

NEGOTIATING MEANING IN TECHNICAL DISCOURSE

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ABSTRACT

One of the functions of language is to exchange information within a given community of users. Thus, the process of communication takes language users through a complex process that starts with the perception of entities from the surrounding world and continues with a negotiation of meaning. This paper highlights some considerations about how representations of entities are reflected in language use.

Keywords: technical discourse, technical vocabulary, semantics

1. Introduction

Progress has lead mankind to the technological advance we experience today. Many things we do today are the same kinds of things the human race has repeated over and over in its history. To shelter from heavy rain, people retreated into caves. In 2011, umbrellas and hats protect us from water, as well as other ingenious inventions. Basically, we do the same things, we provide for needs that describe our human nature, as part of a physical universe that works according to laws that we have meanwhile tried to understand, described and challenged. To a great extent, the shape of our world has been influenced by the way in which people have managed to discover relationships between facts and how they agreed upon courses of actions in different situations.

Whatever relationships there are between the world that is represented through language and the language users, these become more transparent in communication, understood as an exchange of information. Our mind is the filter through which we perceive everything around us. Communication is frequently defined as a form social interaction through symbols and messages; a social function or a way of life based on a set of rules; a process in which animals and humans use information to carry out tasks.

It might be argued that humans are very different from animals, in all respects. As regards communication, probably the only difference between the animal and us is that we can use words to communicate and they can't. Animals make sounds, growl, howl, squeak and squeal to express themselves. We sometimes do the same. At this *expressive* level all life forms use language with the

same purpose: to communicate an inner state. A dog can wag his tail to show that he is friendly and in a similar way, a smile can indicate openness. Sounds and body language are signals that create impressions and they will trigger reactions.

One notable difference lies in the capacity of the human to describe events, to refer to the past, present, future and any other possible worlds. Words can create a different reality than the physical one, they help us imagine stories, come up with hypotheses and theories, tell of what is true and what is not. Words are our best friends when we want to lie. And they help us build arguments and convince people around us. So, what can we do with words? Pragmatically speaking, we can use them to build sentences that mean something to us and to those we share them with. But knowing syntactic rules and the meaning of words is not enough, since every meaning depends on a combination of what is said, what the speakers know about the subject, in given circumstances. That is to say, the context of our utterances plays an important role in communication.

2. Communication and contexts

Ideas are simplifications and abstractizations of reality, filtered by the mind of every individual. Our mind absorbs experiences in a unique and personal way. Every idea can become part of a message that will be expressed in different ways, according to variables, such as, the object, purpose, audience, style and cultural identity. When ideas are transmitted, it is important to consider the possible best way(s) in which to convey the information, as well as how fast the message should reach the audience. When the message is

received, there is likelihood that the transmitted message will be understood exactly as it was transmitted *if there are no distortions and the ideas are understood precisely as they were intended*. Finally, the audience receives the information and will have a reaction, which will allow you to establish how much of the original information has been received. This reaction is what we call feedback, a tool that helps us find out how we are perceived by the others, what image we create in others' minds, what our position is in a given social group. Our attitudes and reactions are interpreted as feedback. So, it is very important to express ourselves clearly, in order to avoid conflicts and misunderstanding.

Any message is easily distorted by factors, such as: lack of assertiveness, lack of information, emotional problems, difficulties in expressing ideas, noises from the outside, personal and professional differences, different emotional reactions, bias, stress, invasion of personal space, etc. In order to overcome these potential problems, we should remember these principles [3]: speak/write appropriately for your audience; speak/write clearly; be concise; engage your audience; help the audience.

Language in general functions based on a set of principles realized in different languages, depending on the environment human beings are exposed to. According to Chomsky, these principles define a number of general parameters of language which are given in different settings as a result of varying environmental conditions. Chomsky made the distinction between *performance* (how humans use language in everyday life) and *competence* (how language is represented in the mind). Thus, language, mind and social life are closely linked together. In one sense, language is essentially of cognitive nature, while at the same time it functions as a means of communication and social control. It is in the mind as abstract knowledge and must be experienced as behavior. From this point of view, language is a system of signs designed to meet the needs of human groups and societies. This system of signs serves to express social meanings.

Language doesn't exist without the people who produce and use it. It is a social institution, a system defined through its constituents. In engineering, students and professionals are concerned with exchanging information about technical matters, as well as with negotiating and agreeing upon solutions at the workplace, in the lab and in other related contexts. The function of language that language serves to express content is called *transactional*, whereas the function that refers to the expression of social relations and personal attitudes is called *interactional*. [1]

If meaning is used to designate the *potential* of a

language expression, or other signs for representing and conveying knowledge, i.e. *virtual* meaning, then sense is used to designate the knowledge that *actually* is conveyed by expressions occurring in a text. Many expressions have several virtual meanings, but under normal conditions, only one sense in a text.

What is meaningful necessitates an investigation of the cognitive, physical and social forms that shape and define meaningful expression. Language not only describes the world around us, but is a tool used to communicate and share experiences.

Any text refers to a reality or another. Reference is the symbolic relationship that a linguistic expression has with the concrete object or abstraction it represents. Reference is the relationship of one linguistic expression to another, in which one provides the information necessary to interpret the other. The referent of a sentence is a state of affairs, whereas the referent of the word is the 'object'. Benveniste calls the referent of the word 'the particular object to which the word corresponds in the concrete actuality of circumstance or use' [6]. Texts are subdivisions of the more general term, discourse. Discourse, may it be written, or spoken, is always influenced by extra-linguistic factors, such as the context of production, which includes author, audience, channel of communication and all the social or institutional variables. This can be illustrated by studying real samples of the various discourses that are produced in specialized fields. Psychology can offer insight into what might be called the "cognitive context of discourse" [13] and a study of context must include elements of sociology and psychology that can contribute to the better understanding of the notion of context.

In technical discourse, words usually identify things from the world around us. They name objects, describe their characteristics and constitute the foundation for creation of complex meaning, in that they combine in phrases and sentences of language. Letters, sounds, words and phrases are the basic units through which we transfer the real world into linguistic shape. Starting with the simple perception of the things around us, the human mind builds categories and models for structuring reality, using language as a common means of conceptualization, understanding and sharing experiences.

3. Some characteristics of technical discourse

Communicating undergoing technological change is a complex activity. Studying the use of specialized words in context can provide a tool for mapping these activities, assessing their potential impact and listening to the voices of people active in various relevant fields of interest [12].

The type of thought process involved in English for

Science and Technology is a logical and sequential one, typical to Maths and Science. Thus, for some authors it is the purpose that defines technical discourse, whereas Kinneavy calls it the aim of discourse. W.E. Britton said that the “primary characteristic of technical and scientific writing lies in the effort of the author to convey one meaning and only one meaning in what he says”[5].

In our terms, technical discourse is discourse with subject matter in science and engineering. One focus of this research is how technical discourse deals with subjects that fall within the science of engineering, more specifically, mechanical engineering. Some general characteristics are: concern with practical matters, use of specific vocabulary (with a special focus on adjectives and nouns) and conventional forms, commitment to objectivity and accuracy, a wide range of task.

Under the general term of technical discourse, we can identify many specific branches, according to the themes and topics covered as well as specific vocabulary and other characteristic features. E.M.E. (English for Mechanical Engineering) designates a language that shows how things are made. This can be seen in texts in Materials Science, Technology of Materials, Assembly Techniques for Machine Tools, etc. It gives linguistic expression to what lies beyond the process of making them - rules, regulations, descriptions, standards; the purpose that things serve - product descriptions, technical specifications; as well as the general laws that govern the making, purpose and use of those particular instances referred to as things. E.M.E. texts are mainly expository, prescriptive and descriptive, with few narrative features [4]. An E.M.E text may contain a mixture of the aforementioned types and in each text one of them will be the predominant mode of communication. E.M.E. has to be dealt with not as a single concept, but as a sub-concept of E.S.T. It should be analysed in an integrated, interdisciplinary manner, in real contemporary contexts, including university level as well as labor market use.

4. Conclusions

As a type of language defined by special vocabulary and features that apply in the specialized contexts of use, E.M.E. can be used as a tool in the process of communication in engineering contexts. Starting from the level of words and going through the entirety of discourse characteristics, E.M.E.’s use should further be investigated.

5. References

- [1]. Brown & Yule, (1984) *Discourse analysis*, Cambridge: Cambridge University Press.
- [2]. Darian, S. (2003) *Understanding the Language of Science*. Austin: University of Texas Press
- [3]. DeVito, Joseph A. (2004) *The Interpersonal Communication Book*. Boston: Pearson Education Inc.
- [4]. Eggs, E. (2000) Vertextungsmuster Argumentation: Logische Grundlagen. In Brinker, K, ed. *Text und Gespræchslinguistik. Ein internationales Handbuch zeitgenoessischer Forschung*. Berlin:De Gruyter, pp. 397-414.
- [5]. Kinneavy, James L. (1971) *A theory of discourse; the aims of discourse*. Englewood Cliffs, N.J: Prentice-Hall.
- [6]. Ricoeur, P. (2006) *The Rule of Metaphor*. London and New York: Routledge.
- [7]. Romaine, S. (1994) *Language in Society. An Introduction to Sociolinguistics*, New York: Oxford University Press
- [8]. Rosenberg, Barry J. (2005) *Technical Writing for Engineers and Scientists*. Pearson Education, Inc.
- [9]. Thomson Industries Inc (1993) *Linear motion technology guide*, Thomson Industries Inc.
- [10]. Timings, R.L. (1984) *Workshop Processes and Materials*. London: Longman.
- [11]. Toulmin, S. E. (2003) *The Uses of Argument*. Cambridge: Cambridge University Press.
- [12]. Trimble, L. (1985) *English for Science and Technology. A discourse approach*, (Cambridge Language Teaching Library), Cambridge: Cambridge University Press.
- [13]. Van Dijk, Teun A. (2008) *Discourse and Context. A Sociocognitive Approach*, Cambridge: Cambridge University Press.
- [14]. Van Dijk, Teun A. (ed) (2000) *Discourse as Social Interaction*. London: SAGE Publications.