

Parallel session 3. Contributions and challenges of cultural diversity in public communication of science

MISUSE OF SCIENCE IN ADVERTISING

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Abstract

Many companies use science to bias the opinion of consumers regarding their products. They take advantage of the poor scientific and technological knowledge of the population for their benefit. We analyzed several cases: (a) Medical products and methods (advertisements and articles in a monthly magazine distributed with a newspaper). (b) Dairy desserts based on yogurt pasteurized after fermentation (advertisements and scientific articles). (c) Products of technology (advertisements in newspapers and brochures). (d) A distorted image of scientists.

Key words: advertising, science and technology misuse, public perception of science

Text

Companies may misuse science and technology in different ways to reach their objectives. They can disguise advertisements in the shape of a scientific text; show properties that the products advertised do not have; and emphasize what are the usual properties of products of the same kind. We will comment on several cases we analyzed.

(a) Medical products and methods

Salud & Vida (Health & life) is a monthly magazine distributed with *La Vanguardia*, a newspaper of wide distribution in Catalonia. It comprises

several sections including “Currently”, “Health-prevention”, “The doctor informs you”, “Health leisure”, “Dietary issues”, “Welfare-fitness”, “Welfare-beauty”, “Welfare-tips” and “Flashes”. We analyzed four 2003 issues, of which, full-page advertisements were a mean 22.59% of the total number of pages of the magazine. Each issue included also several half-page or a-quarter-page advertisements. The products advertised were related mostly to beauty; they included dentistry (whitening of teeth), spa, body shapers, plastic surgery and weight control. The “Currently” section, along with some health tips and news items, comprises also advertisements disguised as news. Even more, the section “The doctor informs you” is always an advertisement of some health center, and other sections hide often also advertisements under the shape of information articles.

In the 1990s, *La Vanguardia* used to publish a weekly magazine on science of great quality, and later it published also one on medicine. Those publications were useful tools to improve the public understanding of science. On the contrary, *Salud & vida* is a kind of catalog of products that apparently improve our health or help us to be in good shape and it advertises therapies that do not have a scientific basis.

(b) Dairy desserts based on yogurt pasteurized after fermentation.

Although many studies have reported that probiotic effects of yogurt are due to the presence of live bacteria, some companies started marketing pasteurized yogurt claiming that their products had the same qualities as non-pasteurized yogurt. They disregard the standards approved by the FAO and WHO Codex Alimentarius Commission regarding the nomenclature of yogurt subjected to pasteurization. In addition, they disregard the opinions of experts, and they even fund research to find some results that might support their claim that the nutritional and probiotic properties of yogurt are the same in traditional yogurts that in those pasteurized. By definition of what yogurt is, the lactobacilli that ferment milk into yogurt must be alive in the final product. This is the reason why yogurt must be kept at low temperature. One of the biggest dairy Spanish companies, which produces that yogurt-derived desert, shows pasteurization as an added value for its products (“they do not need

cold nor additives for preservation”, “they keep the whole nutritious values of yogurt”).

In the last times, that company has changed its advertising tactics: Instead of focusing their advertising campaigns on the beneficial effects of the so-called “pasteurized yogurt”, now they insist in the prebiotic properties of other products, such as orange juice and soy drink, which they claim to promote growth of “good” bacteria that are already present in the intestines.

(c) Products of technology

The terminology used to advertise products of technology such as computers, some appliances and cars is often incomprehensible to lay people. Some terms, expressions, as well as abbreviations and acronyms that we found in advertisements of cars were: TDI engine, a maximum torque of 320 Nm, Bi-zone climatronic, Tempomat cruise control, triptonic gear, ABS, SAFE, ASR, ESP. In computer’s advertisements, along with familiar terms and acronyms such as DVD, CDROM, MP3, wireless, firewall, ethernet, we found others such as IEEE1394 port, WLAN, SmartMedia, VGA adapter, GPU, ATI Mobility Radeon, TFT screen, digital BBE processor, and DRC technology. The more incomprehensible the description of cars and computer are, the more advanced and updated they seem to be.

Lay people get the impression that technology is the province of an elite. They are not acquainted with those terms, but do not dare to tell that they see the emperor naked and to ask to have that jargon translated into a comprehensible language.

(d) Scientists as evil intelligence

“We cannot accept that the lack of collaboration of researchers delays discoveries.” That was the sentence at the top of a full-page advertisement in *La Vanguardia* (29 January 2004, p. 7) As a matter of fact, the advertisement was the announcement that drug makers Sanofi-Synthelabo and Aventis were planning to merge to become the largest European pharmaceutical company. Placards in subway stations announced in spring 2003 a play station game whose name was written in tiny characters at the bottom of the advertisement. The text that most attracted the attention of the “metro” travelers stated: “If

you think your baby is a little monster, wait until he or she grows up. If you knew that this baby would become a mad scientist able to create a lethal virus that would erase life from the Earth surface, what would you do?" Advertisements of these kinds convey a distorted image of scientists, who are seen as monsters capable of destroying the world with their inventions. This image makes it difficult that people realizes that scientists are neither better nor worse than other professionals are, and that society improves due to scientific and technologic development.

Conclusion

Scientific culture would enable people understand the real scope of science and to perceive when science is misused for business purposes.

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**CHALLENGING REASON: HOW DO YOU COMMUNICATE SCIENCE
IN A MAGIC COUNTRY LIKE MEXICO?**

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Summary

How can a scientific culture be fostered in a land possessed by figments of the imagination, an ancient, multicultural nation immersed in the animistic, prelogical thinking? What should a novelist do if he wants to promote an idea of progress in the society in which he lives? Perhaps the rationale that guides him is that having a certain level of democratic life is not enough to guarantee the existence of a new scientific culture.

Key Words: multiculturalism, scientific illiteracy.

Text

In *The Magic Mountain*, Thomas Mann introduces a strange character, Leon Naphta, who runs up against Settembrini, an advocate of the Enlightenment and a member of an "international league to organize progress." Naphta is a Jewish convert who later enters the Jesuit Order. Naphta does not believe in progress, peace or humanitarian action. In his messianic frenzy, he preaches the virtues of illiteracy. Against "western" ideals, professes a passivity that he himself describes as "oriental". A sort of terrorist mission aiming to restore a pre-modern world where work had a virtuous value and action was only the prelude to contemplation. A world in which all that mattered was fate, a world remote from the "satanic kingdom of money and its business".

Today, like Naphta, Mexico is experiencing a vulgar materialism. Faith is the organ of knowledge, although the immense majority of young people, both in the cities and in rural areas, do not seem to believe in anything special, and they devour everything with parsimony and implacable speed. When we walk on the surface of volcanic soil, we seem to hear the moans of the rocks on which we tread and we try to apologize for our impertinence.

Mexico was a multicultural country even before the arrival of the Spaniards. Many centuries ago the people of Mesoamerica were trading with the locals who

already inhabited the southeastern coasts. The cultural shock with Europe in the XVI Century produced contradictory sentiments both in the peninsula and in the new colonies regarding the role of the intellect. The new American culture dedicated itself to the revindication of scholasticism, seeking to see Copernicus fall, vanquished by Ptolemy. Today, this can still be seen, for example, in the State of Oaxaca, a region in fourth place in the world in biodiversity, where 16 different ethnicities still live, each with its own language; some of their members also speak Spanish. Nevertheless, Oaxaca is one of the poorest, most backward states in the country, and the emigration of its Mixtecan Indians in search of the American dream is one of the most numerous in recent decades.

Anyone who is concerned about the perception citizens may have of science and technology, such as those who themselves are the communicators, should also know the settings in which these disciplines are conceived. Without an orderly understanding of humanity's social history and its cultural and religious manifestations, it is useless to try to communicate scientific knowledge. It is the best way to expose the bridges for communicating with the public to the corrosive agent of twisted meanings and semi-ignorance. As we all know well, in that case it is better to be completely ignorant.

That is why I launched into the adventure of clarifying substance in a highly surrealistic country where prelogical thinking predominates. I must confess that from the beginning, I knew that writing about science for the most influential media in the country would hardly be enough to ensure the application of a code of values in my works or those of anyone else. Fortunately, the opening experienced by Mexico at the end of the 1980's, following the irrational repression in 1968 and 1971, allowed me to establish a code based on more profound, impersonal issues that have to do with the manner of approaching a scientific topic, beyond just wanting to explain a disease or in order to entertain those who can understand the strange, noble ideas that are derived from the discoveries of science.

Thus, I did what many years later Bruno Latour and Steve Woolgar would call "lab life". I had to study every scientific subject in order to be able to go back to the researchers to ask questions that would not only be relevant but truly profound, seeking to achieve the "difficult simplicity" to which St. John of the Cross and many other writers have aspired in practicing the literary craft, always directed towards an audience.

It is said that a society that does not produce much science cannot communicate it well. What matters to us is not cosmetic and corporatist bias but encouraging the consolidation of a scientific culture. Not only because we are curious human beings, but also because some of the most interesting ideas and most stimulating findings have to do with science. Even for reasons of survival. Democracy by itself is not a guarantee of anything; it must proceed very quickly to become a meritocracy so that the social order will not be broken, and so the Naphtas of today will not have arguments for thinking that science is a faith, just like the rest,

although stupider and more evil than any other. As the physicist Jorge Wagensberg said, “Eating and learning go hand-in-hand, not one ahead of the other.” So, if we want there to be wider, more alert communication capable of building the bridge, the first thing there must be is an historical stimulus for scientific research, and even more so for education, and the rest will follow, as the Bible says.

Acknowledgements

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**CULTURAL DIVERSITY IN SCIENTIFIC COMMUNICATION:
ENGLISH VS SPANISH MEDICAL RESEARCH PAPERS**

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Abstract

Some authors believe that there are considerable differences in styles of writing in particular cultures (e.g., see Mauranen 1993b) and, in fact, some others see non-native speakers fail to modulate their writing (Bloor & Bloor 1991 and Hyland 2001). The appropriate use of hedging in scientific discourse is a vital skill for writers presenting their knowledge in the discourse community, as it both qualifies categorical commitment and facilitates discussion with the audience. In our presentation we will examine this rhetorical device from a crossgeneric (Case Report/Research Paper) and a crosslinguistic (Spanish/English) point of view. The results of this study seem to indicate that hedging may vary across these two languages and cultures. Key words: Scientific Communication, Cross Cultural Studies and Languages for Specific Purposes (LSP).

Text

Introduction

“Hedges are words or phrases whose job is to make things fuzzier”(Lakoff, 1972)

The earliest definition of the term was by Lakoff in 1972 and since then many other authors have been studying this rhetorical phenomenon in different languages and genres (Salager-Meyer 1994 and Piqué et al. 2002 among others). However, after reviewing the literature available on the topic we have observed that most of the studies have been focused on the way scientific writers modulate their discourse in English. A possible explanation could be that nowadays there is a dominance of English in scientific research publications hence the need of non natives to publish in this language.

The aim of this study is to explore the hedging differences and similarities in medical RPs and CRs in English and Spanish. Therefore, in this paper I will examine the range of expressions that are commonly known as “hedging”: expressions whose aim is either i) to allow scientists to present their knowledge cautiously, ii) to be “vague”, iii) to encourage dialogue with the audience or iv) to follow genre conventions.

Methodology

So as to achieve our goal a Spanish corpus of 20 RAs (Research Articles) was selected from six different Spanish medical journals: 10 original RP (Research Papers) and 10 CR (Case Reports). The articles were chosen from 6 outstanding medical journals in Spanish: Archivos de Bronconeumología and Medicina Clínica, among others. Our English L2 corpus consisted of 10RAs from outstanding journals such as, British Medical Journal, Chest..

As a second step in our study, we developed a hedging taxonomy in Spanish using Salager-Meyer's model (1994) as a starting point. Her taxonomy included: 1) Shields, such as “to appear”, “to seem”, “probably”, “likely”, “to suggest”, “to speculate”.2) Approximators, for instance “approximately”, “roughly”, “somewhat”, “often”, “occasionally”.3) Author's personal doubt and direct involvement, for example “I believe”, “to our knowledge”.4) Emotionally-charged intensifiers, as in “dishearteningly weak”, “particularly encouraging”.5) Compound hedges, as “It may suggest that...”, “It would seem somewhat unlikely that...”. However, in our taxonomy we didn't include her fourth or fifth category but added a fourth category: Agentless strategies and we focused on a pragmatic rather than a lexical point of view.

CATEGORIAS PRAGMÁTICAS	FUNCIONES EN EL DISCURSO	ÍTEMS LINGÜÍSTICOS	NIVEL LINGÜÍSTICO
ESCUDOS	El autor utiliza estas expresiones para protegerse y anticiparse a una posible reacción negativa (“boomerang effect”) por parte de la comunidad discursiva a la cual pertenece. (Salager-Meyer, 1994)	1. a) verbos modales b) semi-auxiliares c) adjetivos de probabilidad d) adverbios de probabilidad e) verbos epistémicos	
			A) LÉXICO

<p>APROXIMADORES</p>	<p>Se emplean para indicar probabilidad e implicar cierta “vaguedad” en las afirmaciones. (Fortanet, Palmer y Posteguillo, 1998)</p>	<p>2. Adjetivos y/o Adverbios y locuciones adverbiales de:</p> <ul style="list-style-type: none"> a) cantidad b) grado c) frecuencia d) tiempo 	
<p>EXPRESIONES DE DUDA PERSONAL E IMPLICACIÓN DIRECTA DEL AUTOR</p>	<p>Sirven para enfatizar la dimensión interpersonal: evaluar y valorar el propio material, así como para negociar el estatus de los postulados de uno. Ferrari (2003)</p>	<ul style="list-style-type: none"> a) condicional b) subjuntivo c) marcas de 1ª persona (posesivos, desinencias y pronombres) <p>Formas no personales*</p>	<p>B) MORFOLÓGICO</p>
<p>ESTRATEGIAS DE DESAGENTIVACIÓN</p>	<p>1) Sirven para modificar e incluso esconder la actitud del escritor hacia las proposiciones presentadas en el texto. 2) Sirven para esconder quién es el responsable del valor de la</p>	<p>* Las formas no personales pertenecen al nivel morfológico pero su función es desagentivadora.</p> <ul style="list-style-type: none"> a) voz pasiva desagentivada y pasiva refleja b) despersonalización 	<p>C) SINTÁCTICO</p>

	verdad de lo que se está diciendo. Lewin (1998)	(verbos activos con sujetos inanimados y nominalizaciones)	
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Table 1. Hedging taxonomy proposal in Spanish.

Our data and results

After carrying out a crossgeneric and a crosslinguistic analysis of hedging, we have come up with the results we show in Table 2 (the percentage of hedging according to the section of the RAs or CRs they appear) and Table 3 (the frequency of hedging types in the total hedging scoring throughout the three different corpora)

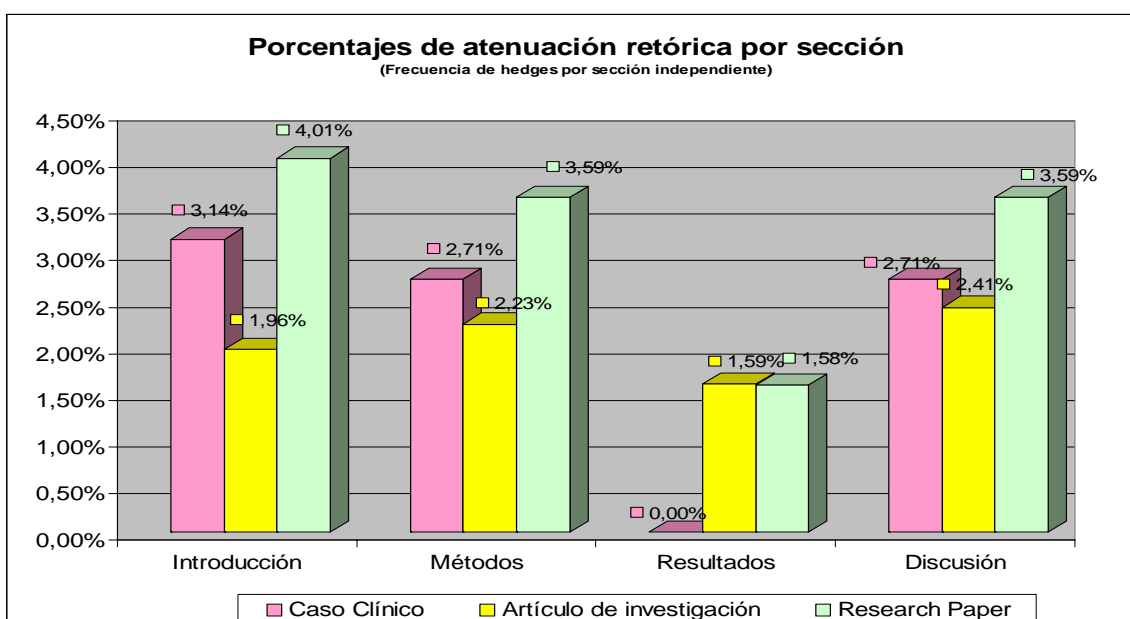


Table 2. Percentage of hedging according to IMRD section

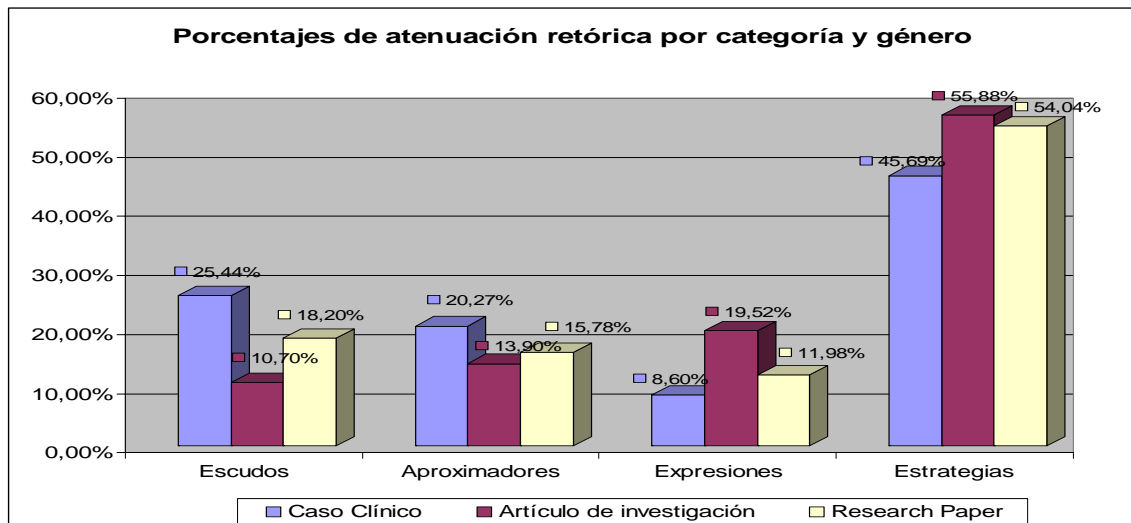


Table 3. Frequency of hedging pragmatic categories according to genre (RP and CR) and language (English and Spanish)

Conclusions

According to our results Spanish and English scientists seem to modulate their writing differently as former tend to hedge much less and thus, may sound slightly more assertive than their Anglo-Saxon counterparts. However, we could relate this greater modulation of English scientists to a historically and culturally entrenched tradition founded on skepticism, doubt and refutation.

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TRANSFER OF SCIENTIFIC INFORMATION FROM ENGLISH INTO SPANISH

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Abstract

Translation is sometimes considered as a process to transfer contents from a source language to a target language. It is widely known that it involves other processes that include knowledge of a cultures, society, policies, etc. Therefore translation is another way of communication. Medical translation is a specialty within this area that must be also considered from the point of view of science communication. Translators have to take important decisions when translating medical-related texts, such as the selection of words that scientists, journalists, teachers or other science communicators will use in their daily activity; the use of structures that belong to the common target language; the translation from a culture to another one.

To follow the evolution in the Spanish medical discourse when the information comes from English sources; to detect the possible changes that have cultural and social implications.

This study shows how the information from journals is transformed until its publication in the Spanish general newspapers. Corpora includes articles from Nature, press releases and news items from Spanish newspapers about stem cells. The analysed aspects are basically the selection of the terminology and discourse related to social and cultural aspects.

Key Words: medical discourse, translation, newspapers

Text

Introduction

When newspapers publish medical news, they usually use as sources press releases (e.g. Nature, Science, The Lancet), news agencies, sometimes as a secondary source (EFE, Reuters), and the original paper published in several journals. When it comes to publish the news in Spanish newspapers, the original information in English included in the journal can suffer some modifications during the translation process (terminology, register, structure, etc.). They may eventually lead to conceptual errors. Articles analyzed in this

study tackle the topic of stem cells that is increasingly present in the newspapers due to its health implications for the society.

Objectives

This proposal aims to analyze the translation process followed by ideal medical specialized journalists (Physician, journalist, translator, etc.) from the original article to the published news item.

Method

To create the corpus for this project a press release from Nature and a series of related articles published in different Spanish newspapers have been selected: El Periódico, ABC, El Mundo, Europa Press, La Razón, Diario de Sevilla, La voz de Asturias, Córdoba and Diario Médico. The last title from the list is not a general newspaper, but a publication addressed to the medical community. Diario Médico has been considered a second source of information to better understand the contents of the original paper from Nature.

The analysis has been performed on a comparative basis, focusing on the following aspects of the discourse:

- Terminology: parameters to describe each aspect are specialized, general
- Register
- Structure

All articles were published on December 10th and 11th, 2003 in their corresponding sections: *sociedad* or *salud*.

Results

According to the three aspects considered for the analysis, the main results were as follows:

El Periódico used a popularizing discourse, including strategies to help the reader to understand concepts such amplification, that is the addition of more signifiers to cover semantic gaps [(e. g. *células reproductivas (óvulos y espermatozoides)*)].

There are other aspects revealing the intervention of other voices, which were not in the original paper such as quotations.

As for terminology, it is not highly specialized. The author of the article uses words used in everyday language (e. g. *típica cola*, referring to flagellum or *hembras*, referring to the female mice).

Europa Press, a news server that issued an article from the abstract of the original English article, used a more accurate terminology, although it included some calques (e. g. continuously growing lines as *línea continuamente creciente*). It must be highlighted that this news server has a section entitled *salud* (health) differently from the other publications that include this kind of news in *Sociedad*.

La voz de Asturias and Córdoba used the same source as El Periódico. They only showed minor differences which are not relevant for the analysis.

El Mundo, La Razón and Diario de Sevilla used also the same source of information. The most remarkable difference among them is that La Razón used a discourse closer to a general public (e. g. *rizar el rizo*).

In the ABC, the lack of specialized terminology was the main feature. The article seems to be a summary of the abstract of the original paper. In order to simplify a concept that could be hard to understand, it reduces the whole explanation in a few empty words (e.g. *mediante un complejo proceso*).

It must be pointed out that some terminology mistakes were found during the analysis. The source of these errors should be studied from the process of transformation of the information taking also into account translation aspects.

Conclusions

This preliminary study is a first approach to an analysis of the process that an original article suffers from its publication in a journal to its appearance in the general press.

In order to carry out this proposal of analysis, the criteria must be more accurately defined.

According to the aspects considered previously, we consider there is a huge field of analysis that could be done to better understand this process.

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DICYT: A PROPOSAL FOR REGIONAL SCIENCE COMMUNICATION

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Abstract

Based upon a theoretical framework of specialized and regional communication, we propose a regional oriented science communication model, in terms of purposes, media products and strategic actions, with the objective of reaching a more efficient representation of the local reality and a better public understanding of science. Applied to practice, we present DICYT (Regional Agency of Scientific and Technological Communication), whose main challenge is to promote scientific and technological culture in Castile and Leon, Spain, through the diffusion to local mass media of results of the scientific research and technological projects, both public and private, generated in the region.

Key words: communication, theoretical framework, cultural diversity

Text

1. Regional communication: theoretical framework

What is the place for regional science and technology in the present globalized and impact and sensationalism driven mass media scene? In a study of the regional press in Castile and Leon, Sabbatini et al. (2004) found that there is an imbalance between major questions in science and technology, present in newspapers through editorial genres and through social problem and policy framings, and the information found in news, which theoretically should support such a public debate in an informed way. Scientific and technological news were found to be communicated mainly through short pieces of information, provided by international news agencies and resulting in an

absence of contextualization, even opposing views of the same subject. So, what strategies could be used to harness a true regional science communication, one that could serve as a bridge between society and the science and technology system, in order to place the scientific knowledge at the heart of a region's development?

2. The DICYT proposal

In this context, we propose DICYT, Science and Technology Communication Agency, a part of Novatores Project, developed by Junta of Castile and Leon and Salamanca University (Quintanilla et al., 2004) and whose objective is to create a Regional System for Science and Technology Communication, bringing science and technology activities closer to society and harnessing its social valuation.

As a communication agency, DICYT has as final users the mass communication media (radio, press, television), with special interest in those that carry out their activities in the region. To these clients, DICYT offers exclusive and ready to use information about science and technology related subjects in different genres (news, articles, interviews), completed with additional elements like infographics, video and audio clips.

Its main contribution to the region's public institutions and companies is to establish a reliable communication channel, with information being prepared by specialized science communicators, and being an agile method for communicating advances in the science and technology that the rest of the society should know.

3. Technical infrastructure and operation

The DICYT agency offers its services through a Web page (<http://www.dicyt.com>), with access granted only to users with a personal registration password: journalists in communication media and also to its many collaborators. The Internet platform has a double objective: by one side, to allow the agency's journalists and editors to have a content management tool, common to their labour. On the other hand, to allow clients quick and time-space independent access to news. In the future, information will reach each user through electronic mail, according to a profile with declared interests on subjects or spatial coverage. The platform has been developed as independent and own software, using free software technologies. For new production, the Agency counts on a network of correspondents, spread across 7 of the 9 region's provinces, besides Madrid.

As a previous step in its establishment, a production manual was elaborated, covering style rules and the journalistic methodology and routines used. Dealing with specialized communication, it was also intended to have recommendations upon how effectively work with sources and process information, both necessary to explain, translate and rebuild scientific knowledge to a general audience. In the future, it is expected to have a set of recommendations and case studies related to the ethics of science and technology communication incorporated (Sabbatini, 2004).

3. First findings

Since the beginning of its operation in 18th December 2003, news agency DICYT has signed agreements with more than 20 regional communication media and has prepared more than 700 pieces of information, according to the following tables:

Type	Short News	News	Articles	Other	Total
Proportion	35%	50%	10%	5%	100%

Table 1 – Information pieces by genre

	Total
Ávila	40
Burgos	70
León	50
Palencia	35
Salamanca	150
Segovia	35
Soria	85
Valladolid	180
Zamora	50
Region Total	695
National and International	40
Total	735

Table 2 – Pieces of information by geographical location

Regarding the use of information supplied on behalf of its clients, DICYT is performing a follow up, with identification of news published in main newspapers. Although up to this moment there is no formal study, two main modes of news utilization have been detected. The first, concerning

breakthrough and topical subjects are used the following day after publication in the agency's Web page; in second place, permanent interest subjects, like fight against cancer, astronomical and space exploration discoveries, are retrieved from the archive several weeks after release and are used as aid in the elaboration of special articles. Regarding geographical coverage, news related with the immediate surroundings, e.g. in the local and province scopes, have a greater chance of being reused, while national and international news are less frequent to be published.

4. Conclusions

In its future development, DICYT considers the possibility of expanding its services, for example, promoting Castile and Leon's science and technology institutions, as well as companies, in Spanish and international scopes. Another line of action, already tried out, is to prepare information under requests, in an exclusive way for a specific medium, trying to convey an original and rigorous approach to a subject. This later would have a financial cost, while the daily information service is free.

In conclusion, DICYT is taking the first steps in bringing science and technology closer to the regional media in Castile and Leon. Although there are still many barriers to surpass, mainly related with a lack of value's perception of this kind information, it is the cornerstone for developing innovative strategies, in order to create favourable conditions for a scientific and technological culture across society in its whole.

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Parallel session 3: Contributions and challenges of cultural diversity in public communication of science

DIVERSITY: THE SOCIAL INCLUSION AND THE PAPER OF THE INSTITUCIONAL AND MARKETING COMMUNICATION IN THIS PROCESS.

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Cape Nature Conservation

Abstract

The work in question aims at to bring information about the program of the diversity the and the diverse forms of communication. For in such a way, some types of research had been used: bibliographical; documentary; qualitative, that interview was used the tool of collection of data; quantitative, with base in an applied mixing questionnaire in the employees of the companies; e analysis of content of the materials printed matters and in video. With these extracted information of the research, it was possible to raise and to trace the following ones given: the origin of the program of the diversity in Brazil, the minority groups that are worked by the program, as the companies understand and work the diversity and the social inclusion, the vision of the employees front the program inside of the company, the advantages and disadvantages of the program, the paper of the social movements, the laws that has helped the social inclusion inside of the companies, the difficulties that the companies are finding for working the information on the diversity in the enterprise communication channels, the aid that the media has proportionate for breaks of the paradigm of many other companies with regard to diversity and as the companies are using the propaganda for projecting its images of diverse company, who values the cultural diversity. Concluding itself that the Brazilian companies still are finding a great difficulty inside to work the social inclusion of its companies, exactly on pressure of the laws and social movements, and knowing of the chances that the inclusion will bring for them, due the lack of information on the subject, the resistance of some employees, the preconceptions unconscious and to little research in the area, as well as the inability in working with the diverse forms of communication, enterprise how much in such a way marketing.

Parallel session 3: Contributions and challenges of cultural diversity in public communication of science

WATER TECHNOLOGIES IN MEXICO: COMMUNICATION AS AN ELEMENT OF SYNCHRONICITY BETWEEN INNOVATION AND LOCAL KNOWLEDGE

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Abstract

Context: Mexico has a wide socioenvironmental diversity which is expressed in different conceptions and relationships with the environment that stem from local cultural characteristics. As a byproduct of the application of development models based on the intensive use of natural resources and a growing urbanization and industrialization, the country faces serious water-related problems that pose the need for promoting drastic changes in water resources management. Water institutions seek to decentralize decision making and promote technological changes in the way water is accessed, used, and managed at the local, regional, and national levels. The Mexican Institute of Water Technology, whose mission is to generate and transfer knowledge and technologies for the sustainable use of water resources, tries to establish a bridge between the technical side and the economical, social, and cultural aspects of water management.

Methodology

From the perspective of cultural ecology, which recognizes the multilinear evolution of social groups and the impact of national modernization policies at the local level, a methodological corpus of communication has been developed. This corpus includes several models and instruments that promote the techno-social dialogue between local and regional communities and the sources of technological innovation for the implementation of socially, economically, and environmentally viable solutions.

Results

The systematic adaptation and application of this communication model to specific water-related problems and needs has created spaces for sharing experiences, knowledge, and perceptions among local communities, water technology specialists, and government officials in specific technological innovation programs on irrigation, participative water management in watersheds, environmental education, and water culture.

Conclusions

The systematic application of communication strategies contributes to the solution of water-related problems by creating spaces for sharing knowledge and visions between social groups and technological innovators, thus creating synchronicities for encouraging the necessary transformations while respecting and recreating local cultural traditions.

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THE ROLE OF COMMUNICATION MECHANISMS IN THE ADOPTION OF SCIENTIFIC KNOWLEDGE BY TRADITIONAL SOCIETIES

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Abstract

Scientific knowledge seems to be the drive behind industrialization and sophistication of modern society. Continued improvement of information and communication technology (ICT) which span over space and time, ensure that people in modern society have fast access to a vast store of knowledge wherever it may be. Appropriate control mechanisms and search tools help to control information overload so that end users obtain only the required information needed for a specific purpose. Although communication mechanisms of modern society are supposed to ensure equal access, problems arise when science is communicated to traditional societies with the intention to let people from diverse cultures benefit from scientific knowledge. In traditional societies the impact of the oral culture is still very strong and users are heavily dependent on the communication mechanisms of indigenous knowledge systems (IKS). These mechanisms served traditional people perfectly well over many generations. Unfortunately they are not compatible with those of modern information systems. To complicate matters it seems that development agencies, which are instrumental in the communication of scientific knowledge to traditional communities, are unaware of the impact of communication mechanisms and use mechanisms unfamiliar to traditional people. A recent investigation of a case study, where maize was successfully grown due to effective communication of scientific knowledge, proved that the peoples' livelihoods improved considerably when appropriate communication mechanisms of IKS were applied to share scientific knowledge. Practical examples are used to show how different types of traditional communication mechanisms can be applied to make concepts and/or technology understandable and more acceptable. It is argued that development workers, operating at the grassroots interface, will need to understand and know how to apply communication mechanisms of both IKS and modern systems in order to successfully address cultural diversity and the use of scientific knowledge.

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TRANSLATING SCIENCE FOR THE ILLITERATE: JOURNALISTIC EFFORTS TO PROVIDE HEALTH MESSAGES IN ERITREAN LANGUAGES

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Abstract

Eritrea is a Horn of Africa country that faces many challenges in its nation-building efforts. Around 80 percent of its 3.5 million population is believed to be illiterate. The government owned media have a self-acknowledged goal of disseminating development messages, including health and environmental messages, to the Eritrean public. Messages on primary health care, environment, agriculture and other issues are placed in the media daily. Sometimes, experts at the Ministry of Health and Ministry of Agriculture prepare these messages. On many occasions, journalists are expected to produce their own messages for regularly appearing programs on the radio. The journalists have to struggle to translate scientific knowledge usually available in English into one of the least standardized local languages, Tigringa. Tigringa is the most widely used Eritrean language that has its own script.

This research will look into the problems of incompetent translation of the original scientific knowledge into Eritrean languages. Basically, the methodology will be a simple comparison of the English and Tigringa versions of the same body of scientific knowledge. A sample of health messages in Tigringa from Eritrean media will be compared with its English counterparts along different categories that include comprehensibility, clarity, conciseness, etc.

The study hypothesizes that lack of journalistic competence in writing the health messages, weak command of English and Tigringa languages, lack of profound understanding of the local Tigringa culture, and harmful habits of direct translations of scientific words into Tigringa are affecting the public communication of health messages in Eritrean media. Production of the health messages could be greatly improved in quality through proper translation. The translation task may be made easier if journalism training in Eritrea takes into consideration results from this study.

Parallel session 3: Contributions and challenges of cultural diversity in public communication of science

THE PUBLIC COMMUNICATION OF SCIENCE AND THE ROLE OF TRANSLATION IN THE REPRODUCTION OF THE SOCIAL SIGNIFICANCE OF GENDER

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Abstract

"Translation understood as a social action is a place where specific social and cultural meanings are interpreted and reconstructed. For this reason it can also be understood as a strategic place for the reproduction, resistance and/or rupture of dominant or hegemonic representations. Studies which analyse the construction of gender through translation tend to focus on literary discourse production. However, we think that the study of translation in other types of discourse can shed light on how, in this world of globalisation, some very generalised and pervasive gender representations circulate and are reproduced, thereby contributing to the omnipresent consolidation of socially-constructed categories as natural categories of world perception. In this sense, scientific discourse occupies a special, strategic position, given the epistemological characteristics which make it a discourse of truth and a discourse which serves as reference for other social discourses.

We will analyse the role of the public communication of science in the intercultural construction of gender, drawing from the study of a bilingual discursive corpus. The corpus used consists of articles on sexual differences published in the French science magazine *La recherche* and of the translations of said articles for publication in Spanish in the magazine *Mundo científico*. Our analysis will use a methodological framework of critical analysis to reveal the principle social meanings involving gender which are transported from one language and culture to another, and also the social significance of such meanings.