

Speech Act Theory and Communication Modeling

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INTRODUCTION

Since the early 1980s there has been an interest in linguistics in general and speech act theory in particular in CSCW, HCI, MIS, and IS modeling in general. The reason for this is simple—computer and information scientists discovered that most work is group work and most group work occurs via language. Winograd and Flores (1986) popularized the use of speech act theory, especially the Searlian variety, for modeling electronic communication and collaboration. However, what one finds if one looks closely is that we have taken the easy road when dealing with language. There are a large variety of speech acts that we ignore when analyzing language, particularly when using speech act theory. Why this is so, the impact on tool-creation, and possible remediation of this problem will be discussed. The importance for such areas as e-collaboration, as well as text mining, computer security, and computing in general will be emphasized.

BACKGROUND

Computer and information science (CIS), being the domain of mathematicians and engineers in the early days of computing, was heavily influenced by logical positivism. As such, the truth or falsity of the propositional content—semantics—was the dominant issue. Syntax, of course, also played an important role. This was for a good reason: These were the only factors a computer could handle. CIS told itself that the programming calculi it used to control machines were, in fact, “languages.” Rather than recognizing the metaphorical use of the term, “language,” CIS implemented systems under the assumption that human language was as context-free and straightforward as rule-based, mathematical equations.

To support the above conception of language, many researchers used the model of communication devel-

oped by Shannon and Weaver (1949), and shown in Figure 1. Since Shannon and Weaver never proposed this as a model of *human* communication, they never explored the complexity for human communication of a number of issues in the model: 1) the nature of “noise,” 2) the method of integration with the transmitted/received signal, 3) the social status of source and destination, and the list goes on.

Again, the metaphor (this time of communication), once applied to human communication, took on a life of its own. (For a study of the nature—and insidiousness—of the metaphorical use of language, the reader is directed to classic work of Lakoff and Johnson (2003)).

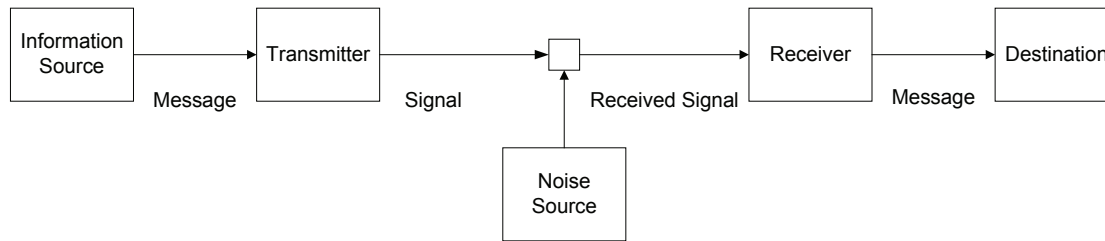
It was not until the 1980s that some researchers began to look at the broader issues of language, as perhaps the primary avenue of human communication. At this time, a more complete view of language, which included pragmatics, derived from the non-positivist branches of Anglo-American philosophy—for example, speech act theory and the later Wittgenstein—was taken into account, as well as the work of socio- and psycholinguists.

Pragmatics is commonly referred to as the third branch of linguistics (the other two being semantics and syntax). Particularly under the influence of Winograd and Flores (1986), speech act theory—perhaps the most influential branch of pragmatics (Levinson, 1983)—became the dominant branch of pragmatics in e-communication and e-collaboration theory.

SPEECH ACT THEORY

A speech act is a statement, verbal or written, that is designed to accomplish a particular goal. While it may have propositional content, it is not a true or false statement, and is thus not defined by the truth conditions of its propositional content.

Figure 1. Model of communication according to Shannon and Weaver (1949)



Speech act theory started out (Austin, 1962) as a reaction against the prevailing trend in the philosophy of language during the first half of this century—logical positivism—in which all statements are propositions that were either true or false. Speech act theory contends that besides committing the speaker to the truth or falsity of a statement, there are statements that, by their very utterance, actually constitute performing an action. Because such statements are actions, they cannot be considered to be either true or false but only “felicitous” or “infelicitous.” That is, they achieve their stated goal or they somehow “go wrong.” John Searle expanded on and codified Austin’s work (Searle, 1969). Searle logically enumerated the five possible categories of speech acts. His taxonomy broke speech acts down as follows (Searle, 1979):

1. **ASSERTIVES**, which commit the speaker to the truth or falsity of something’s being the case. If the propositional content of the statement could be characterized as either “true” or “false,” then the statement is classified as an assertive.
S1: “This Java code does exactly what I wanted the way I wanted it done, and with absolutely zero defects.”
2. **DIRECTIVES**, which constitute an attempt by the speaker to get the listener to do something.
S2: “Finish your part of the coding by Friday.”
3. **COMMISSIVES**, which commit the speaker to do something.
S3: “I will finish my part of the coding by Friday.”
4. **DECLARATIVES**, which bring about a correspondence between the propositional content of the statement and reality.
S4: “I declare this part of the project to be completed.”

Obviously, issuing a declarative requires that a speaker/writer have the authority to issue that statement.

5. **EXPRESSIVES**, which express the psychological state of the speaker.

S5: “I feel uncomfortable with that time frame.”

Searle also developed the notion of indirect speech acts. Indirect speech acts communicate to the hearer more than the speaker actually says by way of relying on mutually shared background information, both linguistic and nonlinguistic, together with the general powers of rationality and inference on the part of the hearer (Searle, 1979). Indirect expressions (indirection) change the nature of communicative interaction considerably. Let us use statement S1 above. S1, at first blush, is an assertive. It commits the speaker to the truth of something being the case. Now let us suppose a) it was the supervisor who made S1, and b) S1 was made to the programmer responsible for writing the code. S1 could then be (rightly) considered a declarative—that is, the supervisor (who alone has the authority to do so) is indirectly declaring a part of the project completed. The hearer (in this case, the programmer) could also probably assume that his activity in this part of the project is completed. Indeed, if the supervisor were to come back to him at some later date and complain about the Java code, the programmer could rightly object to the supervisor’s complaint, using S1 as a source for his objection to the complaint. Indirection is common and natural (usually used for reasons of politeness and decorum—that is, face management), and there is some reason to believe it occurs “automatically” in the brain (Holtgraves, 1998, 1999) and not the result of a deduction, as Grice (1975) and those following him (e.g., van Eemeren & Grootendorst, 2004) seem to assume.

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