

## Modulation in Comprehension : Relevance- theoretic View

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# Modulation in Comprehension:

## Relevance-theoretic View

Takahiro Otsu

### 1. Introduction

Most pragmatic research has discussed how a speaker's meaning or implicature is recovered from sentence meaning via context. Sentence meaning is so schematic or incomplete that it must be contextually completed or inferentially enriched in order to yield a fully expressed proposition that can be judged as true or false. On the other hand, a speaker's meaning or implicature is the one that the speaker intends to communicate by uttering a sentence in a particular situation. A single sentence may convey a lot of different speaker's meanings when it is uttered on different occasions. Human comprehension involves a process that modulates various types of gap between speaker and addressee. We may think that modulation is seen when sentence meaning is completed as a full proposition and when from the full proposition a speaker's meaning or implicature is recovered.

However, considering the relevance-theoretic comprehension procedure, as in (1), modulation in human comprehension involves more than the completion or enrichment of the speaker's meaning.

- (1) Follow a path of least effort in computing cognitive effects:
  - (a) Consider interpretations in order of accessibility.
  - (b) Stop when your expectation of relevance is satisfied.

(Wilson 2000: 420-421)

Utterance interpretation continues until the expectation of relevance is satisfied (i.e. cognitive effects are achieved at an optimal relevance level). This indicates that the expectation of optimal relevance is a cognitive matter. Thus, various types of comprehension gap are modulated on various stages after the sentence meaning of the utterance is decoded. In this article, I first attempt to

clarify the concept of “modulation” referring to and comparing with the speech-act term “regulation” proposed by Kubo (2014). Second, I classify comprehension gaps into particular gaps: semantic, pragmatic, and cognitive, and examine how these different types of gap are modulated in the process of utterance interpretation.

## 2. Modulation

Kubo (2014: v, 82) proposes a concept “regulation,” an innate ability in which people attempt to escape from an unstable psychological state caused by some reality and recover a stable psychological state (a psychologically balanced state). In the challenging speech act theory, he defines this act in conversation as “regulatory act” and claims that “regulation” is an essential concept even when we explain how a nonverbal information transmission act is performed. One important suggestion of his speech act theory is that regulatory act or regulation is performed by both the speaker and the addressee. These regulatory acts accompany illocutionary acts in two ways: “self-regulatory act” in which the speaker regulates her own psychological state and “interpersonal regulatory act” in which the speaker regulates her own psychological state or asks for the regulation of the addressee’s psychological state in her relation with the addressee (p.83). Taking “promise” for example, the relevant regulatory act is an interpersonal regulatory act responding to the addressee’s requests and a self-regulatory act preparing for the burden regarding promising, by which a perlocutionary act such as pleasing the addressee is performed (p.221). For the illocutionary act of order to perform a perlocutionary act of making the addressee conduct the order, on the other hand, it involves an interpersonal regulatory act in which the addressee shows an allegiant attitude towards the speaker, as well as a self-regulatory act in which the speaker exhibits superiority (pp.221-222).

From an early stage, Relevance theory has pointed out some difficulties in assigning every utterance to a particular speech-act type. From a relevance-theoretic viewpoint, speech acts are divided into 3 types. The first category of speech acts is an institutional speech act—such as promising or thanking (similar to the institution of bidding)—whose performance needs the identification of speech act in a society that has such practices. But most of speech acts—the second and

third categories—are performed successfully without being identified as speech acts. The second category includes a speech act such as predicting, asserting, denying, threatening, suggesting, claiming, demanding, warning, etc. (Sperber and Wilson 1986/1995: 244-246). When we interpret example (3),

- (3) The weather will be warmer tomorrow.  
(Sperber and Wilson 1986/1995: 245)

we do not need to identify it as predicting. This utterance is understood as predicting only when it derives an implicature “The athletic meet is sure to be held tomorrow as scheduled” by combining a contextual assumption “If tomorrow is warmer, the athletic meet will be held.” The third category of speech act is “genetic speech acts” (i.e. saying, telling and asking). When we interpret example (4),

- (4) The bus is leaving. (Sperber and Wilson 1986/1995: 248)

the propositional form of the utterance constructs a higher-level explicature embedding a speech-act description, a propositional attitude description or some other comment on the embedded proposition. The description of example (4) can be relevant in various ways: e.g. an ordinary assertion, a report of speech or thought, an irony or dissociation, and so on (Sperber and Wilson 1986/1995: 248-249). The recovery of higher-level explicatures of the host utterance is also based on the inferential processes of utterance interpretation in a procedural manner (Murillo 2004: 2066). The interpretation of examples (4) that is consistent with the principle of relevance is the one the speaker intended to convey. Utterances are interpreted through the interaction between the form of the utterance, the addressee’s accessible contextual assumptions, and the principle of relevance (Sperber and Wilson 1986/1995: 249). Except for the speech acts that are institutionally prescribed, we cannot explain what kind of speech act the utterance can perform until its (higher-level) explicature is enriched or its implicature is derived. Thus, it is evident that Relevance Theory observes the understanding of utterances more adequately than speech act theory. Likewise, regulatory acts that accompany illocutionary acts may be recaptured by Relevance Theory.

Instead of “regulation”, my paper uses the term “modulation” in relation to various comprehension gaps that can occur between speaker and addressee. When people intend to interact with each other in human communication, its success can result from resolving a gap between the speaker’s communication and the addressee’s comprehension. In the Relevance-theoretic framework, the speaker intends to modify the addressee’s cognitive environment, the non-finite set of assumptions that are manifest to him at a particular moment (Carston 2002: 68). Those assumptions are not the thoughts the addressee actually holds, but rather any possible thought he can hold. Comprehension gaps are created by the discrepancy between the addressee’s cognitive environment and the speaker’s, and, therefore, the speaker intends to modify the addressee’s possible thoughts to conform to her own cognitive environment as much as possible in order to make the comprehension gap as small as possible.

### 3. Modulation in the Comprehension of Utterances

Human communication involves a variety of comprehension gaps between speaker and addressee. Comprehension gaps are likely to occur at every stage when the sentence meaning of the utterance is saturated to its (basic) explicature (fully explicated proposition), a higher-level explicature is constructed from the basic explicature, an implicature is derived from the combination of those explicatures and contextual assumptions, or fulfilling a communicative intention. Modulation is an interpersonal process between speaker and addressee, and, therefore, some types of modulation are speaker-oriented and some are addressee-oriented. But the process of modulating such gaps are geared to following the principle of relevance: i.e. achieving adequate cognitive effects with the least processing efforts.<sup>1</sup> In the following sections, according to those different

1 The principle of relevance is prescribed as follows (Carston 2002: 379):

1. First (cognitive) principle of relevance:  
Human cognition is geared towards the maximization of relevance (that is, to the achievement of as many contextual (cognitive) effects as possible for as little processing effort as possible).
2. Second (communication) principle of relevance:  
Every act of ostensive communication (e.g. an utterance) communicates a presumption of its own optimal relevance.

processes, I reorganize the examples that Relevance theory has been dealing with and classify the modulation process observed in those examples into semantic, pragmatic and cognitive.

### 3.1 Semantic Modulation

Sentence meaning is so incomplete that it can be judged as true or false until the meaning is completed as a fully expressed proposition (basic explicature) via pragmatic inferences. Various completions can be carried out in examples (5a-g), where the speaker's intended meaning of the words or expressions constructs the basic explicature of the utterance.

- (5) a. Mary wrote *a letter*. (*disambiguation*)
- b. The students told the teachers *they* wanted more time to play in the ground. (*reference resolution*)
- c. *Everyone* attended the Christmas party. (*scope of quantifiers*)
- d. John's face is *square*. (*ad-hoc concept formation*)
- e. I like *Mary's* shoes. (*saturation*)
- f. There were *100* people in the party. (*free enrichment*)
- g. He will be there tomorrow. (*illocutionary indeterminacy*)

In (5a), “written message” from at least two meanings linguistically encoded by “letter” is identified. In (5b), the most accessible referent of “they” is identified as “the students”, not “the teachers”. In (5c), the scope of the quantifier “every” is context-dependently limited to the scope of people who are entitled to the participants of the party. In (5d), the linguistically encoded concept “square” is adjusted into “squarish”, a concept that is comprehended ad hoc. In (5e), the possessive expression “Mary’s” is likely to express various relations to her shoes (e.g. the shoes Mary bought, the shoes she borrowed, the shoes she wears, etc.), but only one accessible interpretation is selected in a way the relation is obligatorily determined in a context. In (5f), the exact number 100 is actually comprehended as approximately 100 in a way the number is free enriched to the round number in a context. The comprehension of example (5g) needs pragmatic processes to construct a higher-level explicature of the utterance (e.g. bet, predic-

tion, warning, etc.) before it further derives an implicature.

Examples (5a-g) have a range of possible interpretations. The addressee is then supposed to choose one of those interpretations that the addressee has any reason to believe the speaker intends to convey on a particular occasion. Examples (5a-g) seem to be miscellaneous examples, but the process of modulation leads to constructing an explicature or a higher-level explicature of the utterance that include words and expressions in question. I define this type of modulation a semantic modulation.<sup>2</sup> In this process, the addressee is required to modify his cognitive environment by conforming his comprehension to the speaker's intended interpretation through a variety of pragmatic processes.

### 3.2 Pragmatic Modulation

After a sentence meaning is developed and completed as a full proposition, a further pragmatic process is involved in resolving the comprehension gap between speaker and addressee. Consider examples (6a-d), whose comprehension needs more than the completion of an explicature of the utterance.

- (6) a. Bill goes up to Scotland every weekend. (*conversational implicature*)
- b. Teacher: Have you handed in your essay?  
       Student: I've had a lot to do recently. (*indirect answer*)
- c. John is a computer. (*metaphor; irony*)
- d. It's getting dark. (*indirect speech acts*)

Examples (6a-d) involve a further pragmatic process in which a speaker's intended interpretation (i.e. the implicature of the utterance) is selected from a variety of possible interpretations on the basis of contextual assumptions after a fully expressed proposition (an explicature) is completed. Example (6a) may provide a variety of implicatures such as "Bill's mother is ill", "Bill has a

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2 It is theoretically reasonable to think that a semantic modulation is also pragmatic because pragmatic processes are also involved in the recovery of an explicature or a higher-level explicature. In my argument, the distinction between semantic and pragmatic in modulation is based on whether the process aims at completing a proposition as a minimal utterance unit or it aims at deriving an implicit meaning or an implicature.

girlfriend in Scotland”, “Bill gets as far away from London as he can when he can”, etc. in different contexts (Carston 2002: 110). In (6b) (taken from Sperber and Wilson 2002: 4), the student’s utterance is supposed to answer the teacher’s question indirectly. What it implies is that the student hasn’t handed in his or her essay yet. This implicature (implicated conclusion) is derived from the combination of the student’s utterance and other implicatures (implicated premises) that students neglect their studies by doing other daily affairs and that one component of their studies is submitting essays. In (6c), “John is a computer” can be a metaphor or an irony in difference contexts. As the answer to the question “Is John a good accountant?”, it implicates that he is a skilful accountant; as the answer to the question “Is John a good boyfriend?”, it may implicate an irony that he is heartless (cf. Wilson and Sperber 2012: 21-22). Likewise, example (6d) also produces a variety of implicatures, strong or weak, depending on contexts.

The process of modulation on these cases is also addressee-oriented in the sense that the identification of an implicature depends on the addressee’s more pragmatic abilities of using the most accessible contextual assumptions which provide evidence for reaching a certain implicated conclusion. Thus, I define this type of modulation as pragmatic modulation.

Semantic modulation and pragmatic modulation are sometimes conducted in parallel. Consider example (7).

- (7) Alan: Do you want to join us for supper?  
 Lisa: No, thanks. I’ve eaten. (Wilson and Sperber 2002: 602)

In (7), Lisa’s answer “I’ve eaten” is enriched into an explicature “Lisa has already eaten supper on the evening of utterance”. As for the reason why Lisa refused Alan’s invitation to supper, this explicature serves as a part of a strong implicature of Lisa’s utterance (e.g. “Lisa refuses Alan’s invitation to supper because she has already had supper that evening”).<sup>3</sup> When other implicated premises are given, Lisa’s utterance may provide weakly implicated conclusions (weak implicatures) (e.g. Lisa is suggesting having supper with Alan on another day).



### 3.3 Cognitive Modulation

Semantic and pragmatic modulations are the ones that the addressee is motivated to make in order to resolve a gap between sentence meaning and the speaker's meaning or implicature of the utterance. In principle, modulatory processes in human comprehension involve the interaction between speaker and addressee. Viewed in this way, there can be a speaker-oriented modulation in which the speaker attempts to modify the addressee's cognitive environment. Consider the use of discourse markers in examples (8a-d).

- (8) a. BRUCE Willis says he's given up trying to find love as his standards are too high. They can't be that high. He WAS married to Demi Moore, **after all**. (WB: NBA\_050320)
- b. Back in the deep end, we're coming round to the idea that "Dirt" isn't just about heroin. Maybe Alice In Chains are using heroin as a metaphor. **After all**, heroin has a long, proud history of being used that way. (WB: UKMAGS\_0088)
- c. And yet he could not make the breakthrough. And in the tie-break—well, I can hardly believe I am keying the words in here—Sampras lost by serving two successive double faults. **I mean**, this is Sampras, this is his serve, this is Wimbledon, this is the final. (WB: NB1\_050319)
- d. I think it is very important that the great majority of this faculty not only take some part of the accepted knowledge in their subject and teach it to youngsters but also are involved in promoting the growth of that knowledge. **In other words**, they're doing research as well as teaching. (WB: CT2937516)

In examples (8a-d), the discourse markers *after all*, *I mean* and *in other words* introduce an afterthought to the preceding statement for particular

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3 This pragmatic process is called mutual parallel adjustment, in which the enrichment of explicatures and the derivation of implicatures are arrived in parallel based on the relevance-theoretic comprehension procedure (cf. Wilson and Sperber 2004: 617).

purposes. In (8a), the speaker could have ended her speech by saying that Bruce Willis' standards on finding love cannot be so high, but she added some comprehensible reason—he was married to Demi Moore—for confirming his reasonable standards in the addressee.<sup>4</sup> The same kind of modulation is intended in the use of *after all* in (8b). The speaker attempts to make the addressee confirm the use of heroin as a metaphor in their second album “Dirt” or modify the cognitive environment of the audience who does not have the same view of heroin in the album. Reformulation markers *I mean* and *in other words* are also intended to be used for the speaker's modification of the addressee's cognitive environment. In (8c), the preceding utterance may have succeeded in conveying Sampras unexpected defeat in Wimbledon to the addressee. Nevertheless, the speaker attempts further modulation of the unexpectedness that the addressee feels about the tennis player's defeat. The reformulation marker *I mean* introduces several factors that help conform the addressee's unexpectedness to the unexpectedness that the speaker actually feels. In (8d), on the other hand, *in other words* reformulates the previous utterance that seems roundabout and indirect. Straightforward reformulation helps fix the speaker's intention of the previous utterance in the addressee's mind and thereby modifies his cognitive environment.

This type of modulation is somehow speaker-oriented because it is conducted for the fulfillment of communicative intention: i.e. ensuring that the intention of the utterance has been conveyed to the addressee. The speaker attempts to give evidence to and reformulate the previous utterance in order to modulate a cognitive gap by modifying the addressee's cognitive environment. This is not the modulation of gap in the interpretation of the utterance but the modulation of cognitive gap for the purpose of conforming the addressee's cognitive environment to the speaker's cognitive environment. Thus, I define this type of modulation as cognitive modulation.

#### 4. Conclusion

This paper attempted to investigate the modulation process of

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4 In example (8a), *after all* is postposed, but it has the same discourse function of marking evidence for the preceding statement, like the one in (8b).

comprehension between speaker and addressee. Modulation processes are classified into semantic, pragmatic and cognitive. Those three processes are constrained by relevance-theoretic comprehension procedure (i.e. in order of accessibility): enrichment of explicatures, derivation of implicatures, and fulfillment of communicative intention. Modulation is an interpersonal process between speaker and addressee. Semantic and pragmatic modulations are constrained by the addressee who attempts to conform his cognitive environment to the speaker's cognitive environment. Explicatures are enriched or implicatures are computed through the pragmatic processes that the speaker expects the addressee to follow. On the other hand, cognitive modulation is constrained by the speaker who attempts to modify the addressee's cognitive environment. Procedural linguistic expressions such as discourse markers seem to be more or less associated with some cognitive aspect (i.e. fulfillment of communicative intention). I would like to pursue this issue in future comprehensive research.

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