REVIEW ARTICLE

Mental Representations: The Interface between Language and Reality,
ed. by Ruth M. Kempson, Cambridge University Press, Cambridge, 1988,
viii + 229 pp.

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1. Introduction

This book is a direct product of the conference entitled 'Mental Representations: Properties of Logical Form' in which GB theory, Situation Semantics (henceforth, SS), Relevance Theory (henceforth, RT), psycholinguistics, philosophy of language, and computer science discussed how to deal with this topic in each framework (p.vii). It is hardly possible to make a thorough review of this book within the limited space given. I will confine myself to the topics discussed in Ch. IV and those concerning RT, touching upon other topics only if they are related to the discussion in this review.

In Section 3, I will outline the fundamental proposals made in the papers by Carston, Blakemore, and Wilson and Sperber, raise some problems for them and extend the discussion to suggest how one might explain them in RT. Towards the end, I will make an overall evaluation of the place of Sperber and Wilson's RT in the recent literature on cognitive linguistics and cognitive psychology.

1.1. Summary of Each Paper

Ch. I provides a full illustration of the background for each theory and the problems related to 'mental representations'¹ and 'real semantics' (the

* Especially I wish to thank Professor Deirdre Wilson for reading an earlier draft of this review and giving me a lot of useful comments. Without her encouragement and lectures at University College London during my stay in London from 1990 to 1991, this review work would not have been finished. I am also grateful to Robyn Carston and Ruth Kempson, whose lectures have helped me to clarify some points on Relevance Theory. Finally, I have to thank two anonymous reviewers of *EL* for their suggestions. Needless to say, responsibility for the present contents is my own.

¹ (i) Fodor postulates a differentiation between input systems and the central system, but denies that the central system is amenable to investigation (Fodor (1973: 127)). (ii) Sperber and Wilson (1986)'s RT adds to Fodor's assumptions a (partial) theory of cen-

relation between expressions of a language and non-linguistic entities) (p. 3). Ch. II contains three papers. Higginbotham develops the notion of independent rules of semantics in his own model-theoretic framework to explain the phenomenon of context-dependence. On the SS theory, Cooper and Engdahl explore some problems with underdeterminacy of natural language. Despite the standard claim by SS,² Cooper proposes the possibility of attributing mental representations to the speaker. Engdahl gives a detailed argument for the *relational* interpretation of pronouns by using the 'parameters'³ postulated in semantics. Ch. III consists of two papers. The first of these, by May, argues that by combining May's dominance and scope theory with Pesetsky's path theory, it is possible to account for some problematic pronominal anaphora in which the pronoun is directly bound by a quantifier.⁴ The second, by Brody and Manzini, is devoted to providing a purely syntactic solution to the interpretation of 'implicit arguments'⁵ by using case theory and the projection principle in the framework of GB Theory. Ch. IV contains three interesting papers on RT, the one by Wilson

tral cognitive system. (iii) Chomsky (1986: 14) denies the Fodorean dichotomy between input and central systems.

² In SS, there is no mental representation as postulated in RT and GB theories in that meaning is viewed as being located in the interaction of living things and their environments. (See Barwise & Perry (1983: x) for their 'ecological realism'.)

³ In SS, the context of use can be seen as the discourse situation, speaker's connections and resource situations. But *it is unclear why we can fix certain facts (or parameters cf. Engdahl (this volume)) about the utterance.*

⁴ According to this analysis, (i) and (ii) can be analyzed as (i') and (ii') respectively.

(i) Whose mother loves *him*?

(ii) Whose mother does *he* love?

(i') [_S][who₂][e₂'s mother]₃][e₃ loves him₂]

path (e₂) = {NP₃, NP₃}

path (him₂) = {VP, S, S', NP₃}

path (e₃) = {S, S'}

(ii') [_S][who₂][e₂'s mother]₃][he₂ loves e₃]

path (e₂) = {NP₃, NP₃}

path (he₂) = {S, S', NP₃}

path (e₃) = {VP, S, S'}

(ii) violates the path condition, and so is ill-formed, while (i) is well-formed, since none of the paths overlap.

But *this analysis cannot seem to answer the question why overlapping of paths makes the utterance unacceptable* and so we have to discuss this problem from a cognitive point of view.

⁵ Kempson (1988: 418) provides some counterexamples to Brody and Manzini's case-based syntactic explanation.

and Sperber dealing with *interpretive*⁶ representation, which is claimed to capture the relation between various types of utterances and the language of thought.⁷ The paper by Carston points out the difference between *explicatures* and implicatures and the fact that many so-called generalized conversational implicatures (GCIs) and the alleged temporal and causal implicatures of AND can be handled at the level of explicatures rather than implicatures. The paper by Blakemore discusses some problems with constraints on relevance mainly by using data on *so*, whose function is “to guide the interpretation process by imposing a constraint on the inferential computations a proposition may enter into” (p. 185). Ch.V is a revisionist attempt by Kempson to use RT to explain why principles of Universal Grammar (UG) such as the principle of full interpretation should be postulated in GB theory and to construct a ‘licensing grammar’ (cf. Kempson (1990)) in which principles such as binding theory, which were originally proposed in GB theory, are actually implemented outside the grammar by using RT.

2. RT and Mental Representations

Probably it is the most difficult problem in all sciences to represent what goes on inside our heads. The whole area of research in linguistics, cognitive psychology, philosophy and artificial intelligence is still rich in conflicts even over the most fundamental issues such as the nature of concepts,⁸ inferences⁹ and the distinction between semantics and pragmatics.

2.1. Basic Assumptions of RT

Before going into the main topics in this review article, we must first look at some basic assumptions of RT.

(i) Human beings have an internal conceptual representation system or ‘language of thought’ (Fodor (1983)). A mental representation can be used

⁶ Smith (1990) interestingly analyses certain ‘present tense’ uses as interpretive.

⁷ Fodor’s claim of a ‘language of thought’ is still criticized by some papers such as Churchland and Churchland (1990).

⁸ Jackendoff (1990: 39–40) strongly attacks Fodorean noncompositional lexical concepts.

⁹ Sperber and Wilson (1986: Ch. 2) claim that all the deductive rules used in information processing are *elimination* rules, but Gazdar and Good (1982) have argued that this claim is too restrictive. (Sperber and Wilson (1986: Ch. 2) provide arguments against Gazdar and Good.)

descriptively (i.e. to describe a certain state of affairs) or interpretively (i.e. to interpret a certain thought) (cf. p. 133).

(ii) The task of 'linguistic semantics' is to translate natural language sentences into (incomplete) representations in this language of thought called 'logical forms'¹⁰ (cf. pp. 177-178). Linguistic semantics is modular, code-based and belongs to the 'input system' of the mind.

As an example, (1a) can be translated into the logical form (1a'):

(1) a. Mary: *You shouldn't*. -p.133

b. Peter: *Shouldn't I?*

(1a') *X (=addressee) shouldn't do Y (=action) at Z (=time).*

(iii) These incomplete conceptual representations (e.g. (1a')) are 'pragmatically enriched' into 'fully propositional forms', which represent determinate 'states of affairs', and are thus capable of being true or false.¹¹

For instance, (1a) can be pragmatically enriched into the following fully propositional form:

(1a'') *Peter shouldn't smoke when Mary is present.* -p.134

Possible implicatures of (1a) are as follows:

(1a''') (i) Mary wants Peter to stop smoking.

(ii) Mary is displeased with Peter ...

Pragmatics is non-modular, non-code-based, affected by contextual information and belongs to 'central system' of the mind. Thoughts as private, or mental representations are the bearers of truth conditions.¹² Propositions are psychological (or mental) representations and inferences are psychological computations performed over those representations.

(iv) The task of 'semantics of mental representations' (p. 134) is to relate propositional forms (i.e. mental representations which are inside the head) to the states of affairs they represent (which are outside the head)¹³ (cf. p. 176).

(v) The aim of communication in general is to increase the mutuality of cognitive environments and thereby the similarity of thoughts, rather than

¹⁰ Chomskyan LF is a level of the grammar at which certain conditions hold. RT's Logical Form employs the vocabulary of the central system (concepts) and is an incomplete representation in the language of thought. -cf. Kempson (1988: 394)

¹¹ Chomsky considers the real semantic relation between linguistic expressions and objective entities in the world to be outside of the grammar. -cf. p. 5

¹² In traditional truth-conditional approaches, truth conditions are wrongly said to be given to natural language sentences (e.g. (1a)) not thoughts (e.g. (1a')).

¹³ *The strong argument against putting truth-conditional semantics inside the head* (cf. Johnson-Laird (1983)) is that it would lead to an infinite regress so that it cannot capture our intuitions that thoughts represent states of affairs in the world.

to guarantee a strict duplication of thoughts.—Sperber and Wilson (1987: 706)

(vi) Most morphologically simple words correspond to simple, and non-decompositional concepts (Fodor (1983)). Concepts are triples of (possibly empty) entries, i.e. logical, lexical and encyclopaedic entries. —Sperber and Wilson (1987: 702)

2.2. Principle of Relevance

Relevance and the maximization of relevance is the key to human cognition and communication. *Contextual effects* result from adding new information to old information, and may be of three types: adding contextual implications, strengthening previously held assumptions, and eliminating weaker assumptions (cf. p. 186). The amount of processing effort will depend mainly on two factors: (i) the linguistic and logical complexity of the utterance itself, and (ii) the size and accessibility of the context used. — Wilson (1990a) *Utterance interpretation* involves recovering a combination of (i) proposition(s) explicitly expressed, (ii) a context, and (iii) a set of contextual effects obtained by processing that proposition in that context. A *context* is a psychological construct, a subset of the hearer's beliefs and assumptions about the world including beliefs and assumptions about the speaker. *The principle of relevance* is 'an exceptionless generalisation about human communicative behaviour'. An utterance is *optimally relevant* iff (a) the cognitive effects the speaker intends the stimulus to have are sufficiently great to make it worth the hearer's while to process it and (b) the stimulus is the least costly in terms of processing effort that the speaker could have chosen to achieve these effects.

2.3. The Framework of RT-cf. Wilson (1990a)

RT can be diagrammed as follows:

3. Some Extensions of RT

3.1. A Truth-Conditional Connective AND and Relevance

Most pragmatists working in the Gricean framework have adopted the view that “any pragmatically determined aspect of utterance interpretation is necessarily an implicature” (p. 163) and that pragmatics is “meaning minus truth conditions”, so they can analyse (2) as follows:

(2) She gave him her key *and* he opened the door. –p. 158

What is said:

(2a) [she gave him her key]_p & [he opened the door]_q

What is implicated:

(2b) p occurred *before* q

This alleged implicature (2b) comes from the Gricean maxim of manner (‘Be orderly.’).

The serious problem with this account is that “the alleged implicatures of conjoined utterances fall within the scope of such logical operators as negation, disjunction, comparison and conditionals”.

(3) It’s better to meet the love of your life *and* get married than to get married *and* meet the love of your life. –p. 172

If *and* is simply truth-functional and the temporal and causal connotations are captured by implicatures, then (3) should be contradictory (equivalent to ‘It’s better to X than X’). However, (3) is not understood as contradictory, and so *the alleged implicatures* like (2b) *contribute to the truth conditions of the utterance in which they occur*. So this evidence shows that pragmatics contributes to truth conditions, hence the distinction between semantics¹⁴ and pragmatics is circular in their analysis.

3.1.1. Carston’s *Explicature* Analysis

Carston rejects an implicature analysis shown in (2b) and postulates the level of explicatures introduced by Sperber and Wilson to explain the underdeterminacy of natural language truth conditions.

(2) c. She₁ gave him₂ [her₁ key]₃ at t and he₂ opened the door at t+n using [the key]₃ –p. 161 [Explicature]

Carston interprets (2) as (2c) at the explicature level. Temporal and causal connotations of conjoined utterances are recovered in the *pragmatic*

¹⁴ For detailed arguments against a semantic ambiguity account of AND, see Carston (1991).

enrichment of linguistically encoded logical forms.

A number of criteria are set up and tested by Récanati (1989) in an attempt to find a general answer to the question of qualifying (2c) as an explicature not as an implicature. Carston adopts *the scope principle* to identify explicatures (cf. Récanati (1989: 325)). In RT, a proposition communicated by an utterance is (a) *an explicature* iff it is (i) the proposition expressed by the utterance, (ii) the result of embedding this proposition within some more complex conceptual representations (e.g. a propositional attitude description); (b) otherwise it is *an implicature*.

3.1.2. AND and TEMPORAL Reference Assignments

Carston (p.161) asserts that “the temporal ordering of the events described in conjuncts is thus treated as a *by-product of the reference assignment process* involved in determining the explicature”.

3.1.3. PROBLEMS

At least three problems could be pointed out in the above analysis by Carston. One problem with this explicature analysis is that Carston’s explanation of the reference assignment process is not clearly described. It seems to me that there are at least five logically possible temporal reference assignments, i.e. Forwards, Backwards, Simultaneous, Containment and No ordering.¹⁵

The following examples exemplify each type of temporal reference assignment.

- (3) He handed her the key *and* she opened the door. [Forwards]
<He handed her the key at t and she opened the door at $t+1$.>
- (4) She did her BA in London *and* she did her A-levels in Leeds.
–Carston (1991) [Backwards] <... at t and ... at $t-1$ >
- (5) Mary was in the kitchen *and* she was listening to the radio. –p. 159 [Simultaneous] <... at t and ... at t >
- (6) He fell into a deep sleep *and* dreamed that he was flying. –*ibid.*
[Containment] <...from t_1 to t_n and ... at t_α : $1 < \alpha < n$ >
- (7) Today I signed a contract with a publisher *and* had tea with an old friend. –Wilson and Sperber (1990b) [No ordering]

A SECOND problem is why (3) should be interpreted as Forwards rather

¹⁵ See Declerck (1991: 51–52) for a ‘simultaneous domain’ and ‘domain shifting’. (cf. Wilson and Sperber (1990b)).

than Backwards temporal relation as is shown in (3'):

(3') She gave him her key at *t* and he opened the door at *t*-1.

The forwards temporal interpretation seems to follow from a general cognitive schema, that is, <if *x* is handed the key, then *x* can open the door with the key.> In order to account for this problem, Carston should provide clear descriptions of cognitive schemas.

Schemas seem to be structured clusters of conceptual representations and can be roughly divided into two types: (a) Ready-made schemas (cf. Eysenck and Keane (1990: 275)) are *highly accessible* (e.g. *door-opening -with- a-key schema*). From such a schema, it should be possible to infer that the interval between the two events in (3) is very small and that normally 'handing the key' precedes 'opening the door'.

(b) No ready-made schemas:

(8) She gave him her handkerchief and he opened the door.¹⁶

In (8) there is no obvious ready-made schema relating the handkerchief and the door, but this makes sense if we can construct an assumption like 'policemen's investigation of the thief's fingerprints'.¹⁶

In (4) the hearer has to know the cognitive schema: A-level comes before BA; in (5) the listening to the radio can be simultaneously going on in the kitchen; in (6) during our sleep, we can dream.

A THIRD problem is that if the conjunct contains some perfect tense or future tense, it is quite difficult to specify the temporal reference assignment (cf. Récanati 1989: 301). More complex examples such as in (9) containing 'present perfect and future' should be examined in order to show how we can appropriately narrow down these temporal intervals in pragmatics.

(9) I've made a major breakthrough *and* I'll need your assistance.
 –Robert Zemeckis and Bob Gale, *A Screenplay: Back to the Future*, p. 5

As is the case of temporal reference assignment, we have a lot of causal schemas immediately accessible for use in utterance interpretation.

(10) Mr Jones has been insulted *and* he is going to resign. <Mr Jones is going to resign because he has been insulted.>

¹⁶ The idea of non-monotonic *default interpretation* (Levinson (1988: 21) is problematic here, because *stereo-typicality* or *prototypicality* (cf. Lakoff (1987)) cannot explain examples like (8).

3.1.4. AND vs. Non-Conjunctive Cases

Let us look at the following passage from Carston (pp. 159–160):

It seems that this must be the outcome of general properties of the mind rather than the meaning of *and*, since if we take out all the *ands* in the examples and put in instead a full-stop or a pause, we find ourselves making *exactly the same temporal and causal connections*. [Emphasis added]

3.1.5. Problems

The following three problems will arise from the above passage.

First, it disregards the difference between conjunctive and non-conjunctive uses.

According to Carston (1991)'s reanalysis of non-conjunctive cases, the dominant interpretation of the *non-conjunctive cases* is one in which the second sentence is taken as an *explanation* for the state of affairs described by the first.

(11) She screamed; he hit her. [CONSEQUENCE; EXPLANATION]
It seems to me that this proposal is interesting but too strong. (12) exhibits a counterexample to (11):

(12) Bill hit Mary. She left. [EXPLANATION. CONSEQUENCE]
As Moeschler (1989: 332) pointed out, the non-conjunctive use (e.g. (13)) is *primarily ambiguous*, and so Carston's characterization seems to follow from possible schemas relating two events.

(13) *John entered the room. Mary cried.*

Second, we have to ask whether the relation between time and causality can be characterised as a universal conceptual (or semantic) structure relation or only as a cognitive relation based on some cognitive schemas.

Temporal connectives such as UNTIL can be used to show some causal relation:

(14) He talked *until* he lost his voice.

The first conjunct in (14) is considered to be the cause, and the consequence is the second conjunct.

The explicature of (14) can be described as follows:

(14') [He_i talked for some period from t_i to t_n] until [he_i lost his_i voice at t_n]

The causal interpretation in (14) seems to come from a cognitive assumption: <If x talks too much, then x loses x's voice.> We can conclude, therefore, that causal interpretation can be reached by using some cognitive

assumptions or schemas rather than a universal conceptual (or semantic) structure relation between time and causality.

Third, there is a problem associated with the DOMAIN of RELEVANCE. According to Carston (1991), in conjunctive uses, the whole conjunction is a domain of relevance, while in non-conjunctive uses, each separate utterance is a domain of relevance. This kind of observation should be extended in order to cover other uses as follows (e.g. (15)):

- (15) Because in 60 days, June first, we take possession of the plant. And on that day, and not until that day, will the mystery car, the car of the century, be unveiled. –Arnold Schulman and David Seidler, *A Screenplay: Tucker*, p. 25

3.2. Discourse Connectives *SO*, *AFTER ALL* and Relevance

According to Grice (1989: 362), *so* and *therefore* are used to perform the speech-act of explaining. For example,

- (16) a. The sun is shining. b. *So* I'm happy.

can be analysed as

- (16') The sun is shining. *This explains why* I'm happy.

There are some insufficiencies of this analysis: (i) there's no clear distinction between *so* and *therefore*; (ii) it cannot explain the data in which the premise is given not by some utterance but by some *visual perception* (e.g. Situation: The speaker sees someone arrive home laden with parcels. Utterance:

- (17) *So* [?*Therefore*] you've spent all your money. –p.189)

3.2.1. Blakemore's Analysis

Blakemore (pp. 188–189, p. 194) clearly describes some major differences between *so* and *therefore*: (i) Unlike *therefore*, *so* is not always associated with proof on justification; (ii) “*so*, but not *therefore* can be used to indicate that the relevance of the proposition it introduces lies in the fact that it is a *contextual implication* of the first proposition”; (iii) *so* is often a less formal means of conveying the connection expressed by *therefore*; (iv) *so* contrasts with *therefore* in that it can be used to introduce a proposition which does not have a linguistic antecedent (e.g. (17)); and (v) the difference between *so* and *therefore* is provided by those situations in which a hearer is unable to see the significance of what someone has said. The typical response is ‘*So?*’ or ‘*So what?*’ –but never ‘**Therefore?*’

3.2.2. A Problem with SO THEREFORE

A problem encountered here is to show how we are to explain the cooccurrence of 'so' and 'therefore' in some spoken data.

Blakemore's analysis nicely predicts and explains why *so* and *therefore* can cooccur. These two words function differently but there is some kind of 'cognitive harmony' between the two. RT can capture this kind of cognitive harmony by characterizing 'so' as procedural (or computational)^{17, 18} and 'therefore' as conceptual in some examples.

- (18) It was to do with the fact that if Britain lost the Falkland Islands, they would lose British soil nearer to Antarctica than Argentinian soil. *So therefore*, Britain had to hang on to the Falklands in order to have a claim on Antarctica. –*English Journal*, June 1988, p. 175

3.2.3. Problems with AFTER ALL

In relevance-theoretic terms, 'so' introduces a *conclusion* derived as a contextual implication, while 'after all' introduces a *premise* which achieves relevance by strengthening an existing assumption.

This analysis cannot account for all the examples containing 'after all' that I have gathered here. Blakemore (p. 183) only deals with one kind of 'after all' as is shown below: The proposition that he is an Englishman is suggested to be a *consequence* of the proposition that he is brave.

- (19) *He is an Englishman; he is, after all, brave.* –p. 184

The following examples will pose a problem for Blakemore's analysis of 'after all'.

(i) In the first use of *after all*, ALL is typically spoken with greater prominence and *after ALL* typically appears in initial position. The sentence begun with *after ALL* tells why the speaker said the preceding sentence. –cf. Schourup & Waida (1988: 16–19)

- (20) "And now I am going to have a drink. *After all*, this started out as a reception." –Richard Martin Stern, *The Tower*, p. 230

(ii) In the second use of *after all*, prominence typically falls on AFTER

¹⁷ So is normally *procedural* in that it encodes information about computations and lacks our direct access to the information it encodes. But the following *sos* can be characterised as *conceptual* in that they encode a concept and can be brought to consciousness: (i) 'do so' in the Pro VP, (ii) the manner adverbial 'so', and (iii) 'and so'. –cf. p. 183

¹⁸ See Blakemore (p. 190) for a full account of the causal meaning of 'so'.

and *AFTER all* normally occurs at the end of a sentence, and is used when one thing is expected, but the opposite thing occurs. –cf. Schourup & Waida (1988: 20–21)

- (21) Finally, I met a man a year ago who said he wanted to marry me. I got divorced and thought finally I would be happy. But the week the divorce came through he told me he didn't want to marry me *after all*. –*Barnet and Finchley Independent*, March 7th, 1991

(iii) The third use of AFTER ALL, which is fairly unusual in American English, has a basically literal meaning: "After everything". –cf. Schourup and Waida (1988: 21–22)

- (22) He may be a bit strange, but *after all* we like him just the way he is.

Blakemore's analysis of 'after all' is certainly superior to the Gricean one, but her analysis seems to be insufficient in that these three kinds of 'after all' work quite differently from the cognitive point of view.

The problem which has not been discussed by Blakemore is the distinction between these three types of AFTER ALL. It seems reasonable to suggest that the first one is characterised as a *REMINDER USE* and the second one as a *DENIAL OF EXPECTATION USE* in addition to using the 'Consequence-Premise' logical relation. The third one, by contrast, is a literal and conceptual use, meaning 'after all is taken into account.'

- (20') Context for interpreting the first sentence in (20):

(i) *If this started as a reception, then I am entitled to have a drink.* [=PREMISE-CONSEQUENCE relation]

REMINDER:

(ii) *You already know that this started as a reception.*

The second sentence followed by *after all*:

(iii) *This started as a reception.* [= PREMISE]

Contextual effect: *I am entitled to have a drink.*

In short, the first use is the one followed by a premise (iii) which achieves relevance by strengthening an existing assumption (or context) (i) as is discussed by Blakemore. In addition to this, the first type must contain the hearer's cognitive precondition (ii). (cf. Higashimori (1992))

Roughly speaking, in (21) *after all* introduces new information (*I would not be happy*) and eliminates the previous implication (*I would be happy*). That is, the proposition associated with the second type of 'after all' negates or implies the negation of a proposition which the speaker assumes

the hearer to have derived as a contextual implication from the previous utterances.

The third type of ‘after all’ can be analysed as a denial of expectation use in that in (22) the first conjunct implies ‘we don’t like him (if he may be a bit strange)’, but the proposition followed by ‘after all’ asserts that ‘we like him’.

3.2.4. Some Other Problems

Closer inspection of the following data reveals that some clarification is necessary for the terminology of ‘conclusion (consequence, result)’.

First, it is necessary to consider the cognitive difference between ‘so’ and ‘then’. (cf. Wierzbicka (1986: 104))

- (23) But if you’re a Scottish Lord, *then* [*so] I am Mickey Mouse.
–Jeffrey Boam, *A Screenplay: Indiana Jones*, p. 35

So refers to immediate, audible or perceivable evidence. It cannot be used in more hypothetical contexts like (23). Blakemore does not give any explicit description of these differences within the theory she develops. My proposal is that ‘so’ introduces *a conclusion based on some concrete evidence* derived as a contextual assumption in relevance-theoretic terms, but ‘then’ introduces *a conclusion based on some hypothetical reasoning*. It follows from the above consideration that the characterization of ‘conclusion (consequence, result)’ must be revised in some way.

Now let us look at the cooccurrence between AND/BUT and SO/AFTER ALL.

- (24) *She passed the French exam *and after all* she is a native speaker. –Carston (1991)

From the example (24), Carston says that ‘and after all’ is impossible, but ‘but after all’ is possible as we can see in (22).

Second, what is problematic here is to account for the difference in acceptability between (24) and (25), both of which contain ‘AND ... after all ...’.

- (25) I think so. We’re in the same city now. I’ve indicated that I’m receptive to an offer, I’ve cleared the month of June. *And I am, after all*, me. –Kevin Wade, *A Screenplay: Working Girl*, p. 24

We also have to explain the cooccurrence of ‘so’ and ‘after all’ in the example (26). Thus, the relation between ‘AND/BUT + SO/AFTER ALL’ needs further consideration.

- (26) The p & ifp leader paused, breathing heavily, then added, ‘So

maybe solar energy will get here first *after all*, Mister Goldman. Because let me tell you, you won't get those coal-burning plants.' –Arthur Hailey, *Overload*, p. 220

3.3. Rhetoric and Relevance

3.3.1. Basic Assumptions—(cf. p. 133, p. 152)

Interpretive representation has not been seriously examined in modern semantics and pragmatics, but every utterance is, at the most basic level, interpretive, and only at the next level is it interpretively or descriptively used. The notion of an interpretation—i.e. of a representation in virtue of *resemblance in content*—is the most fundamental one in pragmatics. In RT, *literalness* is just a special case of *interpretive resemblance*. Literalness = identity of shared implications. Interpretive resemblance can be defined as follows: the more shared implications, the greater the interpretive resemblance.

3.3.2. Metaphor

Let us first consider the following example.

- (35) 1989/90 was *a roller coaster* of a year for Barnet Council's education service. Everything seemed to be changing with increasing speed and at every stage a very tight grip had to be kept on the situation. Yet as the year rolled to an end it could be clearly seen as one of achievement. —London Borough of Barnet, *Annual Report of Financial Review 1989/90*, p. 4

According to Grice, (35) involves a flouting of the first maxim of quality, with the resulting 'conversational implicature' that

- (35') 1989/90 was like a roller coaster

The problems with Gricean analysis is that (i) it cannot explain the difference between the metaphorical utterance (35) and its literal counterpart (35'); (ii) there is no clear description of how we can reach the metaphorical interpretation and of how we can distinguish metaphor from other floutings of the same maxim, such as irony; (iii) ordinary language is pervaded with metaphors which speakers do not consider literally false; and (iv) Gricean maxims explicitly govern social, co-operative behaviours, and have no obvious analogues in thought. Yet much thinking is metaphorical too. —cf. p. 145

3.3.2.1. Metaphor and RT

(i) In RT, metaphors are based on *fundamental and universal psychological mechanisms*, and are ordinary exploitations of basic processes of verbal communication—Sperber and Wilson (1990: 150, 154); (ii) metaphor involves an interpretive relation between propositional form of an utterance and the thought it represents—Sperber and Wilson (1987: 707–708); (iii) metaphor and irony exploit quite different basic processes and are more closely related to other forms of speech—the former to loose talk (*loose use*, i.e. proposition expressed merely resembles a thought of the speaker's), the latter to a variety of *echoic uses*—than to one another; and (iv) in RT, there is no need to assume that language itself is essentially metaphorical (cf. Lakoff and Johnson (1980))¹⁹—merely that loose use is the norm.

Consider the following two examples (36) and (38). According to Wilson and Sperber, an utterance (36) can be interpreted as (36') by using the nondemonstrative inference and cognitive schemas such as (37):

[Situation: Peter has lent some money to Bill on the understanding that he will get it back later in the week. He wonders aloud to Mary whether Bill will keep his word; Mary replied as in (38).]

(36) He's an officer and a gentleman.²⁰—p. 143 [Utterance]

(37) If x is an officer and a gentleman, then x is trustworthy/x will repay the debt by the appointed date/his cheque will not bounce. [Cognitive schemas]

(36') Bill is trustworthy/ Bill will repay the debt by the appointed date/Bill's cheque will not bounce. [Weak implicatures] —pp. 143–144

(36) can be characterized as a creative metaphor because of its wide variety of weak implicatures shown in (36'). According to Sperber and Wilson (1986: 236), “the wider the range of potential implicatures and the greater the hearer's responsibility for constructing them, the more poetic the effect, the more creative the metaphor.”

¹⁹ Lakoff considers a metaphor as the result of superimposing the meanings of the source and target domains. For other theories of metaphor, see Jackendoff and Aaron (1991: 321).

²⁰ (36) can also be used descriptively.

3.3.2.2. Problems

Thus far, we have touched upon some basic assumptions on metaphor in RT, but it is not clear how idiomatic expressions like (38) and slang expressions like (39) can be distinguished from metaphorical expressions in RT. If they belong to the same category 'metaphor', is the traditional terminology 'metaphor' enlarged in some way in RT?

(38) And a radio station is *small potatoes*. –A Screenplay: *Working Girl*, p. 40

(39) Bob seemed very pleased. "He said that? Wow. He's not the kind to pass out compliments. Thanks, Doralee. You're a *peach*." –Thom Racina, *Nine to Five*, p. 107

The next problem is how to explain 'semantic change' phenomena in RT. According to Williams (1976: 463), some sensory term (e.g. taste words such as *sweet candies*) can be metaphorically used for another sensory term (e.g. sound words such as *sweet music*). These sensory terms can also be used for some mental conditions. Why is it possible for us to say 'John is *sweet*'? Is there any conceptual (or semantic) structure connecting sensory terms with mental conditions? Or does the lexical item 'sweet' have more than one 'language of thought' representation, i.e. [having a taste like that of sugar], and [gentle in manner]? In other words, are we dealing with polysemy or metaphor? In short, 'semantic change' (e.g. (40)) requires some further explanations in RT.

(40) The Corellian gave Luke a *sour* eye but said nothing.
–George Lucas, *Star Wars*, p. 135

3.3.3. Irony and Echoic Interpretive Use²¹

- (41) a. He is an officer and a gentleman.
b. He is *not* an officer and a gentleman.

Traditionally, irony is defined as a deviation from the norm and ironical utterances say one thing (e.g. (41a)) and mean the opposite (e.g. (41b)). –cf. p. 146, Grice (1975: 53)

The problem with this analysis is that violation of the maxim of truthfulness is in fact neither necessary nor sufficient for ironical interpretation. It is not necessary because of the existence of *ironical questions* (e.g. "Did you remember to water the flowers?" [said in the pouring rain])/ *ironical understatements* (e.g. "It seems to be raining." [said by someone caught in

²¹ See Jorgensen *et al.* (1984) for the empirical research on echoic mentions.

a downpour)]/*ironical quotations* (e.g. “When man is tired of London he is tired of life.” [said in a cold, wet, windy English spring)]/*ironical interjections* (e.g. “Ah! Tuscany in May!” [Tuscany in May, you write, is the most beautiful place on earth. I arrive in a freak cold spell, wind howling, rain lashing down and say “Ah! Tuscany in May!”]);²² and (vi) the traditional view suggests that ironic utterances should take *longer* to comprehend than corresponding literal statements because of the additional mental effort required to reconcile the apparent violation with what a speaker actually means. But *experimental research* (Gibbs and O’Brien (1991: 524–525)) demonstrates that readers take no longer to interpret ironic uses of remarks than they do to comprehend the same sentences in literal contexts.

3.3.4. Wilson and Sperber’s Analysis of Verbal Irony

(i) Verbal irony is both natural and universal; (ii) it can be expected to arise spontaneously without having to be taught or learned; and (iii) irony is a variety of echoic utterance, used to express the speaker’s attitude to the opinion echoed. Verbal irony invariably involves the expression of an attitude of disapproval (e.g. Mary’s reaction to the thought she echoes in (42B)).²³

(42) A: Peter: Ah, the old songs are still the best.

B: Mary (contemptuously): *Still the best!* –p. 145

3.3.5. Problems

Let us finally just touch upon some problems concerning irony.

First, RT only deals with ostensive (= intentional)-inferential communication, but Gibbs and O’Brien (1991: 529) say that people actually viewed the *unintentionally* ironic statements as being *more ironic* than were the intentionally ironic statements. (cf. Sperber and Wilson (1986: 50–54)) Thus in RT, the relation between ‘unintentional expressions’ and irony must be considered in some way.

²² Some of these ironical utterances do not express complete propositions; hence they cannot be true or false, and cannot be usefully analysed as deliberate violations of a maxim of truthfulness.

²³ There are other accounts of irony such as (i) speech act analysis; (ii) a computational model; (iii) Kawakami (1984)’s analysis of irony as the disparity of two recognitions on the basis of the structure of ‘falsehood’, and (iv) the pretense theory. But all of these cannot seem to explain the ironical understatements, questions, quotations and interjections which can be nicely captured by RT.

A final problem is whether 'echoic' use is always necessary for ironic interpretation. In (43), irony resides in the absurd implicit assumption that you need to have been to college in order to recognise when someone is speaking English (cf. Higashimori (1992)). So only the speaker's disapproving attitude rather than 'echoic' use seems to be necessary for the ironic interpretation.

(43) Department sales manager: "Well, sir, we've been trying to explain to her (=Miss Liberty) that it's closing time, but she doesn't seem to understand."

Allen: That's because she doesn't speak any English.

Miss Liberty: Hallo, Allen. How was your day?

The Manager: Excuse me, *I never went to college, but wasn't that English?* –Ian Don, *Splash*, p. 58

4. Concluding Remarks

I have argued that Carston's explicature analysis throws a fresh light on 'truth-conditional semantics' and that we have to study cognitive schemas thoroughly in order to characterise 'temporal reference assignment' and 'non-conjunctive use'. I have further argued that additional support is given for Blakemore's analysis if her analysis can be extended to account for the three different types of AFTER ALL. Another problem I have considered is how to characterize metaphor and irony. In RT, what is implicitly conveyed in verbal communication is generally *weakly communicated*. I have shown that the problems concerning 'idiomatic and slang expressions', 'semantic change' and 'unintentional ironical statements' can be fruitfully considered in the framework of RT.

It seems to me that RT has further applications: (i) the notion of relevance can provide a reasonable account of discourse understanding without the notion of 'coherence' (Blakemore (1988: 236)); (ii) explicature analysis is also useful for 'implicit elements' (e.g. the adjectival interpretations of the author's or the reader's feeling in the examples such as *angry book* and *sad book* (Lehrer (1990: 217))); (iii) interpretive use can also be applicable to 'fuzzy' concepts (i.e. *interpretively* used concepts); (iv) the metonymic relation (e.g. (44)) is also explicable by using the part-whole reference assignment and some cognitive schemas or assumptions showing the part-whole relation (cf. Deane (1988), Yamanashi (1988)):

(44) 'Look-a couple of years ago, my mom and dad got on that big

Game Show. Remember, Brand? Mom spent a month makin' those funny costumes. *She was a giant egg. Dad was a frying-pan.*' –James Kahn, *The Goonies*, p. 94

Finally I find it especially regrettable that this volume neglects some other cognitive theories such as Fauconnier (1985)'s 'mental space theory' in which the intermediate cognitive level between language and a real or metaphorical world is postulated, Langacker (1983)'s 'cognitive grammar' or 'space grammar' and Lakoff (1987)'s 'cognitive semantics', which is based on 'topological psychology' and prototype theory. (See Eysenck and Keane (1990: 269) and Barsalou (1987:106) for the strong criticism of the prototype-based approach.)

There are some misprints : p.23/4 line grammer → grammar; 36/-15 wants out → *wants out*; 39/7 read → reads; 51/25 *John saw Mary and Mary say John* → *John saw Mary or Mary saw John*; 51/-10 *It is not true that S describes situations* → *It is not true that S describes situations*; 66/23 a NP → an NP; 73/20 b: I → b; I; 97/-20 its₃ architecture → it₂ architecture; 98/-3 him₂ → him₃; 145/-7 Bill → Peter; 148/1 forthcoming → 1988; 149/12 Sperber & Wilson (forthcoming) → Wilson & Sperber (1988); 151/6 forthcoming → 1988; 166/17 [he's]₁ → [he]₁'s; 188/-15 therefore → *therefore*; 194/27 (22) → (21); 200/13 a hypotheses → a hypothesis; 204/1 (16) That Mary's at home is annoying. → (16) That Mary's not at home is annoying.

Despite the insufficiencies mentioned above, I have no doubt this book is an important work for cognitive linguistics.

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