

Scientific Dissemination as Journalistic Activity

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Journalistic Enunciation. Retextualization.

Abstract— This article makes a brief analysis of the discursive resources used as scientific dissemination strategies through journalism in the institutional newsletter *Jornal do Semi-Árido*, conceived, produced and edited by EmbrapaSemiárido's press office. In addition to the newspaper, the digital information bank named Knowledge Trees is also under analysis, with data from the most diverse fruit species cultivated in the Brazilian semiarid region. As a methodology, the perspective of mapping was used from the contributions of Santos (2002) and Biembengut (2003). The discussion proposed in the course of the work is the potential that Journalism has in bringing the public closer to such technical and specific terms used in the scientific environment. Therefore, the dialogue of authors such as Bakhtin (1992; 1997), Vizeu (2004; 2007), Zamboni (2001),

I. INTRODUCTION

Current studies on science communication refer to various types of approach, from public perception of science, scientific literacy or analysis of scientific discourse. In general, these studies deal with the importance of scientific dissemination in order to make public knowledge restricted to a group of people, generally specialized in certain areas (biological, agrarian, robotics, among others). On the other hand, such approaches also refer to scientific journalism as one of the tools of this type of dissemination.

In order to reflect on scientific journalism as an important tool for the dissemination of science, this article presents a brief analysis of two journalistic productions prepared by the Brazilian Agricultural Research Corporation - Semi-Arid, a public institution focused on scientific production in the Brazilian semi-arid region. Therefore, the institutional newsletter, *Jornal do Semi-Árido* and the digital content Knowledge Trees are under analysis here.

The relevance of the work was to realize how journalism, especially Multimedia Journalism, focused on activities of the various possible media for communication, including print, electronic media, hypertext, among others,

is a tool for disseminating knowledge that they can do. part of people's daily lives. Thus, it was possible to demystify the idea of science as a distant field from everyday life. Another aspect was to show the contribution of the Theory of Enunciation, created by the philosopher of language Mikhail Bakhtin, to the studies on journalism in a more directed way to the enunciation that occurs in the spheres of journalistic communication, for example, the journalistic enunciation as suggested by Vizeu (2007). And, inserted in the context of journalistic enunciation, as the processes of retextualization is also a mechanism to create statements in order to direct them to the public. The enunciation, among other aspects, accounts for a speaker in constant dialogue with his interlocutor and the repertoire of the latter is also formed by such interaction, (BAKHTIN, apud VIZEU, 2007, p.2). Retextualization as suggested by Marcuschi (2001) is a constant linguistic procedure for people. In view of this, the work pointed out how this process of retextualizing is part of the journalistic enunciation. Retextualization as suggested by Marcuschi (2001) is a constant linguistic procedure for people. In view of this, the work pointed out how this process of retextualizing is part of the journalistic enunciation. Retextualization as suggested by Marcuschi (2001) is a

constant linguistic procedure for people. In view of this, the work pointed out how this process of retextualizing is part of the journalistic enunciation.

To account for the search and analysis of data in the construction of the work, the methodology applied was Mapping from the perspective of Santos (2002) and Biembengut (2003) where the authors speak of maps as a way of representing reality. Santos, (2002) when dealing with the theme makes a sociological approach to cartography inserted in his studies on Cartography of Law, discussing the usefulness of maps and drawing an analogy with Law, in which he places that both occupy in society, a place of representation. Biembengut, on the other hand, uses the same perspective as Santos, however, considering the context of educational research.

The author puts the role that research has in meeting social demands, and how it can be an instrument in search of answers to the demands of the educational context. The mapping for it serves as a way to search for information that can enable the construction of the answers that Education needs. In the case of this work, the mapping served as a way to search for information as close as possible to the context where it occurs, in addition to analyzing the data without forgetting to send it back to its origin, not even the route to reach it.

Therefore, this article is organized in two parts, first the methodological path and an exposition of the analyzes of the *Jornal do SemiÁrido*, informative by EMBRAPA Semi-Árido, and the institution's website, together with the dialogue of some authors used in the research, will be discussed. Subsequently considerations of the work.

II. MAPPING AS A METHODOLOGICAL ROUTE

To search for information about the processes of construction of journalistic statements in the context of a press office focused on the dissemination of scientific knowledge, it was necessary to search for elements that would answer the guiding question of the monograph. Therefore, the route traced to the construction of the work was to collect evidence of the procedures of the press officer in preparing the texts published in the various enunciative supports that EMBRAPA Semiárido has. For this, a methodology applied in both research in the social sciences and in the human sciences, mapping, was used.

The use of this procedure is based on the proposal of Boaventura Sousa Santos, in which the author in his work on Cartography of Law deals with maps as forms of representation of reality. The author discusses the usefulness of maps as instruments that serve to imagine and represent space making an analogy with the Law. For him, it is possible to work with mapping in a sociological

perspective as a reference for the construction and representation of space. The understanding of such a perspective is precisely to collect information in the place where they present themselves with the objective of gathering them to get to know them.

In an educational approach using the same methodology, Biembengut (2003) suggests a tool that is capable of breaking the barrier between discourse and action. The author works from an applied research perspective, also emphasizing that, as an obligation, educational research should serve society in order to respond to the various problems that arise in this context. The author also points out that mapping cannot be understood only as an accumulation of information, nor as graphics, but as knowledge closer to a reality through significant and relevant details (BIEMBENGUT, 2003, p. 297). Therefore, this methodology was fundamental for the maturation of the research path, seeking to analyze the data without losing sight of the context in which they are inserted.

III. ANALYSIS OF THE ADVERTISING SUPPORTS

As a result of the political changes that occur throughout the historical process, there were a series of changes in social policies, including the approval of the 1988 Federal Constitution, called the Citizen Constitution, which provided basic rights to the population, such as education, health, work, social security and other rights, which symbolized a political-social achievement for society, according to article 6 of the Federal Constitution.

Here to reflect on the practices of scientific journalism, the analysis material is the *Jornal do Semi-Árido*, a newsletter from the Brazilian Agricultural Research Corporation - EMBRAPA, installed in Petrolina and focused on research in this region of the Brazilian semiárid. The newspaper, of an institutional nature, began to be published in the 1980s, currently it is published quarterly, with a circulation of one thousand copies. The content is mainly aimed at the internal public of the company and the institution's partners in order to keep them updated on progress and results of research carried out at the institution.

In general, in the data collected it was evident that the company's newspaper presents a remarkable procedure in the construction of the publication's statements, the retextualization. This is the process by which the statement suffers when taking on another language format (MARCUSCHI, 2001). The author shows that these are routinely procedures, exemplifying that the alleged quotes *ipsis verbis*, is a form of transformation, reformulation, recreation, modification of someone's speech. He states

that retextualization happens in a very diverse way in societies and their linguistic games:

In reality, our daily linguistic production, if carefully analyzed, can be seen as a chain of reformulations, such as the overlapping of linguistic games practiced in this interdiscursivity and intertextuality. (MARCUSCHI, 2001, p.48).

In the case of the construction of the statements of the information in question, it should be considered that the source used by the journalist are research results, and in the case of the company in question, research aimed at the agricultural sector. One of the examples of retextualization can be pointed out in the research comparing the language used by a researcher and a news item published in the newsletter dealing with her research.

Below is an original excerpt from the researcher:

The present study was developed during the years 2005/2006, in a commercial mango plantation, of the Tommy Atkins variety, at Fazenda Frutex, in Petrolina-PE, aiming to verify the floral biology, as well as the comparative study on behavior, frequency and the seasonality of floral visitors in organic and conventional cultivation. The inflorescences of the mango tree have male and hermaphroditic flowers, in the proportion of 2: 1, with predominance of the former at the base of the panicle. The anthesis is diurnal, asynchronous, with the release of a strong sweet odor. The flowers present dicogamy, characterized by anthesis dehiscence 24h. after anthesis. The production of nectar is continuous and in small quantities, on average 0.045 μL / flower. As for floral visitors, 21 species were registered, belonging to the orders; Diptera, Hymenoptera, Lepidoptera and Odonata. *Apis mellifera* was the most frequent species in both types of cultivation. Among the dipterans, *Belvosia bicincta* (17.7%) and *Musca domestica* (10.2%) stood out as the most frequent in conventional and organic cultivation, respectively. The diversity and the number of visits were greater in organic cultivation. The use of pesticides during flowering reduced the frequency of visits by bees by 50% and by diptera by 20%. Due to its behavior, frequency and active displacement in the inflorescences, *A. mellifera* was considered as the most efficient pollinator of the culture for the region of Vale do Submédio São Francisco. (SIQUEIRA, 2007) 2%) as the most frequent in

conventional and organic cultivation, respectively. The diversity and the number of visits were greater in organic cultivation. The use of pesticides during flowering reduced the frequency of visits by bees by 50% and by diptera by 20%. Due to its behavior, frequency and active displacement in the inflorescences, *A. mellifera* was considered as the most efficient pollinator of the culture for the region of Vale do Submédio São Francisco. (SIQUEIRA, 2007) 2%) as the most frequent in conventional and organic cultivation, respectively. The diversity and the number of visits were greater in organic cultivation. The use of pesticides during flowering reduced the frequency of visits by bees by 50% and by diptera by 20%. Due to its behavior, frequency and active displacement in the inflorescences, *A. mellifera* was considered as the most efficient pollinator of the culture for the region of Vale do Submédio São Francisco. (SIQUEIRA, 2007) *mellifera* was considered the most efficient pollinator of the crop for the region of the Vale do Submédio São Francisco. (SIQUEIRA, 2007) *mellifera* was considered the most efficient pollinator of the crop for the region of the Vale do Submédio São Francisco. (SIQUEIRA, 2007).

The above text is the summary of one of the thesis chapters: Comparative study of the pollination of *Mangifera Indica* (ANACARDIACEAE) in conventional and organic cultivation in the region of the São Francisco sub-medium valley, authored by researcher Kátia Maria Medeiros de Siqueira, in 2007. From the process of retextualization and adaptation to the journalistic language, the restricted content of this scientific text presented above, has the following statement:

Ecology of mango pollination in the São Francisco Valley

Investments in research, in the installation of modern packaging structures and post-harvest storage of fruits, in road, air and sea transport logistics, and in specialized labor, along the mango production chain, do not dispense with the providential activity of bees, flies and wasps to obtain high productivity in the orchards of the crop. Flying from plant to plant for most of the day, these insects provide a unique and essential service: the pollination of flowers, the first stage for their transformation into fruit. (RIBEIRO, 2007).

The characteristic procedures of journalistic language, such as the use of graphics, photographs, the lead itself favor the understanding of the lay public with technical language used by scientists. On these issues Zamboni (2001) was an essential theoretical support to elucidate such points and in the analysis of the newspaper some of the paths pointed out by the author were evident. The author calls this mechanism one of the “attractiveness resources”, a “global strategy to make the material more attractive for reading” (Zamboni, 2001 - p. 106). Some examples that can be shown are:

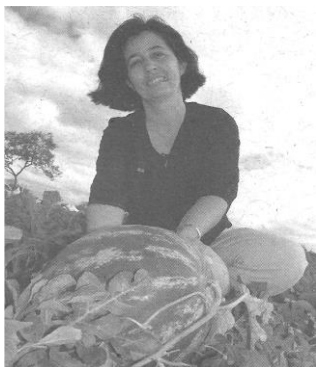


Image 1 (Ribeiro, 2007)

Researcher showing new variety of watermelon.
Feature: First powdery mildew resistant watermelon.

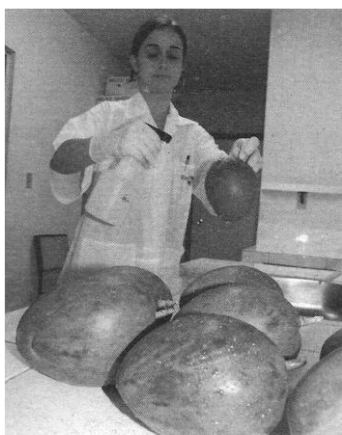


Image 2 (Ribeiro, 2007)

Laboratory researcher shows natural extract, mango preservative. Feature: Natural product preserves natural quality of mango, October 2007.

The two researchers act as representations of the activities they perform, in addition to representing the institution itself. In image 1, the researcher is the portrait of the conception of a new variety of fruit, while in image 2 the researcher, in her workplace shifts the reader's view from action to the act of peculiar experimentation of

science. In addition to Zamboni's (2003) look at these techniques used in journalistic work, it was also possible to consider journalistic enunciation. Vizeu (2007) puts how the audience is present in this context.

It is in the enunciation work that journalists produce discourse. And it is within the discursive process itself, through multiple operations articulated by language processes, that the audience is constituted in advance”. (VIZEU, 2007, p. 2).

Therefore, as an enunciative support, it is possible to attribute to Jornal do Semi-Árido an element of scientific culture, as Vogt points out. The author emphasizes that science serves beyond everything, as a form of social intervention, emphasizing that scientific development is a cultural process, with a social dynamic in it, from the production of scientific knowledge to its dissemination, and it is in this process that finds the power of social intervention that science has (VOGT, 2003).

As far as the institution's website is concerned, in addition to the points highlighted in the printed newsletter, it also goes through other journalistic procedures related to language. It is necessary to consider that because it is an electronic vehicle, it requires another approach and has a different type of target audience. The website is the channel that the company has with the public connected to the internet, it has been on the air for about 10 years. A particularity of the information published on the institution's website is the texts on the news board. The materials published on the website are the same as those sent to the information vehicles in the form of a release. The news board is, therefore, a series of suggestions for guidelines on the research and actions of the institution.

The Knowledge Trees, as they are called, are statements developed by the institution to facilitate public access to these research results. Through a semiotic analysis of the figure, the tool has an iconic meaning, as it suggests in the figure a representation of a real tree, in which its fruits are different, that is, the knowledge, the information generated by the company, therefore its structure is an attempt to have uniformity with the parts of a tree (roosters, canopy, among others). As it is a mechanism that gathers summary information of each step of the fruit production, from preparation to commercialization, an interesting factor of the tree as a tool for scientific dissemination is that the company makes a general overview of such information and disseminates it in an accessible way to the public.

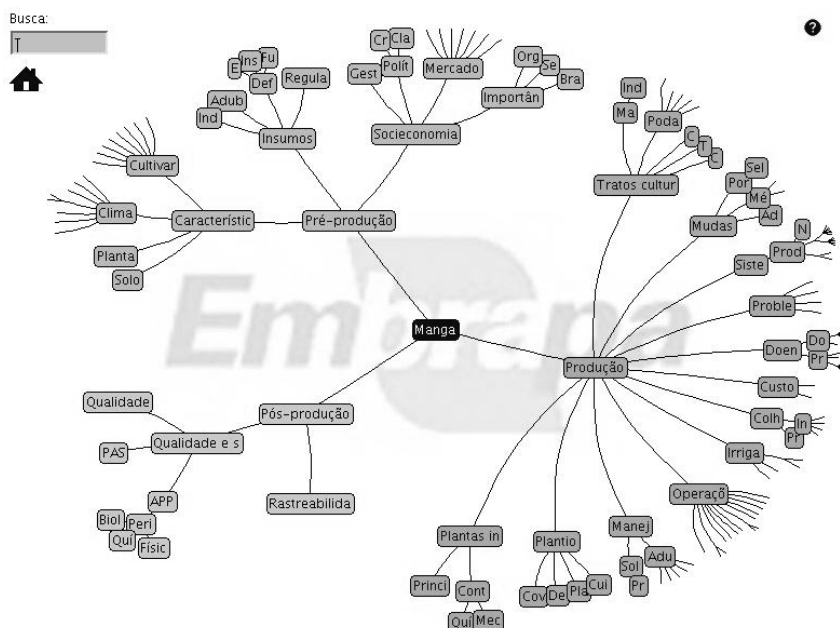


Image 3 Embrapa Semiárido website

The construction of the trees was an initiative of the institution to enable yet another mechanism for the dissemination of the knowledge generated by the company. As was put in the analysis of the newspaper, the content of the tree also undergoes a process of retextualization, but with a different direction, for an audience interested in this subject, but who can also be a diverse audience, since such statements contained in the tree, in a way general can be accessed by most people. Jargon, graphics, scientific nomenclature are not present in this content, so this statement creates another enunciative scenario based mainly on the public's attractiveness for the form, colors and dispositions of the information.

IV. CONCLUSIONS

In the context of the data collected, it was possible to see how journalism is an important tool for the dissemination of scientific knowledge, favoring the appropriation of such knowledge by the non-specialized public. It is possible to make such a consideration because the analyzes show how these statements produced by a journalist are also marked by the voice of the audience for which they are intended. Because, to deal with concepts, which are mostly restricted to a limited group of people, it is necessary to use mechanisms of approximation with the diverse public. Among the mechanisms pointed out is the retextualization: when preparing a news article about a certain topic in this universe, the journalist needs to approach these concepts using a simplified language.

On the other hand, the work also showed that the analyzed supports are part of Scientific Culture, as highlighted by Vogt (2003), because as tools for the

dissemination of science, through these supports the idea of science being a field distant from the daily life of people. The comprehension of topics debated and analyzed scientifically serves as support for the production of culture, creation, evaluation and improvement of public policies.

With regard to the dissemination tools that the institution has, the trees of knowledge are utterances proper to scientific discourse, as they are produced entirely by researchers, according to the logic of their activities. However, they also show themselves as improved statements for dissemination, since the statements that scientists have, in most cases, do not reach much of the public, and, as pointed out in the work, trees are the most accessed pages in the EMBRAPA website. In this case, it is also possible to consider that journalism, especially multimedia journalism, which assumes the task of using the various possible means to 'speak' to the public, should appropriate these principles.

The question that arises in this current research context is the fact that journalism appropriates such tools and mechanisms that allow the possibility of thinking about work practice, emphasizing its complexity. And, as far as scientific dissemination is concerned, journalism creates a bridge between this knowledge and the public, not only in the sense of mediating this information, but mainly because it allows access to concepts that are of interest to society, because from them other issues are created, undone and redone.

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