

THE PRAGMATICS OF SPECIALIZED COMMUNICATION

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ABSTRACT

This paper aims to emphasize the importance of pragmatics in connection with specialized communication. The structure, content, and terminology of specialized texts are constrained by factors such as the communicative situation itself and the previous knowledge, intentions, expectations, and beliefs of the text sender. The transmission of such meaning is problematic even in one language. When it is a question of two languages, as is the case in any act of translation, the difficulties are multiplied. For this reason, it is imperative for translators to be aware of how pragmatics, perhaps more than any other part of language, can dramatically affect their professional activity.

KEYWORDS: pragmatics, specialized communication, specialized translation, terminology.

RESUMEN

El presente artículo pretende poner de manifiesto la importancia de la pragmática en relación con la comunicación especializada. La estructura, el contenido y la terminología de los textos especializados se ven afectados por factores como la propia situación comunicativa y el conocimiento, intenciones, expectativas y creencias previos del emisor del texto. La transmisión de tal significado es difícil incluso en una sola lengua. Cuando la transmisión se produce entre dos lenguas, como es el caso de cualquier acto de traducción, las dificultades se multiplican. Por esta razón, es fundamental que los traductores sean conscientes de cómo la pragmática, más que ningún otro componente del lenguaje, puede afectar de forma decisiva a su actividad profesional.

PALABRAS CLAVE: pragmática, comunicación especializada, traducción especializada, terminología.

1. INTRODUCTION

Pragmatics is generally considered to be the study of the ability of speakers to communicate more than that which is explicitly stated. As Mey (2004: 42) writes:

Pragmatics is essentially about the users of language in a real-life situation, and about the conditions that enable those users to employ linguistic techniques and materials effectively and appropriately.

It is the study of meaning arising from language in context, in other words, the meaning intended by the speaker or text sender and understood by the listener or text receiver. When the communication act is successful, these meanings coincide, and when it is not, they diverge to a greater or lesser degree. As such, pragmatics focuses on the effect of context on communicative behavior as well as on how inferences are made by the receiver in order to arrive at the final interpretation of an utterance. The scope of pragmatic meaning can be entire utterances as well as individual lexical units.

Specialized language pragmatics is directly related to the situations in which this type of communication occurs, and to the ways that the text sender and receiver potentially and effectively deal with them. Such communicative situations are the focus of the external or *sociocultural* view of pragmatics, whereas the online construction of text and word meaning by sender and receiver refers to the internal or *cognition-oriented* view of pragmatics.

Cognition-oriented pragmatics explores how the text, which is the result of the communication act, is molded by the situation itself as well as the previous knowledge, intentions, expectations, and beliefs of the text sender. It also targets how the text is finally understood by the receivers, both at the micro and macrocontextual level. The structure, content, and terminology of the specialized text are constrained by all of these factors, and can be analyzed in terms of *frame*, *context*, and *construal* or speaker perspective.

The transmission of such meaning is problematic even in one language. When it is a question of two languages, as is the case in any act of translation, the difficulties are multiplied. For this reason, it is imperative for translators to be aware of how pragmatics, perhaps more than any other part of language, can dramatically affect their professional activity.

2. PRAGMATICS

As is well known, pragmatics generally studies communication events or the intentional acts of speakers at times and places. According to Korta and Perry (2006), the facts which pragmatics deals with are the following:

- Facts about the objective facts of the utterance, including who the speaker is, when the utterance occurred, and where it took place;
- Facts about the speaker's intentions;
- Facts about beliefs of the speaker and of the text receivers, and the conversation they are engaged in;
- Facts about social institutions, such as marriage ceremonies, courtroom procedures, and the like, which affect what a person accomplishes in or by saying what he does.

In specialized communication, crucial pragmatic dimensions include the beliefs and expectations of the text sender, the knowledge shared by text sender and text receivers, the communicative objectives of the oral or written text stemming from the interaction of the participants, and the factors that cause receivers to interpret the text in a certain way. Specialized language pragmatics also focuses on facts about social and academic institutions, in which events generate specific types of specialized texts.

An example of such an academic institutional event is a conference in which research results are presented within a given knowledge field, such as neurosurgery, coastal engineering, nanotechnology, etc. Among the communicative interactions typical of an academic conference, one can find oral presentations, posters, round tables, plenary lectures, etc. However, even when these discourse types all contain and convey basically the same or similar information, an oral presentation is hardly the same thing as a poster, which is different from a round table or a plenary lecture. All of these academic discourse types in turn differ substantially from an article in a scientific journal, describing the same research results presented at the conference.

The reason for this is that formal communication is constrained, and determined, at least to a certain extent, by format and text type even when the communication acts take place in the same setting with essentially the same set of participants. The type of text or discourse models the information conveyed as well as the language used for the presentation of the information.

Evans and Green (2006: 221) underline the importance of different types of context in the modulation of any given instance of a lexical item as it occurs in a particular usage event. Broad context types mentioned are the following:

- Encyclopedic information accessed (within a network of specialized knowledge)
- Sentential context (utterance meaning)
- Prosodic context (intonation pattern)
- Situational context (physical location where the text is emitted)
- Interpersonal context (relationship holding between text sender and receiver)

Within specialized language pragmatics, prosodic context is perhaps less important than the other four. In this sense, the specialized text is a communicative act that takes place within a given setting, which can be defined in terms of a set of context-related pragmatic parameters linked to a set of inferential processes. Such texts thus can be said to have depth/vertical extension as well as width/horizontal extension.

Another focus of specialized language pragmatics is the nature of specific specialized domains. Certain knowledge areas evidently influence communication between groups of participants, and generate the use of one text template instead of another. In fact, it has been proposed that expert discourses be classified in terms of functions, such as writing and reading monographs and scholarly articles, observations and analyses, giving lessons and lectures, holding press conferences or giving interviews. According to Van Dijk (2001):

These categories involve for instance the overall domain of the current communicative event (e.g., research, education or health care), the overall action(s) being accomplished (e.g., investigate, teach, etc.), the current setting (time, location, circumstances), the specific actions involved (hold a seminar, give a lecture, have a research meeting), the participants and their various communicative, social and professional roles, and their aims, interests, and especially knowledge and opinions.

Van Dijk's proposal includes some of the items mentioned by Evans and Green. The overall domain of the communicative event overlaps to some extent with encyclopedic knowledge; setting corresponds to situational context; and participants and roles correspond to interpersonal context. However, the field-specific actions and activities being performed evidently need to be considered as well as crucial contextual factors.

For example, a Medical Forensics report has characteristics that are unquestionably linked to the knowledge field in question. This type of report, which is a hybrid text between medicine and law, includes specific medical terminology, yet also has the status of a legal document, whose purpose is to

officially inform on or certify a given state of affairs, usually connected with a medical condition, injury, death, etc.

For example, a medical forensics autopsy report can be structured as follows: (i) final diagnosis; (ii) external examination (iii) internal examination (with subsections referring to parts of the body, such as mediastinum, body cavities, lungs, heart, etc.) (iv) microscopic description; (v) evidence. The subject, whose body has been examined, is always referred to as aseptically as possible even in high-profile murders with great emotional potential.

Such an autopsy report was issued in Colorado in 1996. It referred to JonBenet Ramsey, a six-year-old beauty queen, who had been sexually abused and strangled and whose murderer was never officially accused (though her father was the principal suspect). The coroner referred to the dead child in the most impersonal terms possible. When he spoke of her as a whole, and not as a description of parts, it was in the following way: *six-year old female, the decedent, the Caucasian female body*. An example of this can be observed in this excerpt from the autopsy report:

REMAINDER OF EXTERNAL EXAMINATION: The unembalmed, well developed and well nourished Caucasian female body measures 47 inches in length and weighs an estimated 45 pounds. The scalp is covered by long blonde hair which is fixed in two ponytails, one on top of the head secured by a cloth hair tie and blue elastic band, and one in the lower back of the head secured by a blue elastic band. No scalp trauma is identified. The external auditory canals are patent and free of blood. The eyes are green and the pupils equally dilated [...] (Meyer 1996).

The external examination goes from the whole to the parts, beginning at the scalp and progressing downwards. The present tense conveys the impression of immediacy, and the consistent use of the passive voice suggests objectivity in which the pathologist cannot have an opinion, but must let the observed evidence speak for itself.

This type of report differs from a forensic psychiatric evaluation report, which instead of a physical examination is based on a structured interview with the patient in order to certify his/her mental state. Within this context, the category of *action* is extremely important because the document itself is the report of the professional activity or activities carried out to achieve this goal as well as the conclusions reached as the result of these activities.

The same thing is true for research articles, which describe the actions carried out as part of a study or experiment. For example, the activity of presenting research results is reflected in the structure of the prototypical scientific article in specialized domains such as Organic Chemistry, Artificial

Intelligence, Electrical Engineering, etc. which generally follow the IMRAD template (introduction, materials and methods, results, and discussion). IMRAD is the standard format for research reports in Western culture, and thus, is a clear signal to the text receiver of text type, purpose, and content.

All of these issues must be addressed by a pragmatic theory that specifically targets specialized language, whose first task would be to try and bring together the two most common approaches to pragmatics: (i) sociocultural (external) pragmatics; and (ii) cognition-oriented (internal) pragmatics.

2.1. SOCIOCULTURAL PRAGMATICS

Broadly speaking, sociocultural pragmatics deals with how social information enters into and affects communicative behavior. According to Escandell-Vidal (2004: 3), its main task is to identify and characterize the norms that underlie the use of language by a given social group. In specialized language, this social group comprises specialized language users within a given field or knowledge area. This type of pragmatics is initially based on the work of Austin (1962) and Searle (1969, 1975), who laid the foundations for exploring contextual constraints on communication and social conditions for appropriateness. Sociocultural pragmatics generally focuses on politeness studies, research on conversational styles, rhetoric, discourse genres, and register.

In specialized communication, *genre* and *register* are important concepts even though their definitions often seem to confusingly run together. However, following Lee (2001: 46-47), we use *register* to refer to lexical-grammatical and semantic discourse patterns associated with situations, whereas *genre* is used to refer to the membership of a text in culturally-recognizable categories, which may invoke more than one register. As such, genre is a socio-pragmatic phenomenon. According to Unger (2002: 2), a socio-pragmatic phenomenon is a set of shared assumptions that governs the communicative behavior of members of this group. It also relates communicative behavior to the structure of cultural institutions.

Although a definitive inventory and classification of specialized language genres and registers does not as yet exist, specialized language genres would doubtlessly be linked to specialized knowledge activities and text function within the context of a specialized knowledge field. Registers would presumably be subdivided primarily according to levels of formality. These formality levels would be constrained by parameters inherent in the context of specialized communication. Register relates variations of specialized language

use to variations of social context in which this type of interaction generally occurs.

2.2. COGNITION-ORIENTED PRAGMATICS

The objective of cognition-oriented (internal) pragmatics is to account for the cognitive bases of linguistic performance, which encompass the inferential processes leading to the final interpretation, or the interface relationship between grammar and pragmatics. The groundwork for this type of approach was first laid by Grice (1975), Sperber and Wilson (1986) and Levinson (2000), who endeavor to establish general principles that govern different aspects of use and understanding of language (Escandell-Vidal 2004: 348). Cognition-oriented pragmatics also studies cultural breakdowns and pragmatic failure (Moeschler 2004), which are especially relevant to translation studies.

Cognition-oriented theories of pragmatics seek to specify and describe the biological or cognitive foundations underlying communicative behavior, which means the formulation of principles with predictive power. Generally speaking, cognitive pragmatics is largely based on the relevance-theoretic approach of Sperber and Wilson (1995), which envisions pragmatics as a kind of information-processing system for interpreting human communicative behavior.

3. PRAGMATICS AND TERMINOLOGY

Lexical pragmatics in general language has been studied by Bondzio (1983), Ludwig (1991), and Jiménez Hurtado (2001). In terminology, recent studies of the codification of pragmatic information in specialized language units can be found in Adamzyk (1998), Bourigaut and Slodzian (1999, 1998), and Seibel (2004).

Lexical pragmatics is largely based on the premise that the meaning of words in use is underdetermined by the semantics of the lexical items involved, and has to be inferred in context (Unger 2005; Blutner 1998). Thus, the meaning communicated by the use of a word is context-dependent to a greater or lesser degree. Since words have underspecified meaning representations, they reach their full-fledged meanings in contexts through considerable pragmatic inference.

This is also true of terms, which designate concepts within the structure of a specialized knowledge domain. When a term is activated in a specialized language text, its meaning is enriched, and acquires new dimensions.

This occurs because of the encyclopedic knowledge accessed (*frame*). In a parallel way, meaning is reinforced, modified, or constrained by other terms in the same text and communication event (*context*). Meaning also receives a specific focus because of the discourse type, temporal or spatial location of the communication event, and the relationship of the participants (*construal*).

Although the tendency in General Terminology Theory was initially to ignore context and contextual variables as well as the terminological variation that they produce, it soon became apparent that specialized terms are lexical items that are used in communicative contexts, and that these contexts can affect their potential meaning. The importance of the communicative nature of terminology has been underlined by Sager (1990, 1993), Gambier (1993), Wußler (1997) and Cabré (1999, 2000a). In fact, one of the major objectives of the *Communicative Theory of Terminology* (Cabré 1999, 2000ab, 2001ab) is to account for the way in which specialized knowledge units fulfill a specific function in an act of communication within a specific knowledge, situational, and cultural context.

It has often been asked why there is so much terminological variation, when the desired objective of specialized communication is precisely the opposite (Bowker and Hawkins 2006). In fact, despite emphatic assertions to the contrary, specialized texts are filled with examples of terminological variation. Sager (1993) laments the fact that so little research has been carried out on this phenomenon in specialized language. The reason perhaps lies in the fact that specialists in the field, who can distinguish between the variants of a term, are usually not interested in this type of work, or are linguistically unprepared for it. On the other hand, linguists, who wish to take on such a task, often lack sufficient knowledge of the specialized field, and thus, are unable to determine regularities that underlie processes of variation in specialized communication.

Although specialized language initially aspired to the ideal of having one linguistic designation for each concept with a view to imbuing specialized communication with greater precision, reality has turned out to be quite different. The same concept has often given rise to many different types of linguistic designations.

A case in point is the concept of HIGH-DOSE CHEMOTHERAPY, which in English (as well as other languages, as a wide variety of different designations such as *high-dosage chemotherapy*, *intense chemotherapy*, *dose intensive chemotherapy*, *high intensity chemotherapy*, etc. This is just one of many examples of the proliferation of terms referring to the same idea. Although in the same way as in general language, it is possible to establish reasons for terminological variation based on user-based parameters of geographic, temporal or social variation or usage-based parameters of tenor, field, and mode (Gregory and Carroll 1978), this is not the whole story.

Faulstich (1998) underlines the need to analyze terms both synchronically and diachronically with a view to systematizing terminological structures which change over time. This would reconstruct the conceptual structures of the period of time analyzed. However, terminological variation occurs for reasons that are often considerably more complex and difficult to explain. Freixa (2006: 52) classifies causes for terminological variation in the following categories:

- | | |
|---------------------|---|
| I. Dialectal | Caused by different origins of the authors |
| II. Functional | Caused by different communicative registers |
| III. Discursive | Caused by different stylistic and expressive needs of the authors |
| IV. Interlinguistic | Caused by contact between languages |
| V. Cognitive | Caused by different conceptualizations and motivations |

Along with dialectal variation resulting from geographical, temporal, and social contexts, she also mentions functional, discursive, interlinguistic, and cognitive variation. Functional variation basically refers to registers described in terms of field, tenor, and mode. Discursive causes for variation are linked to style and include the use of terminological variation in order to avoid repetition, whereas interlinguistic variation may occur when a language is in close cultural contact to another. This type of contact foments the coexistence of a term and a loanword, which in Spanish is the case of *voleibol* (English loanword) and *balomvolea* (Spanish term), both of which compete in Spanish as terms for the sport of volleyball. Finally, cognitive reasons may generate terms that represent different perspectives or even different ideologies, According to Freixa (2006: 65), this is reflected in the creation of euphemisms for negative concepts (e.g. *staff downsizing*, *redeployment of labour*, *staff slimming*, etc. instead of *layoff*).

Nevertheless, there are certain types of variation that do not appear to fall into any of these categories such as morphological variants, orthographic variants, ellipted variants, abbreviations, graphical variation, variation by permutation, etc. (Bowker and Hawkins 2006: 81). Their use in texts often seems to be random and not to respond to any pattern or regularity. Without a doubt, a more in-depth study of the pragmatic dimensions of terms is necessary to detect possible reasons behind terminological variation.

3.1. PRAGMATIC DIMENSIONS OF TERMS

The pragmatic dimensions of terms or specialized language units are those specifically pertaining to the use of utterances in oral or written texts.

These dimensions include frame, context, and construal, which by no means should be regarded as water-tight compartments. Terms belonging to different levels of specialization and knowledge fields access different conceptual configurations or frames, and appear in a given text type, which takes place in a certain setting or context to satisfy different user needs. The text sender configures his discourse with a purpose in mind and construes the information for a targeted group of text receivers. If the text achieves its purpose, user expectations are fulfilled by the speech act dominating the text.

To a great extent, the success of the specialized communication act is conditioned by the terms selected and the receiver's ability to make the right inferences and correctly interpret this information. It inevitably depends on the ability of the sender to correctly judge the knowledge that he shares with the text receivers, and his perceptions of their identity and location in time and space. As a result of his predictions and expectations, the sender chooses the terms to be used, and configures them to transmit a message in consonance with his interactional goals.

3.1.1. *Frame*

Within this context, *frame* refers to the conceptual network that any given term gives access to. The information in this network is the source of the underspecified meaning, whose peacock feathers are displayed in all their glory when the term is activated in a specific context. However, not all knowledge accessible by a term has equal standing. Certain aspects are more central than others.

According to Langacker (1987), there are four types of encyclopedic knowledge associated with a word: (1) conventional; (2) generic; (3) intrinsic; (4) characteristic.

- (1) *Conventional knowledge* is the extent to which a particular facet of knowledge is shared within a linguistic community.
- (2) *Generic knowledge* refers to the degree of generality associated with a particular word.
- (3) *Intrinsic knowledge* refers to the aspect of word meaning that makes no reference to entities external to the referent.
- (4) *Characteristic knowledge* refers to the aspects of the encyclopedic information that are characteristic of or unique to the class of entities that the word designates.

This classification can also be applied to specialized language. A case in point is the specialized concept of EROSION, which refers to the displacement

of solids usually by agents such as wind, water, or ice by downward or down-slope movement. In this sense, it is a process that is induced by an agent, and which affects a specific geographic or inanimate entity. Any process takes place over a period of time, and can be divided into smaller segments. In this sense, erosion can happen at a specific season of the year, and may take place in a certain direction.

According to Evans and Green (2006: 217), conventional knowledge is widely known and shared between members of a speech community. For example, conventional knowledge about erosion includes the fact that it moves soil and rock, and can leave its mark on the earth's surface, eventually carving out holes as big as the Grand Canyon. Non-conventional knowledge about erosion might include the fact that you went to the beach this summer in Malaga and found that half of the beach had disappeared because of a severe storm the previous month.

Generic knowledge is often also conventional because it can be applied to many instances of a particular category. For example, generic knowledge is that every minute of every day, the Earth is being changed by erosion. This knowledge applies to all types of erosion (water, wind, glacier, sea, and soil), and thus can be regarded as generic.

Intrinsic knowledge refers to the internal properties of an entity. The most Intrinsic property of erosion is the fact that it is a process, which may occur naturally or artificially. This means that it takes place over time, and can be divided into phases.

Characteristic knowledge is the degree to which knowledge is unique to a particular class of entity. For example, erosion is initiated by an agent (water, wind, glaciers, sea). However, glacier erosion is less characteristic than water or wind erosion since most people may live all their lives without ever catching a glimpse of a real glacier. In contrast, the effects of water and wind erosion can be easily perceived, and are obvious in everyday geographic contexts.

Encyclopedic knowledge is the result of the interaction of these four types of knowledge. However, according to Cognitive Linguistics, there is no pragmatic meaning as such because the selection of encyclopedic meaning is informed by contextual factors (Evans and Green 2006: 220), and is, thus, always a function of context.

The meaning of a word is constructed on-line as a result of contextual information, and is thus modulated by context. Evidently, in the following examples, *erosion* is understood in different ways.

- *Erosion* is a natural or human-induced process affecting the Earth.
 - (1) Erosion is an intrinsic natural process but in many places it is increased by human land use. Poor land use practices include deforestation, overgrazing, unmanaged construction activity and road or building. Land

that is used for the production of agricultural crops generally experiences a significant greater rate of erosion than that of land under natural vegetation

- *Erosion* is a medical condition affecting the human body.
 - (2) Cervical erosion occurs when the cervix is scraped, perhaps during intercourse or by an intrauterine device, or IUD.
 - (3) Dental erosion is the chemical or mechanicochemical destruction of tooth substance, which leads to the creation of concavities of many shapes at the cemento-enamel junction of teeth.

- *Erosion* is a stock price reduction and indicative of financial crisis.
 - (4) Market share erosion and declining street prices are evidence that channel conflict is becoming destructive. Channels are responding to excessive competition by deemphasizing the brand or by giving away too much in order to keep an account

Examples (1-4) show the modulation of the meaning of *erosion* in different specialized contexts, which by means of metaphorical extension, situates the term in different specialized domains, such as environmental science, medicine, or finance. The context activates certain segments of the frame of *erosion*, whereas other parts are not activated. For example, in the preceding examples in which erosion affects the cervix (2) and teeth (3), or the stock market (4), the most basic meaning of erosion is extended to these contexts.

3.1.2. Context

Context is one of those words, for which there is no universally accepted definition. According to Akman and Surav (1997), “denotation of the word [*context*] has become murkier as its uses have been extended in many directions and deliver the now widespread opinion that context has become some sort of conceptual garbage can”.

Here, context is regarded as a product of language use. Communication (and specialized communication as well) can thus be said to create contexts, and at the same time be context-dependent (Bateson 1972). In specialized language, context can be conceived as a *relational construct* in the sense of Fetzer and Akman (2002), which relates the specialized communication act to its surroundings and participants. It also helps to anchor linguistic designations to objective reality by providing background information. This situates the objects

designated, and explicitly relates them to each other as well as to the agents that use them and act on them.

An optimal specialized language context is one with a high level of informativity, about the specialized knowledge concept. It should also specify the pragmatic “situatedness” of the communicative act (Bach 1994, Cappelen and Lepore 2005, Mey 2001).

Even though ambiguity is eschewed in scientific texts, and text senders generally try to be as clear and informative as possible, the text (as a written or spoken message) never tells the whole story. Evidently, there is a great deal of meaning implicit in the context of the specialized communication event itself. In this respect, the analysis and subsequent structuring of information as represented by specialized knowledge units are motivated by a wide range of factors, such as the knowledge level, intentions, and expectations of the text sender, textual content, form, and function of the text itself, the assumed knowledge level of the text receivers and their ability to make inferences, norms of stylistic and textual acceptability in the specialized text system, etc, which are all part of the process.

3.1.2.1. Texts as contexts

Much terminological context is provided by the immediately surrounding text, as well as the text as a whole. To a certain extent, a context reflects the text sender’s intentions as well as his predictions of shared knowledge. Terminological contexts provide a better understanding of specialized knowledge units, and can be even more informative than meaning definitions. For example, the definition of the drug, Ranitidine, is the following:

- (5) **Ranitidine:** a histamine blocker $C_{13}H_{22}N_4O_3S$ that is administered in the form of its hydrochloride to inhibit gastric acid secretion (*Merriam-Webster Online Dictionary*).

Since the definition in (5) limits itself to the most basic information, the receiver only acquires a limited knowledge of the properties of the drug, such as its chemical composition and effect. However, the following excerpt from a research article (6) situates ranitidine in a more explicative context,

- (6) Ranitidine hydrochloride (Zantac®) is a histamine 2-receptor antagonist (H2RA) medication used in peptic ulcer disease therapy, acute stress ulcers, gastroesophageal reflux and related disorders. This medication is often used intravenously in the operating room and during recovery in

surgical departments or intensive care units, and orally in medical departments (Oliva et al 2008).

Example (6) provides the reader information not only about the type of medication, but also regarding the diseases ranitidine treats as well as its form and place of administration. This is why contextual information is important in any type of terminological database as a means of supplementing and enhancing definitions.

3.1.2.2. Context as a way to achieving interactional goals

Although the standard text function for scientific and technical texts is the informative function, this is certainly not the only one. In a specialized text, priorities are often centered on not only transmitting, but often justifying or arguing in favor of the validity of the information within the text. The language used should implicitly assert and guarantee the reliability of the information in the text. In other words, the text format and content should establish a context of complicity, which is gains the receivers' confidence and trust.

One way of establishing such a context and conveying the impression of reliability and trustworthiness is the precise use of terminology at the right level of specificity so as to convey the message in a clear, direct way. This is an implicit statement that the author of the text is an expert on the subject and is transmitting relevant information. When done well, this strategy can be extremely successful because it implicitly transmits the message that the text sender knows what he is talking about, as is the case in the following introduction to a research report:

- (7) The statistical strength or weakness of climate studies is usually detailed in research papers. However, it is not uncommon for a graph of an especially newsworthy trend to be reproduced in the media. [...] While trends published in scientific articles have undergone review for scientific and statistical robustness, it is easy for the untrained eye to see apparent trends in other similar, relatively short time series that may not be real. The aim of this paper is to examine the apparent trend in a simulated annual climatic time series using random numbers (Comrie 2008).

Example (7), irrespective of its conceptual content, is an example of the introduction of a well-written scientific research report. The author makes a basic assertion, and succinctly presents a problem of the existence of both real and apparent trends in climate data. At the end of the paragraph, he states the

aim of his paper, which is to carry out a study in which random numbers will be used instead of actual data and see whether or not any trends appear.

The clear and coherent structure of his text, which goes from a general assertion to specific examples, makes the information clear even to a non-scientist. However, in poor scientific writing, such a strategy is often overdone. Long sentences combined with an abstruse labyrinth of conceptual mumbo-jumbo cause a breakdown in communication and produce precisely the opposite effect. This is what occurs in the following text on the electrical breakdown of nitrogen:

- (8) The goal of the work was to confirm the nature of electrical breakdown of nitrogen in uniform fields at high pressures and electrode gaps which approach those obtained in engineering practice, prior to the determination of the processes which set the criterion for breakdown in the above-mentioned gas in uniform and non-uniform fields of engineering significance (Example taken from Alley 1996: 86).

Although in (8) the information is all there and there are no grammatical errors, by the time the text receiver arrives at the second *which*, the reader is cognitively exhausted. Even expert engineering knowledge cannot save the day when the excessive syntactic subordination makes the meaning of the text so difficult to understand.

However, for the textual context to achieve all of its communicative objectives, coherent semantic and syntactic structures are just one of the ingredients. The information must also be packaged in an acceptable (and attractive) format. In this sense, the text can also be regarded as a visual object. When successfully processed by the text receiver, the salient features of the text-object should correspond to and resemble those of a similar text profile stored in the receiver's long-term memory. In fact, this is an extremely powerful inference-making mechanism, which transfers all of the properties of the stored text profile to the text-object being perceived. Often, this type of resemblance is responsible in itself for the success of the communication act since it automatically fosters the text receiver's belief in the authority of the message source and the veracity of its contents.

For example, this is the strategy used in *phishing* e-mails written by people, whose primary interactional goal is to deceive readers into surrendering their bank account information by making them believe that the message was emitted by a prestigious source. An example of such an e-mail is the following:

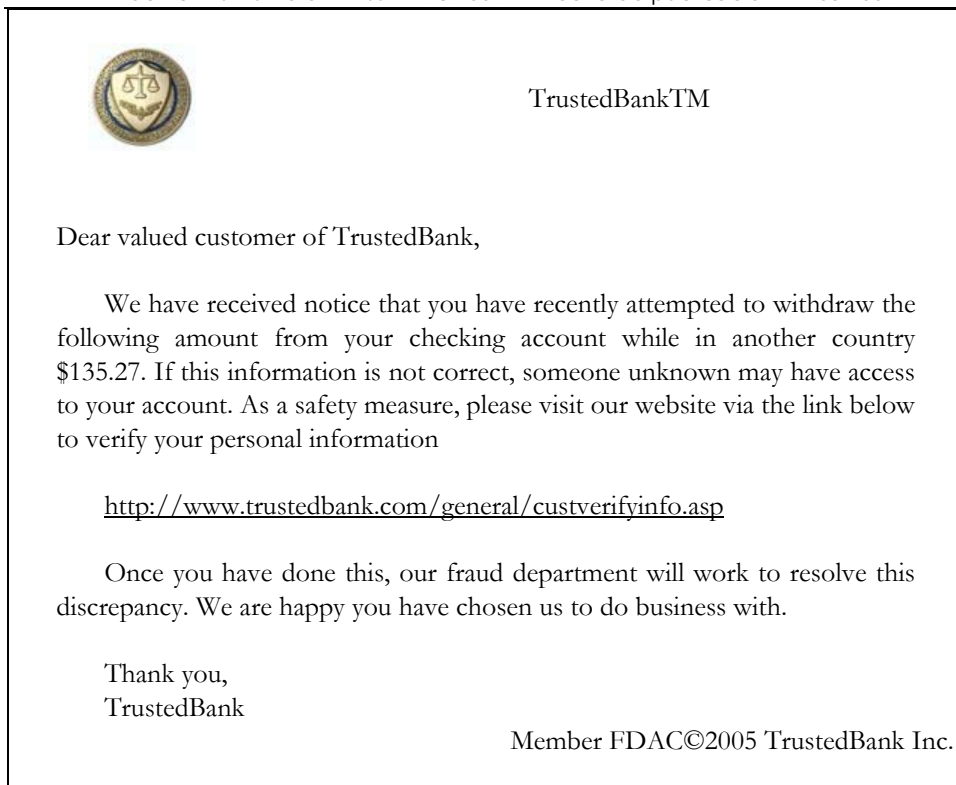


Figure 1. Example of a phishing e-mail

Receivers are lulled into a trusting mode because the elements in the text lead them to believe that the text source is a prestigious financial institution. This belief is inspired by text format, symbols (a logo), a website address, a precise numerical figure, and linguistic elements and structure, responding to an appropriate interactional frame for this type of formal communication.

An even more eloquent example of how language, textual form, and terminology can lend authority and credibility to utter fiction is the famous spoof scientific paper, "The Endochronic Properties of Resublimated Thiotimoline", written by Asimov in 1948.

- (9) The correlation of the structure of organic molecules with their various properties, physical and chemical, as in recent years afforded much insight into the mechanism of organic reactions [...].The solubilities of organic compounds in various solvents has become of particular interest in this connection through the recent discovery of the endochronic nature of thiotimoline (Asimov 1972: 111).

The article, which describes experiments on thiotimoline, a totally fictitious chemical compound, has the format as well as the syntactic and semantic characteristics of a serious research article. It even includes charts, graphs, tables, and citations of fake articles in nonexistent journals. The results presented in the tables verify the patently absurd hypothesis that thiotimoline is so soluble that it dissolves in water 1.12 seconds before it even comes in contact with water.

- (10) Feinschreiber and Hravlek in their studies on the problem have contended that with increasing hydrophilism, the time of solution approaches zero, That this analysis is not entirely correct was shown when it was discovered that the compound thiotimoline will dissolve in water – in the proportions of 1 gm./ml. – in *minus* 1.12 seconds. That is, it will dissolve *before* the water is added (Asimov 1972: 111).

Evidently, if the absurd assertion, formulated quite directly in (10), had been made outside the context of a specialized scientific paper, and had not been backed up by the impressive display of (false) experimental results, it would have been questioned by anyone with a certain degree of common sense. However, despite the fact that the text was published in a journal titled *Astounding Science Fiction*, a great many readers were persuaded of the veracity of the information in the text, and subsequently requested access to the (nonexistent) journals cited in the article. Asimov's text was a perfect example of a scientific article in every way except for the fact that the information contained in it was absurd. It is also an example of how a suitable linguistic and textual context can provide guarantees of the validity and reliability of textual content.

3.1.2.3. Construal

Construal is related to speaker perspective, the speech act involved, and the communicative intention of the sender when he uses one term instead of another with a similar meaning. As such, it is closely related to the status, shared knowledge, intentions, and expectations of the participants.

Many specialized texts are written by experts for a group of receivers with some level of specialized knowledge. The amount of presupposed knowledge is implicit in the extensive use of terms without definitions. In the case of specialized communication, the existence of a nomenclature (terms and standardized expressions that the sender knows that the receiver will recognize and understand) is indicative of this assumption of shared knowledge. However, in the popularization of scientific knowledge, the same text can be

construed in another manner for another set of receivers with less specialized knowledge. This alternate construal is evident in the use of more general, superordinate terms belonging to the same category.

For example, specialized oncology texts (written for doctors) on chemotherapy treatments for lung cancer may name combinations of drugs (*etoposide, cisplatin, carboplatin, cyclophosphamide, etc.*). The same information formulated for patients remains at the level of the superordinate term (*drug*) since it is the most basic level.

SPECIALIZED MEDICAL TEXT [FOR DOCTORS]	NON-SPECIALIZED MEDICAL TEXT [FOR PATIENTS]
<p>CHEMOTHERAPY</p> <p>COMBINATION → CHEMOTHERAPY</p> <ul style="list-style-type: none"> → EP [etoposide, cisplatin] → EC [etoposide, carboplatin] → CAV [cyclophosphamide, doxorubicin, vincristine] → CAE [cyclophosphamide, doxorubicin, etoposide] → ICE [ifosfamide, carboplatin, etoposide] 	<p>CHEMOTHERAPY</p> <p>→ drug</p>

<p>(11) Combination chemotherapy with one of the following regimens and chest irradiation (with or without PCI given to patients with complete responses): The following regimens produce similar survival outcomes: EP or EC: etoposide + cisplatin or carboplatin [17,18] CAV: cyclophosphamide + doxorubicin + vincristine [19] CAE: cyclophosphamide + doxorubicin + etoposide [20] ICE: ifosfamide + carboplatin + etoposide [21]</p>	<p>(12) Chemotherapy is the most common treatment for all stages of small cell lung cancer. Chemotherapy may be taken by pill, or it may be put into the body by a needle in the vein or muscle. Chemotherapy is called a systemic treatment because the drug enters the bloodstream, travels through the body, and can kill cancer cells outside the lungs, including cancer cells that have spread to the brain.</p>
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Table 1. Chemotherapy texts for doctors and patients

Each term in (11) and (12) can be said to contain the pragmatic feature of its membership in a particular domain, and refers either implicitly or explicitly to other related terms, as well as to the whole structural configuration of the domain. Both texts represent alternate construals of the same information. In specialized language, construal or speaker perspective often reflects the knowledge shared by the participants in the act of communication. This signifies that texts can be transmitted in two very different ways depending on the presupposed knowledge of the text receivers.

Another way that construal can be understood is through the use of specialized language as a way of conveying ideology. This can be seen in the text in (13), which is a description of alternative type of cancer therapy within the context of Ayurveda or Indian medical science.

(13) The Ayurvedic Approach to Healing

The physical level

Ayurveda approaches the patient on several levels of causes, including physical, emotional and spiritual. The most superficial level is approaching the symptom, which is the tumor itself. [...]

The practitioner must also decide if the patient requires tonification or purification therapy. Strong patients with **ama** require purification therapies [...] Purification therapies reduce **ama** along with excess **dosha**. By cleansing the **srotas** and the subtle **nadis** of the body, **prana** can flow freely and support the healing process.

Purification is a reducing therapy, reducing the **dhatus** of the body as well as the **doshas**. Since this weakens the body, it should only be performed in patients who are strong enough. Purification therapy can be

similarly viewed as cytotoxic, meaning it destroys cells. When applied properly, cellular destruction is directed primarily toward the cancerous cells.

[<http://www.ayurvedacollege.com/AyurvedaandCancerPartIII.htm>]

The terms used in (13) (*ama, dosha, prana*, etc.) encode specialized knowledge as well as the author's ideology regarding healing the human body. The medical text, which describes how to treat and alleviate malignant tumors, is evidently construed for those who believe in natural medical treatments, and who are familiar with the knowledge represented in the text. The Hindu terms without any definition stand in evident contrast to "cytotoxic", a more conventional medical term, which does appear in the text with an explanation even though it is more transparent than the others.

In (13), the use of Ayurvedic terminology in the form of loanwords gives the text message an almost religious dimension. Besides conveying the principles of Vedic knowledge inherent in the terms, it also is a signal of the ideological content of the text, which has the quality of an incantation and seems to convey the implicit promise of healing. The following segment of the text (14), in which English terms are substituted for the Hindu loanwords does not produce quite the same effect:

- (14) The practitioner must also decide if the patient requires tonification or purification therapy. Strong patients with **toxins** require purification therapies [...] Purification therapies reduce the **toxins** along with excess of **disease-causing agents in the body**. By cleansing the **body channels** and the subtle **pulses** of the body, **life force/cosmic energy** can flow freely and support the healing process.

The text excerpt in (14) has been cleansed of terms with a clear ideological content, and thus can be said to have a somewhat different construal.

4. CONCLUSION

This article has offered a description of sociocultural and cognition-oriented pragmatics, and has explained how both perspectives can be applied to specialized language. The reasons for terminological variation, either in the case of individual terminological units or entire utterances, can be found in the analysis of situational parameters, such as frame, context, and construal.

Since terminological units are specialized language representations, the concept of frame is especially relevant as the conceptual network accessed by the term. Such core knowledge can be analyzed in terms of the four types of encyclopedic knowledge specified by Langacker (1987), and is the source of the underspecified meaning of a term, which acquires its full dimensions within a specific context.

Context is a product of language use, and is used to represent the meaning of specialized knowledge units. In this sense, contexts can be either knowledge-rich or knowledge-poor, depending on the information contained. However, contexts are also a means to achieving interactional goals. This applies to both the language and the structure of the text. The text sender's use of terminology as well as his choice of text format can stand as a guarantee of the reliability and veracity of a text.

Construal is related to speaker perspective, and is reflected in the way a text sender formulates his message for one group of receivers or another. Specialized texts can be construed in a variety of different ways for receivers with different levels of technical or scientific knowledge. A specialized text and the terms in it may also reflect the ideological stance of the text sender.

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