (b) The ostensive stimulus is the most relevant one the communicator could have used to communicate {I}.

(Sperber & Wilson 1986 : 158)

I have said that relevance is not only a matter of degree, but also a relation between information and a context. Therefore, a speaker trying to be optimally relevant may try to make sure that the context the communicator believes the addressee to have accessible, is the one that guarantees that when the information is processed in this context, it yields an adequate range of contextual effects for the smallest possible processing effort. When an ostensive stimulus achieves an adequate range of contextual effects and puts the addressee to no unjustifiable processing effort, Sperber & Wilson technically say that it is 'optimally relevant'.

Relevance theory covers all incoming information, which makes this theory a general cognitive theory. However, within this general framework, there is a more specific principle called 'the principle of relevance' which applies just to ostensive stimuli, of which utterances are a central case, and so forms the basis of a pragmatic theory. The definition of this principle goes :

(7) Principle of Relevance

Every act of inferential communication creates a presumption of 'optimal relevance'.

(Wilson & Sperber 1990 : 45)

Sperber & Wilson (1986) claim that this single principle is the key to an explanatory pragmatic theory, a theory of utterance interpreta-

tion. An utterance indeed creates a presumption of optimal relevance but this does not mean that it will actually be optimally relevant to the hearer. The actual pragmatic criterion used by a hearer is not one that assumes optimal relevance but one that looks for an interpretation which is *consistent with* the principle of relevance, a notion which I shall go on to discuss now.

2.3 A Pragmatic Criterion of Consistency with the Principle of Relevance

Pragmatic theory deals with how the hearer derives from an utterance all the information that is intentionally communicated. That is, an explanatory pragmatic theory is expected to account for how the hearer selects context, recognizes which proposition the speaker intended to explicitly express, derives implicatures of the utterance, and decides what attitude the speaker intended to communicate to the proposition expressed and to the implicatures.

The recovery of all these sorts of information is the interpretation of an utterance which was intended by the speaker. Sperber & Wilson (Wilson 1990 : 12) propose a criterion which governs the recovery of all this information, i.e. governs utterance interpretation.

This criterion is built around the notion of expectation of relevance which is created from an assumption that humans pay attention to relevant information. Relevance is, as was discussed in 2.1, defined in terms of contextual effects and processing effort.

However, some processing effort is required to achieve any contextual effect and the effort needed for the effect depends on, firstly, the linguistic complexity of an utterance, secondly, the accessibility of the context, and thirdly, the inferential effort needed to achieve the contextual effect in the accessed context.

Now according to the principle of relevance, every utterance carries a guarantee of its optimal relevance. An utterance, on a given

interpretation, is optimally relevant iff : a. it achieves enough effects to be worth the hearer's attention ; b. it puts the hearer to no gratuitous effort in achieving those effects (Wilson 1990 ; 13).

Every utterance has a variety of possible interpretations which are compatible with the information given by the linguistically encoded stimuli. And there might be several possible interpretations which could give rise to an adequate range of contextual effects.

For example, the utterance (8) has possible interpretations such as (9) and (10) :

- (8) Mary handed the key and Ken opened the safe.
- (9) Mary handed the key & (as a result) Ken opened the safe (with that key).
- (10) Mary handed the key & (simultaneously) Ken opened the safe (with a wrench).

Obviously in a normal context, the interpretation (10) has more contextual effects, as unexpectedly Ken opened the safe with a wrench despite the key handed to him. However, the hearer is likely to interpret the interpretation (9), because this is more accessible in a normal context.

According to the second condition of optimal relevance that guarantees that the hearer is not given no gratuitous effort, the speaker must have made the intended interpretation as easy as possible for the hearer to recover. If the speaker intended to communicate the second interpretation (10), she must have said that Mary handed the key but Ken opened the safe not with the key, but with a wrench, so the hearer first accesses the second interpretation. That is, the speaker must have avoided producing an utterance which has a satisfactory and immediately accessible interpretation (e.g. (9)) which is not the intended one.

An implication of this is that the hearer does not go through inferring and discarding wrong interpretations until he gets the right

one. That is, the first interpretation which satisfies the hearer's expectation of optimal relevance is the one the hearer should choose as the intended one.

And the most important implication that follows from the expectation of optimal relevance is that an utterance does not actually have to be optimally relevant. For example, knowing that the hearer will go hiking the following day, the speaker tells him that it will be a fine day which he happens already to have heard on the radio. The information given will, then, have no contextual effects and will be irrelevant to him.

However, the utterance will be interpreted without difficulty if the hearer can see how the speaker could rationally have expected it to be relevant. In this case, it is easy to see the implications this utterance was intended to have, such as the hearer will have a lovely day out in the mountain. So the actual pragmatic criterion of utterance interpretation is a criterion of consistency with the principle of relevance :

(11) Criterion of Consistency with the Principle of Relevance

An utterance, on a given interpretation, is consistent with the principle of relevance if and only if the speaker might rationally have expected it to be optimally relevant to the hearer on that interpretation.

(Wilson 1990 : 16)

Then, the point mentioned above, that hearers do not have to access and compare a variety of interpretations in order to arrive at the correct one, can be rephrased : that is, the first interpretation tested and found consistent with the principle of relevance is the only interpretation consistent with the principle of relevance. This means that there is, at most, a single interpretation which satisfies the pragmatic criterion.

Now let me go back to the recovery of the propositional content of

(8). The most accessible referents are assigned to Mary, the key, Ken and the safe, the outcome of linguistic decoding, which is further enriched into the propositional form such as (9) rather than (10), and the hearer has accessible a context in which the propositional form (9) would be optimally relevant to him. Then when the speaker said (8), she must have intended to communicate (9) rather than (10). This process of recovering the propositional content is governed by the pragmatic criterion of consistency with the principle of relevance which guarantees that the given interpretation is optimally relevant and it yields an adequate range of contextual effects with no gratuitous efforts on the part of the hearer.

What I have shown here is that a pragmatic criterion is at work at the level of explicit content, the propositional content, which conventional pragmatists such as Grice (1975) would not agree: i.e. they apply pragmatic principles only at the level of implicit import of an utterance, i.e. at the level of deriving implicatures. In the next section, I would like to introduce a Relevance-based view on the explicit and implicit import of an utterance, and later show that the classical view of explicit/implicit distinction corresponding to semantics/pragmatics distinction does not hold.

3 Explicit and Implicit Import of an Utterance

It is often considered that the distinction between explicit and implicit import of an utterance corresponds to the distinction between the proposition expressed and implicatures the utterance gives rise to. The former is often labelled as sentence-meaning which falls under the domain of semantics in traditional terms, while the latter, as utterance-(sentence in context) meaning which falls under the domain of pragmatics in traditional terms (Relevance-based semantics/pragmatics distinction is to be discussed in 3.1).

In Relevance Theory, the point in explicit/implicit distinction is the

distinction between what is communicated explicitly (i.e. explicatures, the notion to be clarified below) and what is communicated implicitly (implicatures), not between the proposition expressed and implicatures. The propositional form of an utterance (roughly equals with the proposition expressed) is not always communicated, and sometimes needs to be embedded in higher-level descriptions of propositional attitudes or speech-act verbs.

For example, a teacher, talking of a very kind girl, says (12) on one occasion, and (13)b, on the other.

(12) Mary is an angel.

(13)b Mary is very kind.

Since the teacher obviously does not believe the truth of (12) (having wings, etc.), the speaker does not intend to make (12) manifest to the hearer, i.e. to make it available to the hearer as a true assumption. That is, the speaker does not intend to ‘communicate’ the propositional form given by (12). What is communicated explicitly by (12) in the given context is :

(14) The speaker has said that Mary Smith is an angel.

The speaker of (13)b, on the other hand, believes the truth of the proposition in the given context, and she does communicate not only (15) but also (16) from which the hearer deduces (17) :

(15) The speaker has said that Mary Smith is very kind.

(16) The speaker believes that Mary Smith is very kind.

(17) Mary Smith is very kind.

So in Relevance Theory the explicitly communicated import of (12) is (14) while that of (13)b, (15)–(17), whose difference the traditional view of explicit import as being the proposition expressed does not capture. Now what governs the recovery of these explicit imports is the pragmatic criterion of consistency with the principle of relevance.

For example, in the given context, the speaker's endorsement of the propositional content as seen in (16) is easily accessible in the literal assertion (12), while in the metaphor (13)b this is not the case.

An utterance is considered to have only one identifiable propositional form (=the truth-conditional content), but it can have many explicatures as given in (14)–(17). Explicatures are characterised as (a) being explicitly conveyed assumptions, and as (b) the speaker's wanting to make them manifest to the hearer. Sperber & Wilson (1986 : 182) define explicitness as in (18) :

(18) Explicitness

An assumption communicated by an utterance U is explicit if and only if it is a development of a logical form encoded by U.

For example, explicatures such as (14)–(16) are developed from the logical form encoded by the utterance, by embedding it in propositional attitude/speech act verb descriptions.

The propositional form that Mary Smith is an angel, will interact with contextual assumptions such as (19)–(20) and give rise to contextual effects, i.e. implicatures such as (21) and (22) respectively, which are the standard implicit import of the utterance :

- (19) An angel is extremely kind.
- (20) An angel is very gentle.
- (21) Mary Smith is extremely kind.
- (22) Mary Smith is very gentle.

Assuming that the assignment of Mary Smith to 'Mary' has an adequate range of contextual effects which the speaker could have foreseen, the utterance (12) will satisfy the criterion of consistency with the principle of relevance.

Now the hearer of (12) could have accessed contextual assumptions such as (23) and (24). Why is it then that he has accessed (19) and (20)?

This is again due to the pragmatic criterion (11) as accessing (19)–(20), but not (23) and (24), will give rise to the relevant contextual implicatures (21) and (22) in the context in which the speaker is talking about a very kind girl.

(23) An angel has wings.

(24) An angel is a messenger.

In Relevance Theory, not only the implicatures (21) and (22), but also the contextual assumptions (19) and (20) accessed by the hearer to derive those implicatures are the implicit import of the utterance (12). This is because the speaker intends to make (19) and (20) manifest to the hearer as true assumptions (otherwise, the speaker could not have expected the hearer to derive the intended implicatures (21) and (22)) and so the speaker is implicitly communicating (19) and (20). Of course, the implicatures (21) and (22) are more strongly communicated than the contextual assumptions (19) and (20) are in the given context: i.e. the speaker intended to make (21)–(22) more manifest to the hearer than (19) and (20).

The first interpretation tested and found consistent with the principle of relevance (i.e. the recovery of the propositional form, accessing the given context, and deriving implicatures such as above) is the only interpretation consistent with the principle of relevance.

Reference assignment, disambiguation, concept enrichment as in the ‘and’ example in (9) are rather standard processes required for the recovery of the propositional form of an utterance. These processes are, of course, governed by the same pragmatic criterion as the one used to derive implicatures, i.e. consistency with the principle of relevance.

So we have to cast doubt on the traditional semantics/pragmatics distinction in which pragmatic principles are supposed to be applied only at the level of recovering the implicit import of an utterance, e. g. at the level of deriving implicatures. For example, Grice’s coopera-

tive principle and his maxims are at work only at this level.

In the following section, I will present a Relevance-based semantics/pragmatics distinction. In Section 3.2, I will point out a problem with Gricean distinction between ‘what is said’ and ‘what is implicated’ which he seems to equate with the semantics-pragmatics distinction.

3.1 Semantics/Pragmatics Distinction

The common traditional approach to the definition of semantics is a means of assigning truth conditions to the sentences of natural language. Pragmatics is, in this traditional spirit, seen as the study of all non-truth-conditional aspects of meaning, or according to Gazdar (1979: 2), pragmatics is meaning minus truth-conditions. Thus, the truth-conditional view of linguistic semantics is maintained in spite of obvious counter-examples we will consider below.

If natural-language sentences had truth-conditions, then we would have to be able to specify the conditions under which the following sentences are true :

- (25) She went to a bank today.
- (26) That was cheap.

We cannot assign truth conditions to (25)–(26) unless more information is given. In (25), we do not know who ‘she’ is, whether ‘she’ went to a financial institution, or to a river bank, and we have to identify the time of utterance. In (26), we have to know what is referred to by ‘that’, and what sense of ‘cheap’ was intended, low in price or mean etc.

Pragmatic processes governed by the criterion of consistency with the principle of relevance have to be applied in order for us to be able to identify the propositional form of an utterance and to assign truth-conditions to it. Truth-conditions cannot be assigned to natural

language sentences such as (25)–(26). They can only be assigned to the propositions recovered via pragmatic processes.

Some attempts have been made to deal with deictic expressions (e.g. today, I, here) within the truth-conditional semantics. We might set up some programme that decodes ‘today’ into ‘the day of the utterance’, ‘I’ into ‘the speaker’, ‘here’ into ‘the place of the utterance’ and so on. However, even sophisticated programmes cannot handle e.g. ‘that’ in (26), the identification of which is impossible without having contextual information.

Moreover, this leads to the conflation of linguistically determined meaning and contextually determined meaning, the conflation of semantic and pragmatic meaning. The truth-conditional view of semantic meaning cannot thus be maintained, as simply, natural language sentences standardly do not have truth conditions. Their logical forms, the outcome of linguistic decoding, are semantically incomplete.

Additionally, this view of semantics cannot capture the difference of interpretation derived from different word order i.e. difference in linguistic meaning. For example, the difference between (27) and (28) cannot be defined truth-conditionally, i.e. they have the same truth-conditions.

(27) It was Mary who hit Ken.

(28) It was Ken whom Mary hit.

It is our linguistic knowledge, not non-linguistic knowledge, that gives rise to different interpretations for (27) and (28). However, semantic meaning in terms of truth-conditions cannot capture this, and has to resort to pragmatics to define the difference, which is obviously wrong.

The same argument can be put forward for the difference between English conjunctions ‘and’ and ‘but’. Truth-conditionally they have the same meaning, logical connective ‘&’. Grice (1975) treats ‘but’ as

giving rise to a conventional implicature of contrastive meaning on top of having the truth-conditional meaning '&'. Grice uses the term 'implicature' which is a pragmatic notion. However, it is our linguistic knowledge of the word 'but', not non-linguistic knowledge that tells us something about this contrastive meaning (Blakemore (1987) suggests a semantic treatment of this contrastive meaning within Relevance Theory).

Both semantics and pragmatics have to be part of a psychological theory of utterance interpretation, within which the distinction between linguistic and non-linguistic knowledge has to be made. And a principled and psychologically grounded distinction between these kinds of knowledge has to underlie semantics/pragmatics distinction.

Linguistic knowledge, i.e. knowledge of grammar is an autonomous system which is engaged in decoding processes, not affected by other cognitive systems. According to Fodor (1983), the language faculty is an input system, similar to other senses such as vision, audition, etc. and feeds information into the central system where inference processes are going on. Input systems are modular in that each of them has its own method of representation and computation, and can only process information which has a suitable format for that particular input system.

Non-linguistic knowledge is located in the central cognitive system, as opposed to input systems. The central cognitive system integrates all the information it receives from the input systems together with information retrieved from memory. The central system is thus non-modular, i.e. global and unencapsulated, and performs inferences and derives further information such as contextual implications.

So semantics/pragmatics distinction made along the line of Relevance Theory is the following. Semantics is the study of the mental mechanism based solely on our linguistic knowledge. Pragmatics, on the other hand, is the study of mental mechanism underlying the

ability to interpret utterances in context. Using contextual information, i.e. non-linguistic knowledge, the hearer infers the relevant interpretation based on the information the recovers, using his linguistic knowledge, and constrained by the relevance-based pragmatic criterion. So both semantics and pragmatics are part of a psychological theory of utterance interpretation, and the distinction is based on our different cognitive mechanisms.

In the following section, I will point out some problems of Gricean semantics/pragmatics distinction, i.e. the notions of ‘what is said’ and ‘what is implicated’.

3.2 Gricean Notions of ‘What is Said’ and ‘What is Implicated’

Grice (1975 : 44) defines ‘what is said’ as semantic meaning of an utterance, which is the truth-conditional content of an utterance, the outcome of linguistic decoding, reference assignment, disambiguation, and fixation of indexicals, while ‘what is implicated’ as pragmatic meaning of an utterance which is derived based on his cooperative principle and maxims of conversation.

He does not talk about how the truth-evaluable propositional content is recovered, i.e. what kind of criterion governs processes such as reference-assignment, disambiguation, and fixation of indexicals, which, I demonstrated in 3.1, are pragmatic processes governed by the pragmatic principle of relevance. The important point here is that Grice confined the use of pragmatic principle to the derivation of implicatures, the level of what is implicated.

Let me now turn to how these notions are applied to the analysis of conjunction ‘and’. Grice analyses the semantic meaning of ‘and’ as equivalent to the truth-conditional content ‘&’. According to him, additional meanings such as ‘& then’ in (29) and ‘& as a result’ in (30) are derived pragmatically, i.e. based on his conversational maxims and labeled as generalised conversational implicatures.

- (29) Ken took out the key and (then) opened the door.
 (30) Ken hit Mary and (as a result) she cried.

Generalised conversational implicatures are usually derived by saying that P no matter what the context is, in contrast with particularised conversational implicatures that are derived by saying that P on a particular occasion (Grice 1975 : 56).

In (29) the hearer infers the temporal connotation based on the submaxim 'be orderly' of the general maxim of manner. According to Grice (1981 : 186), if one is talking about events, then the most orderly manner would be an order corresponding to the order in which they took place.

So the two events conjoined by the logical connective '&' irrespective of the order of these events are the semantic meaning of (29). And the temporal connotation is the pragmatic meaning derived based on the manner maxim. Grice does not give an account of causal connotation examples. However, the explanation would be that a co-operative speaker would not have said the events in (30) in that order if she did not intend this causal meaning to be derived pragmatically. This account is, however, far from being a substantial explanation.

Grice's notion of 'what is said', the truth-conditional content, does face some problems, as his account predicts the following (31) and (32) to be contradictory although they are totally acceptable utterances. That is, only the logical connective '&', the meaning at the level of 'what is said' falls under the scope of logical operators such as 'if... then...', and at this level, 'P & Q' and 'Q & P' are truth-conditionally equivalent.

- (31) If Ken hit Mary and Mary cried, I would report him.
 (32) If Mary cried and Ken hit Mary, I would not report him.

The propositional contents described under if-clause in (31) and (32)

are thus identical, according to Grice, as temporal and causal connotations are captured at the level of 'what is implicated' and do not fall under the if clause. However, Grice's analysis predicts (31) and (32) to be contradictory, as the identical proposition leads to, on one occasion, the conclusion that the speaker would report, and on the other, the negation of that conclusion.

Grice's analysis of 'and' as giving rise to generalized conversational implicatures started in the right spirit to avoid lexical ambiguity analyses. As seen in (30), extra meanings apart from '&' are not clear-cut between the temporal and causal connotations, and there surely are many more meanings such as simultaneous happenings etc., which multiple ambiguity analyses cannot exhaust. A range of subtly different meanings of the word 'and' must be the outcome of general properties of the mind that an adequate psychological theory of pragmatics can explain, rather than the meaning of 'and' (Carston 1988: 159).

Now what is actually happening here is that the temporal and causal connotations fall under the scope of if-clause, under the level of 'what is said', and this is the only way we can argue that (31) and (32) are distinct utterances truth-conditionally. The proposition we recover from (24) seems to be:

(33) Ken hit Mary at t & as a result Mary cried at $t+n$.

(adapted from Carston 1988: 161)

t is some more or less specific time prior to the time of utterance, and $t+n$ is some more or less specific time, later than t . Thus temporal and causal connotations are captured at the level of what is said. And Grice's conception of what is said as the outcome of linguistic decoding, reference assignment, disambiguation, and fixation of indexicals has to be reconsidered.

It seems that the gap between sentence-sense i.e. outcome of linguistic decoding and the truth-evaluable propositional content

cannot be filled by reference assignment, disambiguation, and fixation of indexicals only, that, Grice (1975 : 44) thought, were enough. We have to derive, for example, the causal connotation for (30) and this is a pragmatic process required to recover the proposition. This pragmatic process is called 'enrichment' and Carston (1988 : 167) gives a more detailed account and examples of this process.

In this section I have shown that Gricean semantics/pragmatics distinction i.e. the distinction between 'what is said' and 'what is implicated' cannot be maintained. This is attributed to the lack of capturing two different levels of semantics, one, semantics of linguistic decoding based solely on our linguistic knowledge, and the other, semantics of propositional content based on the outcome of linguistic decoding and pragmatic processes using our non-linguistic knowledge.

Relevance Theory calls the former, 'linguistic semantics' and the latter, 'real semantics' and the recovery of the propositional content of an utterance necessarily falls under both semantics. So pragmatic principles govern not only the derivation of implicatures and accessing contextual information as Grice does, but also the recovery of the propositional form of an utterance, what Grice calls, 'what is said'.

4 Conclusion

In this paper, I have introduced Relevance Theory which has a lot of implications for a pragmatic theory of utterance interpretation. Since an utterance is an ostensive stimulus, its processing, i.e. its interpretation is governed by a pragmatic criterion with a sub-principle called 'principle of relevance' which falls out of Relevance Theory, a theory of ostensive communication.

I have shown that pragmatic principles are at work for, not only deriving implicatures, but also for, accessing contexts, recovering the propositional content of an utterance, and identifying the speaker's

attitudes towards the explicit and implicit content of an utterance.

I have introduced a Relevance notion of explicatures which are explicitly communicated assumptions and can explain the explicit import of figurative utterances such as metaphor by identifying the speaker's propositional attitude. This notion is contrasted with implicatures and yet the recovery of both types of assumptions (i.e. explicatures and implicatures) are governed by principle of relevance.

I have argued that the pragmatic criterion of consistency with the principle of relevance governs the recovery process of propositional form of an utterance. That is, the speaker would have expected the contextually recovered propositional form to be optimally relevant to the hearer on that interpretation: i.e. on that interpretation the utterance achieves enough effects with no gratuitous effort. This was observed in 'enrichment' processes, e.g. 'what is said'—level derivation of temporal and causal connotations associated with the conjunction 'and', which we have seen in the last section.

Relevance Theory thus shed new light on the conventional view of semantics. Traditional semanticists have assigned too much work on the domain of semantics: e.g. recovering the propositional content without pragmatic processes by setting up a programme to deal with a limited range of linguistic data, i.e. fixing indexicals such as 'I', and 'here'. Or rather, they assigned too little work, since the recovery process of propositional content has never been explicated in semantics, which simply is not possible and this did not seem to bother them.

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