Relevance theory (ms. 313)

Francisco Yus

University of Alicante

Department of English Studies

Apartado 99

E-03080 Alicante (Spain)

ABSTRACT

Relevance theory is a cognition-centered pragmatic approach to human communication which is based on the hypothesis of a single evolved mental capacity of human beings: to search for the most relevant information from incoming stimuli. In order to achieve an optimal level of relevance, the human mind engages in a cost/benefit procedure intended to select, among the range of possible interpretations of the same stimulus in a specific context, the one (possibly) intended by the communicator. Relevance is a property of stimuli resulting from a positive balance between, on the one hand, the eventual interest that the stimulus might provide and, on the other hand, the mental effort required to process the stimulus.

1. INTRODUCTION

Relevance theory (henceforth RT), a cognitive theory of human communication by D. Sperber and D. Wilson (henceforth S&W), was fully described in their 1986 book (S&W, 1986, 2nd edition 1995), but it really emerged in the late seventies and early eighties as a cognition-centered alternative to Grice’s cooperation-rulled explanation of human communication (see W&S, 1981), and since then it has been a highly influential theory in pragmatics producing a good number of studies backing it up, criticizing it or applying it to different pragmatic research areas (see Yus, 1998; W&S, 2002a; and the bibliography on the theory available on the Internet: www.ua.es/dfing/rt.htm).

The main assumption of the theory is that human beings are endowed with a biologically rooted ability to maximize the relevance of incoming stimuli (linguistic utterances or nonverbal behavior). Relevance is not only a typical property of external stimuli (e.g. utterances), but also of internal representations and thoughts, all of which may become inputs for cognitive processing. Assessing relevance is a typical mental activity of human beings, always geared to obtaining the highest reward from the stimuli which they process. This biological endowment is the result of an evolution in the architecture and complexity of the human mind and part of a general human ability to metarepresent one’s and other people’s thoughts and intentions: “As a result of constant selection pressure towards increasing efficiency, the human cognitive system has developed in such a way that our perceptual mechanisms tend automatically to pick out potentially relevant stimuli, our memory retrieval mechanisms tend automatically to activate potentially relevant assumptions, and our inferential mechanisms tend spontaneously to process them in the most productive way” (W&S, 2002a: 254). At the same time, this endowment allows for the manipulation of other
people’s thoughts and allows us to predict what information is likely to be relevant to them and what interpretive steps might be involved in its processing.

2. BASIC CLAIMS
Four statements can summarize this theory: (a) the decoded meaning of the sentence is compatible with a number of different interpretations in the same context; (b) these interpretations are graded in terms of accessibility; (c) hearers rely on a powerful criterion when selecting the most appropriate interpretation; and (d) this criterion makes it possible to select one interpretation among the range of possible interpretations, to the extent that when a first interpretation is considered a candidate to match the intended interpretation, the hearer will stop at this point. These statements can be broken down into a number of basic claims which are summarized below.

2.1. Code versus inference
Unlike the so-called code model of communication, according to which messages are simply coded and decoded, S&W favor an inferential model in which decoding plays a minor role compared to the inferential activity of the interpreter. Within this approach, utterances are not automatically decoded; they are only pieces of evidence about the speaker’s meaning which often, if not always, underdetermine the literal meaning of the coded message. Communication involves the use of a code, of course (i.e., the grammar of the language), but inference plays a major role in turning the schematic coded input into fully propositional interpretations.

One of the most interesting contributions of RT is, precisely, the claim that there is a much wider gap between the (coded) sentence meaning and the (inferred) speaker’s meaning (see 2.2 and 3.1. below), which has to be filled inferentially. Comprehension starts at the context-free identification of the utterance’s logical form, which is then enriched to yield explicit information (explicatures) and/or implicit information (implicatures).

2.2. A post-Gricean theory
S&W acknowledge the inheritance of RT to Grice’s view of communication, but there are several aspects in which they disagree with Grice. This is the reason why we can call RT a post-Gricean theory (see Yan Huang, this encyclopedia), a theory which takes the Gricean inferential approach to communication as the starting point, as opposed to neo-Gricean theories which follow, more or less faithfully, Grice’s cooperative principle and its maxims. Several points deserve explanation:

1. One of the major contributions by Grice was to underline the role that intentions (roughly defined as mental representations of a desired state of affairs) play in human communication. His emphasis on the expression and recognition of intentions laid the foundations of the inferential model of communication. Crucially, for Grice the hearer explains the speaker’s communicative behavior by identifying the underlying intention, a typically human form of mind-reading activity. However, S&W do not agree on the complex schema of human reasoning which Grice pictured for the derivation of implicatures.

   S&W also point out that Grice’s emphasis on the role of intentions corroborates the fact that communication can exist without the need for a code. All that the communicator has to do in order to communicate a thought is to get the addressee to recognize his/her intention to convey it.

   S&W distinguish two levels of intention: informative (an intention to inform the hearer of something) and communicative (the intention to inform the addressee of that
informative intention). Normally, the former entails the identification of the latter, which is typically activated by verbal ostensive communication in which it is clear to both speaker and hearer (mutually manifest in S&W’s terminology) that the speaker has the (metarepresentational) intention to communicate the intention to inform the interlocutor of something. Effective communication involves both types of intention, unlike other forms of information transmission. Such effectiveness is only achieved via “ostensive inferential communication”, which is achieved by ostensively providing an addressee with evidence which helps him/her infer the speaker’s meaning.

2. RT explains the hearer’s inference of the (intended) speaker’s meaning from the coded sentence meaning by resorting to another central claim by Grice: that ostensively communicated utterances automatically generate expectations which activate the hearer’s search for the speaker’s meaning. But whereas Grice explained these expectations in terms of the assumption by hearers that speakers were observing the cooperative principle and its maxims, within RT these expectations are explained in cognitive terms (basically proposing the existence of a Cognitive Principle of Relevance, see 2.3 below), without reliance on a cooperative principle.

3. For S&W no maxims, in the Gricean sense, are required for the explanation of communication. This is especially evident in the case of the Maxim of Quality (roughly, “tell the truth”), which Grice proposed for the explanation of figurative language and irony. S&W have shown that people are normally loose when they speak and only on very specific occasions do they intend their utterances to be regarded as literally true. Besides, S&W propose that all loose uses of language (metaphor, hyperbole, etc.) can be addressed with a single explanatory framework based on general expectations of relevance.

2.3. Two principles of relevance
Initially, S&W proposed one Principle of Relevance to account for the fact that an act of ostension carries a guarantee of its eventual relevance, but in the Postface to the second edition of their book Relevance, S&W (1995: 260ff) acknowledge that we can consider the Principle of Relevance both in a broad cognitive sense (“human cognition tends to be geared to the maximisation of relevance”), and in a more restrictive communicative sense (“every act of ostensive communication communicates a presumption of its own optimal relevance”), the latter being the main focus of analysis within pragmatics. But the former is important too, since it stresses the fact that we are evolutionary geared towards the most relevant stimuli available. Besides, this evolved mechanism allows for a prediction of the mental states of others, which is crucial in human communication.

The communicative principle is based upon two clauses: (a) The ostensive stimulus is relevant enough for it to be worth the addressee’s effort to process it; and (b) The ostensive stimulus is the most relevant one compatible with the communicator’s abilities and preferences (S&W, 1995: 267 and 270). As W&S (2002a: 257-258) correctly point out, communicators “cannot be expected to go against their own interests and preferences in producing an utterance. There may be relevant information that they are unable or unwilling to provide, and ostensive stimuli that would convey their intentions more economically, but that they are unwilling to produce, or unable to think of at the time”. All this is covered by clause (b) of the definition of optimal relevance, which states that the ostensive stimulus is the most relevant one “that the communicator is WILLING AND ABLE to produce” (ibid., 258).

2.4. Assessing relevance: Cognitive effects versus processing effort
Unlike what I call “static pragmatics”, which foregrounds the importance of context but somehow takes it for granted or is merely interested in dissecting, as it were, its elements, S&W view the context as a dynamic, mental entity made up of a sub-set of the person’s assumptions about the world which is accessed in the search for relevance. Often several extensions of context are required in order to arrive at an optimally relevant interpretation, but as soon as one interpretation is found to be satisfactory, interpretation stops and no other interpretive hypotheses are considered: “when a hearer following the path of least effort finds an interpretation which satisfies his expectations of relevance, in the absence of contrary evidence, this is the best possible interpretive hypothesis” (W&S, 2002b: 605).

The aforementioned Communicative Principle of Relevance predicts a basic procedure for hearers when hypothesizing about contextual extensions required for the interpretation of a verbal stimulus: to consider interpretive hypotheses in order of accessibility (following a path of least effort) and stop when they arrive at an interpretation which satisfies the expectations of relevance raised by the stimulus itself. Relevance, then, is a matter of balance between the interest that the utterance might provide (in terms of so-called “positive cognitive effects”) and the mental effort that obtaining this interest demands.

Relevance is a characteristic of an input to the human cognitive processes which, when processed in a certain context, yields positive cognitive effects. Since there are too many possible stimuli to which we can pay attention, our cognitive architecture is designed to allocate our processing effort in such a way that benefit is maximized. Hence, relevance has to do with the improvement of the person’s knowledge, and this can be achieved either by adding new information, by revising existing assumptions, or by yielding new conclusions resulting from the combination of old and new information (in this case contextual implications are generated). The definition of relevance of an input to an individual involves two clauses: “(a) everything else being equal, the greater the positive cognitive effects achieved in an individual by processing an input at a given time, the greater the relevance of the input to that individual at that time; and (b) everything else being equal, the smaller the processing effort expended by the individual in achieving those effects, the greater the relevance of the input to that individual at that time” (W&S, 2002b: 602).

3. CURRENT ISSUES AND OPEN DEBATES

3.1. The explicit/implicit distinction
One of the key differences between Grice’s model and S&W’s lies in the demarcation of explicit and implicit communication. For Grice, what is said involved little inference, mainly reduced to disambiguation and reference assignment, while all the inferential load was laid upon the derivation of implicatures, the latter being obtained after literal meaning has been found inappropriate, the so-called dual-stage processing. S&W reject this view and favor a more adequate mutual parallel adjustment of explicit content –explicatures– and implicit import –implicatures– during interpretation, and with no pre-conceived sequential arrangement.

Within RT, explicitly communicated information not only demands as much contextualisation as implicatures, but also covers aspects of communicated meaning which Grice included in the term implicature (e.g. the so-called generalized conversational implicatures, most of which are now pictured as explicit information, see Carston, 2002).

Besides implicatures, S&W propose two types of explicitly communicated information: the basic-level explicature, and the higher-order explicature. The latter also includes the speaker’s attitude (to regret that…, to be happy that…, etc.) or a higher-order
speech-act schema (to be asking that..., to be ordering that..., etc.). Both explicatures and implicatures allow for degrees (i.e., strong and weak explicatures/implicatures), depending on the addressee’s responsibility for their derivation and the amount of mental processing required.

Other notions used by other authors in the definition of explicit information, for instance literal meaning or what is said are not considered by S&W, since they do not play any useful role in the study of verbal comprehension: “even when a literal meaning is available, it is not automatically the preferred interpretation of an utterance. In fact, literalness plays no role in our account of language comprehension, and nor does the notion of what is said” (W&S, 2002b: 586). This is because, among other reasons, hearers often derive loose interpretations rather than purely literal ones: “hearers have no objection to strictly false approximations as long as the conclusions they bother to derive from them are true. In fact, they might prefer the shorter approximations to their longer-winded but strictly true counterparts for reasons of economy of effort” (ibid., 598).

On the other hand, Bach (1994) proposes a third term, impliciture, half-way between explicatures and implicatures, but authors such as Vicente (2002) reject this blurring of the explicit/implicit dichotomy. The term impliciture covers several cases which would fit into S&W's notion of explicature, basically completions of the semantic representation of the sentence (e.g. ‘The table is too wide’ [to go through the door]) and non-literal uses of sentences in which no constituent is being used non-literally, what Bach calls standardized non-literality (e.g. ‘You are not going to die’ [from this cut]).

3.2. Conceptual and procedural encoding
One of the most interesting lines of research within relevance theory is the one which differentiates between conceptual meaning and procedural meaning. Wilson & Sperber (1993:10) summarize this dichotomy as follows: “inferential comprehension involves the construction and manipulation of conceptual representations; linguistic decoding feeds inferential comprehension; linguistic constructions might therefore be expected to encode two basic types of information: concepts or conceptual representations on the one hand, and procedures for manipulating them on the other”.

Most words encode concepts, but some words give instructions as to how conceptual representations are to be manipulated and hence encode procedural meaning. Blakemore and her followers applied the notion to connectives (Blakemore, 1987) and discourse markers (Blakemore, 2002), which constrain the inferential phase by indicating the kind of inferential process that the hearer should go through (hence reducing the eventual overall effort) in the subsequent stretch of discourse. But in recent research the list of procedural items has been extended to cover nonverbal elements such as intonation.

3.3. Ad hoc concept formation
The notion of ad hoc concept construction is one of the latest developments of relevance theory in the area of figurative language (especially metaphors), which has also been extended to the analysis of how concepts in general are processed (cf. Carston 2002, Pilkington 2000).

The traditional relevance-theoretic account of figurative language relies on the assumption that there is an interpretive resemblance between the coded concept and the intended thought. And we can say the same about the whole utterance whose propositional form resembles the propositional form of the communicator’s thought (Pilkington 2000: 90). From this viewpoint, the interpretive resemblance between, for instance, a coded metaphor
and the thought which it resembles would lead to the hearer's derivation of stronger/weaker implicatures.

Within an alternative account of utterance interpretation it is claimed that the metaphor provides a new ad hoc concept for the proposition expressed by the utterance (instead of favoring the derivation of implicatures). Encyclopedic entries would be explored in such a way that an increase in the salience of a number of assumptions is created, providing an encyclopedic entry for the new concept (Pilkington 2000: 95-96). They are ad hoc “because they are not linguistically given, but are constructed online in response to specific expectations of relevance raised in specific contexts. There is a difference then between ad hoc concepts, accessed by a spontaneous process of pragmatic inference, and lexicalized concepts, which are context-invariant” (Carston 2002: 322).

3.4. Mutual knowledge versus mutual manifestness
S&W reject the traditional notion of mutual knowledge since it generates an endless recursion (A knows that p, B knows that A knows that p, A knows that B knows that A knows that p, ad infinitum). Instead, they propose the notion of mutual manifestness (see Sperber & Wilson, 1990). What is ‘manifest’ is what one is capable of inferring or capable of perceiving, even if one hasn’t done so yet. The sum of all the manifest assumptions is the person’s cognitive environment. A part of this environment is shared with other individuals, the mutual cognitive environment. Communication is a matter of making certain assumptions mutually manifest to both speaker and hearer.

Several authors have criticized the notion of mutual manifestness. For example, Mey and Talbot (1988) point out that what S&W do is to send mutual knowledge out at the front door and then let it in at the back, disguised as ‘mutually manifest assumptions’. For these authors, cognitive environments are not distinguishable from mutual knowledge, and S&W use the same concept that they want to abandon. To my knowledge, neither S&W nor their critics have been persuaded to abandon their differing claims on mutuality.

3.5. Communicated and non-communicated acts
One of the most underdeveloped areas within relevance-theoretic research is the relationship between RT and speech acts. In short, S&W (1986: 244-246) distinguish between communicated and non-communicated acts. The former depend on the addressee’s perception that a certain speech act has been performed (e.g. admitting, promising, thanking), while in non-communicated acts communication does not depend on the identification of a particular speech act (e.g. predicting, warning, suggesting). In this case successful communication lies in the hearer’s recovery of adequate cognitive effects from the utterance with the aid of context and in the recovery of the speaker’s intentions.

In a recent paper, Nicolle (2000) has argued against the existence of non-communicated speech acts in the RT sense. Examples of non-communicated acts such as the act of warning in “The path is slippery here” are re-considered by Nicolle in social terms, and their influence on the interlocutors’ social environments implies that they also have to be communicated: “the recovery of information relating to social relations is an essential element of the comprehension process. When the recovery of such information depends on the identification of a particular speech act, that speech act is by definition a communicated act” (p. 239).

3.6. Irony and the notion of echo
In W&S (1992), the authors conceptualize irony in interpretive terms. An ironic utterance is an interpretation of another thought, utterance or assumption which it resembles and which the speaker attributes to a different speaker or to himself/herself at another time. Besides, they are necessarily echoic (they simultaneously refer to an attributed thought -or utterance, or assumption- and express an attitude to it). Specifically, the speaker’s attitude towards what is echoed has to be dissociative. This dissociation may apply to either the proposition expressed by the utterance, or to some effect that is generated by that utterance.

Several authors have commented upon this proposal. For instance, in some of the papers collected in Carston & Uchida (1998) it is claimed that irony can be non-echoic. In their reply, S&W (1998) maintain that although most utterances cannot be understood as echoic (i.e., there is no accessible representation that they might be taken to echo) an utterance has to be echoic in order to be interpreted as ironical.

3.7. Modularity
Initially, S&W inherit the view of the mental architecture of the mind proposed by Jerry Fodor in the early eighties: several modules feeding a central processor with specific information.

Modules are evolved special-purpose mental mechanisms, typically automatic, informationally encapsulated and domain-specific. For instance, the language module is only (and automatically) activated by verbal stimuli, feeding the central processor with a schematic logical form which then has to be enriched inferentially.

Over the last few years, this view of the mind has changed within RT (and also within evolutionary psychology), especially concerning the structure of the central processor, which is also regarded to be modular (Carston, 1997; S&W, 2002; Wilson, 2003). The most important module, specifically a sub-module of the general ‘theory of mind’ ability, is the pragmatic module, which also exhibits qualities typically associated with modules. For example this pragmatic module is biologically endowed, only activated by a specific type of information (ostensively communicated information), and constrained by its own principle: the Communicative Principle of Relevance.

3.8. Relevance theory as asocial
RT has been criticized for being hyper-individualistic and for avoiding the social aspects of communication. S&W (1997: 147) acknowledge that they have concentrated on the inferential activity of the individual, but inference is also social: “Inferential communication is intrinsically social, not just because it is a form of interaction, but also, less trivially, because it exploits and enlarges the scope of basic forms of social cognition. Right or wrong, this is a strong sociological claim”. Although S&W have not studied uses of communication to convey information about the social relationship between the interlocutors, S&W do not mean to deny its importance, or to express a lack of interest in the issues or the work done; they merely feel that, at this stage, they can best contribute to the study of human communication by taking it at its most elementary level, and abstracting away from these more complex (socially-connoted) aspects (ibid.). Hence, for S&W, although “so far, the contribution of relevance theory to the study of human communication has been at a fairly abstract level… it seems to us to have potential implications at a more concrete sociolinguistic level” (p. 148).

A recent proposal by Escandell-Vidal (forthcoming) aims at integrating inferential and social issues in terms of principles and norms respectively, and as part of a domain-specific picture of mental activity. The mind operates according to principles which are in charge of obtaining fully propositional interpretations from coded stimuli. When dealing with norms,
the mind is engaged in both a long-term and a short-term task. The short-term one analyzes and categorizes in-coming information, and the long-term task builds up and updates socially accepted behavior.

4. EMPIRICAL EVIDENCE
One of the main criticisms of this theory has to do with the fact that it is highly speculative, predicting without empirical evidence the mental procedures and interpretive steps the human mind goes through in human communication. Obviously, we are dealing with an object of study, the human mind, which is inextricable, still largely unexplained, which for many researchers means that the most we can do is to make predictions about its functioning and architecture.

S&W (2002: 143) acknowledge that in much pragmatic research there is a certain reluctance to get down to experimentation. However, relevance theorists have been trying to combine theoretical issues with all the possibilities of testing provided by the careful use of linguistic intuitions, observational data, and the experimental methods of cognitive psychology (see W&S, 2002b: 607, note 7 for references). Recent research has aimed at an explanation of central claims of the theory. For instance, Van der Henst and Sperber (in press) propose a test of the two Principles of Relevance. They claim that the hypothesis that hearers spontaneously rely on a relevance-guided interpretive procedure can be experimentally tested by intentionally manipulating either the effort required to process a stimulus or by changing the order of accessibility of several competing interpretations for the same stimulus. Another possible test is a manipulation of the effect factor by making a specific interpretation more or less likely to satisfy the expectations of relevance.

Other studies have focused on other possible areas of RT-based empirical research. Among them we can underline the ones on Wason selection task. For example, Sperber, Cara and Girotto (1995) tested how participants derive implications from a conditional statement in order of accessibility, stop when their search for relevance reaches an adequate balance of cognitive effects and processing effort, and select cards on the basis of this interpretation. The authors were able to manipulate the effort and effect factors (by varying the content and context of the conditional statement) so as to elicit correct or incorrect selections at will (cf. W&S, 2002a: 279).

Besides, the validity of the aforementioned claim that we do not need Gricean maxims to explain human communication has also been tested, specifically the need of a maxim of truthfulness (Van der Henst, Carles and Sperber, 2002). These authors showed that when people ask a stranger the time in the street they get, as a reply, “a time that is either accurate to the minute or rounded to the nearest multiple of five, depending on how useful in the circumstances they think a more accurate answer would be” (W&S, 2002b: 598), and regardless of whether they have (accurate) digital watches. These rounded answers are not strictly true, but they are easier for their audience to process.

5. APPLICATIONS
RT has been applied to a number of research areas, providing a new insight or a new point of view to traditional analyses. Lack of space prevents me from giving a more detailed account of these applications. Among them, we can suggest the following.

1. Grammar. Within RT, grammatical aspects are no longer intrinsic and/or relatively stable features of language, nor are grammatical attributes a mere list of choices in idealized contexts supplied by the grammarian. Instead, grammatical attributes constrain (or not) the choice of a candidate (i.e. intended) interpretation. In this sense, the grammatical organization
of utterances plays an important part throughout this cognitive contextualisation. From this point of view, several aspects of grammar have been addressed, including connectives (often within a conceptual/procedural account, see 3.2 above), conditionals, modals and modality, adverbs and adverbials, moods, tenses, the article, etc.

2. **Humor**. Within a relevance-theoretic approach, humor is no longer a property of texts and, instead, what we need to characterize are the mental processes undertaken by the audience in the interpretation of humorous texts.

Underlying this approach to humor lies the premise that communicators can predict and manipulate the mental states of others. Knowing that the addressee is likely to pick out the most relevant interpretation of the joke (or some part of it), the humorist may be able to produce a text which is likely to lead to the selection of an accessible interpretation, which is then invalidated at some point. In Yus (2003), for instance, it is claimed that in many jokes the initial part has multiple interpretations but they are graded according to their accessibility. The hearer is led to select an overt (i.e. relevant) interpretation of this part of the joke. Suddenly, the hearer notices that the subsequent part has a single covert interpretation which eventually is the correct one (and the one providing a homogeneous interpretation to the whole text) and which humorously surprises the hearer.

3. **Media discourses**. RT has also been successfully applied to the interpretation of media discourses, including films, newspaper headlines, comics, Internet discourse, and advertising. The last one is probably one of the most extensive applications of the theory. The control over the amount of information provided, the predictability of consumers’ responses, and the calculation of the effort required to process information, typical features of the strategies by the makers of adverts, can easily be analyzed using a relevance-theoretical approach (see Tanaka, 1994).

4. **Literature**. Several studies have applied RT to literary discourse. The study by Pilkington (2000) is an example. Within an RT approach, literariness has to be analyzed as cognitive effects triggered by textual stimuli, involving special mental processes which, through a relevance-driven cognitive exploration, result in the marginally increased salience of a wide range of assumptions (p. 189). Since in literature it is more difficult (if not impossible) to make assumptions mutually manifest, a greater load of responsibility is laid upon the reader in extracting the intended (or, alternatively, his/her own) interpretation of the text plus whatever feelings and emotions are associated with the comprehension of the text.

5. **Politeness**. This is a typical social feature of communication which somehow appears not to suit the individual-centered approach within RT. However, several studies have attempted an explanation of politeness in relevance-theoretic terms. For instance, politeness has been explained within RT as a verbal strategy compatible or incompatible with the background expectations about the current relationship holding between speaker and hearer, thus leading to different relevance-oriented interpretive paths (see Jary, 1998).

6. **Translation**. In RT-bases studies such as Gutt’s (1991), there is a tendency to exploit the idea of interpretive resemblance between two propositional forms. In his case, the translator has to try to communicate the same set of assumptions that the original author intended to communicate, but in a particular context and to a different audience, and hence departing from an attempt at purely literal translation.

6. **CONCLUDING REMARKS**

In RT, S&W propose a coherent cognitive account of how the human mind proceeds when attempting to select a plausible interpretation of ostensively communicated stimuli. They rely on the hypothesis that an evolved pragmatic module aids human beings in the
metarepresentational inferential enrichment of typically underdetermined coded texts and utterances resulting in fully propositional interpretations.

The theory has provided insights on several current debates in pragmatics and cognitive science and has been applied to a good number of research areas. All this is an evidence of its dynamic quality and of the prospect that it will continue to stir fruitful intellectual debates on the explanation of human communication.

**Bibliography**


