Scientific Popularization in Brazil and in Russia: An Essay to a Comparative Analysis of Discourses / *A divulgação científica no Brasil e na Rússia: um ensaio de análise comparativa de discursos*

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ABSTRACT
The objective of this article is to conduct a comparative analysis of scientific popularization in Brazil and in Russia. The theoretical and methodological basis of this comparison was provided by combining Bakhtin's theory and comparative discourse analysis, present in the works of the Cediscor researchers. Based on it, we constructed a *corpus* of utterances of the Brazilian and Russian editions of the *Scientific American* magazine. As a result, we were able to observe, on the one hand, significant similarities in the genres "article" and "report of scientific popularization" in both ethno-linguistic communities, and, on the other hand, differences regarding their relation with reported speech and the use of verbal tenses and moods.
KEYWORDS: Scientific Popularization; Comparative Discourse Analysis; Brazilian Studies; Russian Studies

RESUMO
O objetivo do artigo é realizar uma análise comparativa da divulgação científica no Brasil e na Rússia. Os fundamentos teórico-metodológicos dessa comparação foram construídos na confluência entre a teoria bakhtiniana e a análise comparativa de discursos, esta presente nos trabalhos dos pesquisadores do Cediscor. A partir desses fundamentos, construímos um corpus *de enunciados das edições brasileira e russa da revista* Scientific American *e pudemos observar, por um lado, grandes semelhanças nos gêneros artigo e reportagem de divulgação científica nas duas comunidades etno-linguísticas, e, por outro, diferenças no que concerne à relação com o discurso alheio e o uso de tempos e modos verbais.*
PALAVRAS-CHAVE: Divulgação científica; Análise comparativa de discursos; Estudos brasileiros; Estudos russos

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The main purpose of this article is to build the foundations of a theoretical and methodological approach for comparing discourses in different languages and cultures inspired in Bakhtin's works. This task is faced by two researchers, one Brazilian and one Russian, who have in common, beyond the education in linguistics, the fact that they conducted research on science communication or popularization of science. From this research trajectory, we intend to undertake a comparative analysis of scientific popularization in two different ethno-linguistic communities, Brazilian and Russian, using utterances from the *Scientific American* magazine as our object of analysis.

The project has been organized in the following way: we start with the explanation of the relevance of Bakhtin's theory for comparative discourse analysis; then we expose the principles of "comparative discourse analysis" made by researchers from Cediscor ("Centre de recherche sur les discours ordinaires et spécialisés" – Sorbonne Nouvelle) in order to articulate their principles with the foundations of Bakhtin's theory; and finally we carry out a comparative analysis of scientific popularization set out in Portuguese and Russian in order to show the validity and productivity of the proposed theoretical framework.

1 Foundations of a Comparative Discourse Analysis: Bakhtin's Theory

Since the comparison of scientific popularization in Brazil and Russia focus on units of speech communication, (i.e., utterances), we first define the theoretical foundations of our proposed analysis and, secondly, prove that it contains relevant elements for a comparative discourse analysis. Our research is based on Bakhtin's metalinguistics that focuses its study on the dialogical relations within and between utterances, and these units of speech communication are composed of linguistic and extralinguistic elements. In the set of texts encompassing this theory of language, we find repeatedly the comparison of phenomena in different cultures and languages, aspects which we will highlight succinctly.

In order to theorize the formation of character and its relationship with the author in the philosophical writings of the 1920s such as Author and Hero in Aesthetic Activity,

Bakhtin[1] makes use of works and authors from diverse cultures such as Italian, French and Russian. We observe that Bakhtin's way of thinking comes from the comparative analysis of cultures (French, Italian, German, Russian, etc.) and spheres within the same culture (music, dance, literature, religion, etc.).

Similarly, Bakhtin is based on a comprehensive analysis of the novel genre in different European languages and cultures when developing, in the 1930s, a sociological stylistics to build a theory of the novel. This is because, in Bakhtin's sense, the origin and development of novelistic prose (in the Hellenistic period, in imperial Rome and at the end of the Middle Ages) are closely linked to "social heteroglossia of national languages that are actually spoken" (1981, p.370),[2] i.e., the awareness of the ideological and discoursive relativity and of the human character, as opposed to mythological, of a national language, occurs in its encounter with other cultures and languages, which is the condition necessary for the existence of the novel genre:

> The resistance of a unitary, canonic language, of a national myth bolstered by a yet-unshaken unity, is still too strong for heteroglossia to relativize and decenter literary and language consciousness. This verbal-ideological decentering will occur only when a national culture loses its sealed-off and self-sufficient character, when it becomes conscious of itself as only one among *other* cultures and languages (1981, p.370; emphasis in original).[3]

Based on two common elements for comparison – the novel genre and its languages stylisation – Bakhtin analyzes Dicken's, Sterne's, Rabelais's, Cervantes's and Turguênev's novels to show the parodic stylization of different social languages: legal, scientific, everyday, etc. The depth and breadth of Bakhtin's concept of the novel stem from the comparative analysis of this literary genre in several European languages and cultures. Similarly, in his thesis on the work of François Rabelais, Bakhtin analyzes the presence of grotesque realism in the English language, in the works of Sterne,

[1] BAKHTIN, M. M. Author and Hero in Aesthetic Activity. In: _____. *Art and Answerability:* Early Philosophical Essays. Edited by M. Holquist and V. Liapunov and translated by V. Liapunov. Austin: University of Texas Press, 1990, pp.4-256.
[2] BAKHTIN, M. Discourse in the Novel. In: _____. *The Dialogic Imagination*: Four Essays by M.M. Bakhtin. Edited by M. Holquist and translated by C. Emerson & M. Holquist. Austin: University of Texas Press, 1981, pp.259-422.
[3] For reference, see footnote 2.

Shakespeare, the German Romantics (Lenz, Klinger, Tieck, Hoffman), Voltaire and Diderot, etc.

In his later work, we find a reaffirmation of the methodology used to compare cultures. When asked about the situation of literary studies in the Soviet Union in the early 1970s by the magazine *Novi Mir* [*New World*],[4] Bakhtin proposes two tasks to literary studies: first, to understand Literature always in relation with contemporary culture of which it is a part; in other words, to study the literary sphere in relation to other cultural spheres (religion, moral, science, journalism, everyday ideology, etc.), and, secondly, to study the literary work in the "great time," seeking its ties to works of the recent and distant past in order to identify visions and the assimilation of aspects of the world - traditional and innovative - shown in a privileged way in genres.

With regard to the research of literary works done by Bakhtin, the relationship with the "great time" allows the approach of authors from different countries. For example, the influence of the classic times and the medieval popular culture through carnival worldview was first observed in the work of the French writer François Rabelais; however, it also inspired the analysis and understanding of the works of Russian writers such as Nikolai Gogol - "Underlying *Dead Souls* a close analysis would discover the forms of a merry, or carnivalesque, journey through the underworld, through the kingdom of death. *Dead Souls* is a fascinating parallel to Rabelais' fourth book, the *Journeys of Pantagruel*" (BAKHTIN, 1985, p.31); [5] and Fyodor Dostoyevsky, whose carnival worldview descended, more immediately, from European Renaissance writers: "The main sources of carnivalesque in the literature of XVII, XVIII and XIX centuries were the writers of Renaissance period: Boccaccio, Rabelais, Shakespeare, Cervantes and Grimmelshausen" (BAKHTIN, 1984, p.157).[6] Particularly in the case of Dostoevsky, it is through the establishment of the "polyphonic novel" genre that Bakhtin identifies the development of European literary prose. Therefore, the cluster of seminal worldviews in

[4] BAKHTIN, M. M. Response to a Question from the *Novy Mir* Editorial Staff. In: _____. *Speech Genres & Other Last Essays.* Translated by V. W. McGee. 6th. ed. Austin: University of Texas Press, 1996, pp.1-9.
[5] BAKHTIN, M. *Rabelais and Gogol*: Verbal Art and Popular Humor. Translated by M. O'Toole. Austin: *J. Cultural Studies*, vol. 3, n.1, 1985.
[6] BAKHTIN, M. *Problems of Dostoevsky's Poetics*. Edited and Translated by C. Emerson. Minneapolis, London: University of Minnesota Press, 1984[1963].

great temporality allows the approach of literatures of different countries and cultures, such as the Spanish, the English, the French, the Italian, and the Russian.

Resuming Bakhtin's article in the magazine *Novi Mir*, we found that the task of proposing to study the literature in "great time" comes with the following assumptions about the importance of temporal, spatial and cultural distance of an individual understanding from for the object of study:

> In the realm of culture, outsideness is a most powerful factor in understanding. It is only in the eyes of *another* culture that foreign culture reveals itself fully and profoundly (but not maximally fully, because there will be cultures that see and understand even more). A meaning only reveals its depths once it has encountered and come into contact with another, foreign meaning: they engage in a kind of dialogue, wich surmounts the closedness ando one-sidedness of these particular meanings, these cultures. [...] Such a dialogic encounter of two cultures does not result in merging or mixing. Each retains its own and *open* totality, but they are mutually enriched (1996, p.7; emphasis in original).[7]

We see here, in a text of the final phase of Bakhtin's production, the realization of the importance of comparing cultures, of dialogical understanding, the constitution of meaning, that is, the encounter with another allows a better understanding of oneself. These principles are reaffirmed in the text Notes Made in 1970-71,[8] in which the need for contact between oneself and the other is the basis of the existence of the sense:

> There can be no "contextual meaning in and of itself" – it exists only for another contextual meaning, that is, it exists only in conjunction with it. There cannot be a unified (single) contextual meaning. Therefore, there can be neither a first nor a last meaning; it always exists among other meanings (BAKHTIN, 1996. p.146).[9]

Finally, another type of comparison that runs through Bakhtin's work is the contrast between various spheres of human activity or cultures. In particular in the text The Problem of Content, Material, and Form in Verbal Art,[10] Bakhtin states that each

[7] For reference, see footnote 4.
[8] BAKHTIN, M. M. From Notes Made in 1970-71. In: _____. *Speech Genres & Other Last Essays.* Translated by V. W. McGee. 6th. ed. Austin: University of Texas Press, 1996 [1970], pp.132-158.
[9] For reference, see footnote 8.
[10] BAKHTIN, M. M. The Problem of Content, Material, and Form in Verbal Act. In: _____. *Art and Answerability:* Early Philosophical Essays. Edited by M. Holquist and V. Liapunov and translated by V. Liapunov. Austin: University of Texas Press, 1990, pp.257-325.

field or sphere[11] only finds its justification and its foundation on the borders with other fields, and goes on to approach, among others, the different relationships that the artistic and scientific spheres establish with the pre-existing reality. The artistic sphere welcomes the evaluation contained in the pre-existing reality. It is one of its essential building blocks, but then it individualizes, implements and isolates this reality by means of the creative act. In addition, the author-creator is a constitutive aspect of the art form. In contrast, the scientific or knowledge sphere does not accept pre-existing assessments, siding, as a result, with a reality devoid of values (good, holy, useful, etc.), unfinished and always open. Another aspect is that the cognitive act or isolated scientific knowledge is not significant and the counterpoint between various views on the same object is indispensable for the construction of a scientific work. Finally, the author-creator, while active, does not appear, and the cognitive form is found in the object itself, i.e., the author fades in favor of the unity of the object.

From all these considerations, we conclude, first, that one of the foundations of the Bakhtinian dialogic relations between utterances, works and discourses is precisely the encounter between two or more cultures – this aspect is considered in our analysis of scientific popularization in Russia and Brazil and, secondly, that genre is a prime candidate to be the *tertium comparationis*, for, in the same way as it occurs in the literary sphere, we believe that the fundamental worldviews in diachrony and synchrony materialize in discoursive genres. In the case of scientific popularization, the subject of this article, Bakhtin again illuminates its specificity: "The journalist is above all a contemporary. He is obliged to be one. He lives in the sphere of questions that can be resolved in present days (or in any case in the near future) (1996, p.152)."[12] Taking into account that the journalistic sphere is actively involved in scientific popularization, it is in the present day and not in the past tradition (such as in literature) that we find important aspects of its worldview. Finally, Bakhtin claims that the scientific sphere, necessarily involved in scientific popularization, tends to erase the author-creator in favor of the unity of the object and not to isolate the scientific work from other views on the same object.

[11] The Brazilian translation refered to the Russian term "óblasti" as "domain," but it is the same word used in Speech Genres to refer to "areas of human activity." In this text, the word "óblasti" ("field") is used together with the term "sfiéra" ("sphere"); based on that, we will use the terms "field" and "sphere" to refer to the areas of The Problem of Content, Material, and Form in Verbal Creative Art.
[12] For reference, see footnote 8.

2 Foundations of a Comparative Discourse Analysis: The Works of Cediscor

Since the early 2000s, a group of researchers has assembled around the same object, culture. Interested in investigating the "cultural dimensions in the production of discourse through contrastive approaches" (CLAUDEL et al, 2013, p.9),[13] the group was formed in the "Research Center of everyday and specialized discourses" (*Cediscor*), constituting a new axis of research: "Comparison, language and culture in discoursive perspectives." What are the theoretical and methodological constants of research conducted on this axis?

First, the group shares the principles of Discourse Analysis. The researchers study the workings of language, articulating the conditions of production and circulation of the *corpora* being analyzed, which carry the "establishment of relations between linguistic expressions and extralinguistic phenomena (social representations, culture, ideology, etc.)" (CLAUDEL et al, 2013, p.16).[14] Upon this theoretical foundation, further explanation is given about the object of "contrastive discourse analysis," understood as "discoursive manifestations of social representations circulating in a given community about objects in the broad sense on the one hand, and about discourses regarding these objects on the other" (CLAUDEL et al, 2013, p.17).[15] The discoursive representation plays an important role in these analyses, being understood as the reconstruction of mental representations of the author through linguistic marks. Since these representations are usually linked to institutional, historical, material among other formns of causalities, the analysis takes an interdisciplinary perspective, since the interpretation uses external subjects to the sciences of language.

Genre is a key operational concept in the constitution of methodology and interpretation of *corpora*, because it is the starting invariant that provides both the similar element necessary to compare cultures and the "level of representation" or limit of description and interpretation. In addition to the methodological aspect, the conception

[13] In the original text: "dimensions culturelles dans la production du discours en mettant en oeuvre des approches contrastives."
[14] In the original text: "la mise en lien des manifestations linguistiques à des phénomènes extra-linguistiques (représentations sociales, culture, idéologie, etc.)."
[15] In the original text: "manifestations discursives des représentations sociales circulant dans une communauté donnée sur les objets au sens large, d'une part, et sur les discours à tenir sur ces objets, d'autre part."

of language as a "set of communication practices in a given society" (BEACCO, 2013, p.166)[16] leads to the assumption, from the linguistic anthropology, that the language practices are cultural and that the discoursive genres are the most immediate places of articulation of language with culture and the workings of society. It is in the genres that discoursive culture exists, and it is by means of the interpretative articulation of the characteristics of diferent discoursive genres that discoursive culture is formed.

The concept of culture and the relationship between language, speech and culture are central to the contrastive analysis, revealing, at the same time, the differences between researchers of Cediscor. Among the different meanings, P. von Münchow (2013) prefers the term "discoursive culture," taken as the discursive manifestations of social representations circulating in a given community about the objects in a broad sense and on discourses about these objects. According to the author's research results, the concept of "discoursive culture" has the advantage of allowing the description of common cultural traits that go beyond one ethno-linguistic community.

In all works carried out by Cediscor, culture is "a permanent construction that can only be observed indirectly, on individual behavior and on which multiple internal and external influences are exerted" (VON MUNCHOW, 2013, p.196).[17] In order to overcome the major challenge of articulating the individual with the collective by thinking the discourse in culture and culture in discourse, von Münchow proposes Van Dijk's concept of "mental models,"[18] comprising the subjective representation of contexts by interactants. These representations evolve over time and are culturally variable. This way of articulating the individual and the collective provides an alternative route to escape from both determinism and essentialism. We find ways to overcome this dichotomy in the dialectical synthesis operated by Voloshinov,[19] who, when discussing the relationship between ideology (public domain) and psychology (individual domain), proposes that the external ideological sign, on the one hand, is only to be absorbed and

[16] In the original text: "un ensemble de pratiques de communication dans une société donnée."
[17] In the original text: "une construction permanente qui ne peut être observée, de façon indirecte, que dans des comportements individuels et sur laquelle s'exercent de multiples influences intérieures et extérieures."
[18] VAN DIJK, T. A. *Discourse and Context: A Sociocognitive Approach.* Cambridge: Cambridge University Press, 2008.
[19] VOLOŠINOV, V. N. *Marxism and the Philosophy of Language.* Translated by L. Matejka and I.R. Titunik. Cambridge/London: Harvard University Press, 1986.

transformed inside individual psyche, and, on the other, the psyche is formed through external and collective ideological signs.

Each researcher from the Cediscor also defines the relationships between language, culture, and discourse. Among the existing understandings, we tend to follow the definition by G. Tréguer-Felten (2013), for whom there are close links between language and discourse – being culture a deep, slowly evolving substrate, which leaves, through discourse, its mark on language. Despite their differences, the researchers of Cediscor advocate more consensual positions on the lack of clear boundaries between language and discourse. However, C. Claudel and G. Tréguer-Felten – comparing distant languages (French / Japanese, French / Russian etc.) – tend to see language as a more decisive factor in cultural differences, whereas P. von Munchow, working with closer languages (French / German), and Philippe d'Iribane emphasize the relationship between discourse and culture.

Regarding the Cediscor research founding methodology, we would note three important guidelines: the joint description / interpretation, the level of analysis and the *tertium comparationis*. First, the relationship between the description of linguistic marks and the interpretation of social places as well as the involved cultures raises, on the one hand, the issue of establishing "trustworthy interpretive categories that allow to link the results of the description to the indexed cultural values" (VON MUNCHOW; RAKOTONOELINA, 2006, p.16)[20] and, on the other, the problem of the elements that are not directly observable on texts and interactions, which imply a one-way and back movement between description and interpretation involving an interdisciplinary perspective. Secondly, the description is to be performed in terms of genres, and the comprehension of the discoursive culture is to be done through the interpretative articulation of the characteristics of different discoursive genres. Finally, the constitution of the comparative research *corpus* is based on *tertium comparationis* or element of comparison. The discoursive genre stands as the main element of comparison in the Cediscor research for its ability to show the difference not through that which is similar, but that which is near, comparable.

[20] In the original text: "catégories interprétatives fiables, permettant de relier les résultats de la description à des valeurs culturelles répertoriées."

Another important methodological issue is the place of the researcher in comparative analyses. In this regard, Traverso (2006) draws attention to an important issue: the "foreign" character of the researcher. In the analysis of oral interactions in different cultures, the researcher is faced with unexpected events that call into question his expectations and knowledge, which proves his place as an interpreter and enhances his ability to challenge evidences.

3 Scientific Popularization in Brazil and in Russia

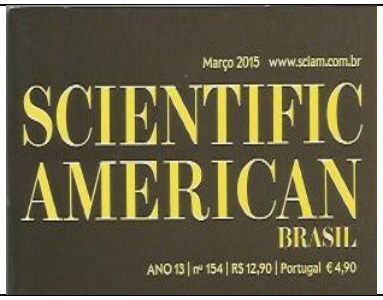
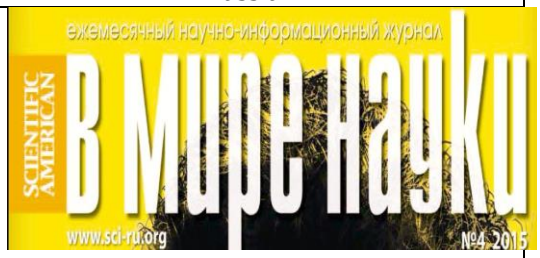
The *tertium comparationis* base of our research is the concept of scientific popularization, taken, in a Bakhtinian sense, as a particular type of dialogical relationship between the scientific sphere and other spheres of culture in order to broaden the state of knowledge of the addressees. On the one hand, it gives them values, knowledge, own worldviews of the scientific universe, and, on the other, it is under the influence of the upper strata of the everyday ideology (VOLOŠINOV, 1986).[21] The threshold nature of scientific popularization utterances (between the scientific and journalistic, between scientific and educational, between scientific and cultural, etc.) is the cause, in our view, of the different names that this phenomenon is given in both languages: in Portuguese, we find "divulgação científica" [scientific divulgation], "popularização da ciência" [the popularization of science], "vulgarização científica" [the vulgarization of science], "comunicação científica" [scientific communication]; in Russian - "publicidade científica" [scientific publicity] ("naútchnaia publitsístika"), "literatura de popularização científica" [literature of scientific popularization] ("naútchnaia populiárnaia literatura") and even "revista de informação científica" [magazine of scientific information] ("naútchno-informatsiónyi jurnál").

This element of comparison guided the choice of *Scientific American Brasil* and *V Míre Naúki* [*In the World of Science*], which correspond to the Brazilian and Russian editions of the publication *Scientific American.*[22] The information represented on the

[21] For reference, see footnote 20.

[22] The *Scientific American* magazine was initiated in 1845 by the American inventor Rufus Porter, and it is the oldest non-stop publication in the US. In 1986, Verlagsgruppe Georg Von Holtzbrinck, a German publishing group, bought *Scientific American*. According to the editorial information of the first Brazilian edition (jun. 2002), the magazine is available in 20 countries and in 16 languages. On its website, the editors state that the objective is the popularization of achievments in science and technology.

cover and on the websites of these two editions allows us to describe and interpret important elements of their spheres of production and circulation, as well as the ideological horizon:

	Brazilian	Russian[23]
Name		
Publishing houses	Duetto editorial	State University of Moscow Ímeni M.V. Lomonóssova
Information about the topic of magazine	"Brazilian edition of the most traditional world magazine of popular science" – present only in the years 2002 and 2003.[24]	"Monthly magazine of scientific information"[25]
Founded in	2002	1983
Circulation	approx. 33.000	12.500
Target audience:	It is not stated in the magazine's website.	Site Info: "Our publication is addressed to both the scientific and technical intelligentsia, and a wide range of educated readers, who want to keep abreast of the latest achievements in the world of social and scientific thought."[26]

From these elements, we can point out important differences between the two magazines: the Brazilian edition adopted the title of the American "parent" only with the addition of "Brazil" in much smaller letters of the same color, whilst the Russian edition adopted a Russian name and added the American edition of *Scientific American* in much smaller letters framed in another shade of yellow; the Brazilian edition is funded by the commercial publisher Duetto, while the Russian one is published by Moscow State University; the thematic area of focus is explicit only in the first two years of the Brazilian

[23] Website address: http://www.sciam.ru/. Accessed on May 28, 2015.
[24] "Edição brasileira da mais tradicional revista mundial de divulgação científica" – presente apenas nos anos de 2002 e 2003
[25] In the original text: "Iejemiéssiatchnyi naútcho-informatsiónnyi jurnál"
[26] In the original text: "Nache izdánie adressóvano kak naútchnoi i tekhnítcheskoi intelliguéntsii, tak i chirókomu krúgu obrazóvannykh tchitátelei, stremiáschikhsia byt v kúrce posliédnykh dostijénii mirovói obschéstvennoi i naútchnoi mysli."

publication, but it is present from the beginning in the Russian version; the Russian edition is much older than the Brazilian, for it started its publication in the 1980s, at the time of the Soviet Union; the number of copies of the Russian edition is less than half of the Brazilian; the target audience definition is explicit in the Russian magazine, including first the scientific community and then the educated readers.

This information indicates the creation of distinct identities by means of a greater or lesser proximity with the American magazine. The adoption of the title of the parent magazine accompanied by the country ("Brazil" in smaller letters of the same color as the main title - *Scientific American*) and the appreciation of the fact that the Brazilian edition is linked to the "most traditional global magazine of scientific communication" materialize verbally and visually the close relationship between the American parent and the Brazilian subsidiary. The Russian edition, on the other hand, marks its national identity through the very title (*V míre naúki* / "In the World of Science") and typographic features (size and color), putting in the background, unvalued, its affiliation to the long tradition of the American parent. We consulted the other branches and we noted that international issues of *Scientific American* oscillate between adopting the name of the parent magazine (*Scientific American* - Netherlands, Belgium, Czech Republic, Israel, Taiwan) and creating a proper name (*Investigación y Ciencia* - Spain, *Le Scienze* - Italy, *Pour la Science* - France, *Spektrum der Wissenschaft* - Germany, *Swiat Nauki* - Poland), reinforcing our interpretation. It is essential to mention that the Russian version of the journal covers the territory not only of the Russian Federation (with all the cultural and linguistic variety) but also the former Soviet Union. According to the information from the site,[27] one of the partners of the edition is the Executive Committee of the Commonwealth of Independent States (http://www.cis.minsk.by), which includes the Republics of Azerbaijan, Armenia, Belarus, Kazakhstan, Kirgiztan, Moldova, Tadjikistan and Uzbekistan, as well as Turkmenistan and Ukraine. This reinforces the idea that the Russian language is an instrument of communication in the multi-cultural and multi-ethnical society. The comparative analysis of magazines belonging to two different ethno-linguistic communities as well as the consultation of other editions allow us to highlight the titles as ideological signs (VOLOŠINOV, 1986),[28] of verbal and typographical nature:

[27] See footnote 24.
[28] For reference, see footnote 20.

the Brazilian edition creates a dependent identity and benefits from its relationship with the American parent, while the Russian edition seeks its autonomy and national identity, revealing traits, in our view, of two different discoursive cultures (MUNCHOW, 2013).

Another relevant aspect is the fact that, despite the fact that the Russian version is much older, its circulation is much smaller than that of the Brazilian one. The lower popularity of the Russian magazine might be explained by the fact that 1983 was still a period of polarization between the United States and the former Soviet Union, which could reflect the contemporary ideological horizon. This fact may be related to the search for an own identity, in the adoption of the title, in order to avoid rejection by Russian readers. In other words, the smaller Russian magazine circulation may be explained by some kind of competition between the two countries, which the adoption of a proper title was intended to minimize.

Once we have outlined the main features of the ideological sphere and horizon of both magazines, we will define and justify the rest of the selection criteria of the utterances of the *corpus* selection criteria. In order not to restrict the results of the analyses to one single area of knowledge and for us to be able to identify relative stability, the choice was based on the following principles: three utterances on three distinct areas of knowledge (human evolution, cosmology and neuroscience); the time interval between 2011 and 2014; and the utterances shown on the covers, as they occupy a prominent place in publications. Based on these criteria, we arrive at the following *corpus* of this research:

Brazilian edition	Russian edition
"How sleep configures memory,"[29] *Scientific American Brasil*, n. 136, cover and pp.28-33, Sept. 2013.	"How sleep builds memory,"[30] *V míre naúki* ("In the world of science"), *n. 4*, cover and pp.42-49, 2015.
"A scar of the Big Bang," [31] *Scientific American Brasil*, n. 150, cover and pp.46-55, nov. 2014.	"Distant echoes of the Big Bang,"[32] *V míre naúki* ("In the world of science"), n. 12, cover and pp.22-32, 2014.
"The intriguing minds of our Neanderthal cousin,"[33] *Scientific American Brasil*, n. 154, cover and pp.26-33, mar. 2015.	"Our brothers by intellect,"[34] *V míre naúki* ("In the world of science"), *n. 4*, cover and pp.4-14, 2015.

[29] In the original text: "Como o sono configura a memória"
[30] In the original text: "Kak son vaiáet náchu pámiat"
[31] In the original text: "A cicatriz do Big Bang"
[32] In the original text: "Daliókii ótzvuki bolchógo vzryva"
[33] In the original text: "A mente intrigante de nosso primo neandertal"
[34] In the original text: "Náchi brátia po rázumu"

The next step is reading the material of 6 covers, 3 from the Brazilian edition and 3 from the Russian one in order to detect similarities and differences. This first reading is guided by the information on and interpretations of the sphere of circulation and the ideological horizon of the two ethno-linguistic communities. Thus, it was based on the adopted titles, year of foundation, circulation, magazine segment and target audience, described above.

Observing that the cover materials are translations of a text of the American "parent," we come to the conclusion that both discoursive cultures are indicated by the choice of the translation.

There is an important difference between the utterances of the *corpus*: in 4 of them (2 in Russian and 2 in Portuguese) the authors are scientists, while two of them (one in Russian and one in Portuguese) are authored by a professional journalist with specialization in scientific popularization in the fields of paleonthology, archeology, and life sciences. The authorship of the selected utterances has important effects on the science popularization genre adopted because, as Grillo (2013, p.190) observed: "The best criterion to differentiate the genres of reportage and science popularization article is authorship: journalists write reports from an external point of view of the reported scientific facts; scientists write articles from an internal point of view."[35] This finding is confirmed in the utterances of our *corpus*: signed by the American Kate Wong, senior editor of *Scientific American*, "Neanderthal Minds" (*Scientific American Brasil*, n. 154, mar. 2015) and "Rázum Neandertáltsa" ("Intellect of a Neanderthal," *V míre naúki*, n. 4, april. 2015) are written in third person, with the exception of the titles and some passages, in which the first person plural inclusive (I + you, readers) appears.[36] However, in the utterances signed by scientists, besides the inclusive way, we can find the first person

[35] In the original text: "O melhor critério para diferenciar os gêneros reportagem e artigo de divulgação científica é a autoria: jornalistas escrevem reportagens de um ponto de vista externo aos fatos científicos relatados, cientistas escrevem artigos de um ponto de vista interno."

[36] In two famous articles, Benveniste 1991 [1956] proposes to divide the pronouns in two classes - the third person belonging to the syntax of the language and the first and second person to instances of speech -, and to distinguish the "we" in an inclusive way, "I + you," from an exclusive way "I + them." The Benveniste approach is already present in the Brazilian Portuguese grammar (BECHARA, 2003, p.164), one of the instruments used for the description and stabilization of language. Although Benveniste is considered to be the forerunner in addressing pronouns as a special class of words, placing man in language, the German linguist Wilhelm Humboldt (1767-1835) had already dealt with the subject in a work published posthumously in 1836.

plural exclusive. They are related to the two authors of the text (it is therefore a doubling of me, i.e., I + I) or to other scientists researching the same subject (I + I + them):

Scientific American Brasil, n. 154, mar. 2015, emphasis added	*V míre naúki*, n. 4, april. 2015, p.4, emphasis added
Author journalist (Kate Wong, senior editor of Scientific American)	
Human evolution[37] Neanderthal Minds[38] Anatomy analyses, DNA and cultural legacies produce fascinating information about the inner life of *our mysterious extinct cousins* [...] (emphasis added)[39] *Some experts suggest* that interbreeding between the lower Neanderthal population and the more numerous modern one perhaps has taken the Neanderthals to extinction by "flooding" or mastering their gene pool. (emphasis added)[40]	Evolution of a man[41] Intellect of a Neanderthal[42] Studying the anatomy and DNA traces of Neanderthal culture, we can penetrate into the mysterious inner world of *our extinct relatives* [...] (emphasis added) [43] *Some experts even believe* that, perhaps, mixing a large population of Homo sapiens and a smaller Neanderthals population has led to a decline in the past by dissolving their genes in the general mass. (emphasis added)[44]
Authors scientists (G. Tononi and Chiara Cirelli, a psychiatry research professors)	
Scientific American Brasil, n. 136, sept. 2013	*V míre naúki*, n. 10, oct. 2013
Why do we sleep[45] When *we are awake*, memories are formed as neurons that are activated jointly strengthen their links. (emphasis added)[46] In contrast, the synaptic decay during sleep *would restore* brain circuits to a baseline	*Why do we sleep*[49] When *we are awake*, remembering is due to the fact that neurons are activated at the same time links are strengthened. (emphasis added)[50] Conversely, during sleep synaptic transmission attenuation *restores* its original

[37] In the original text: Evolução humana
[38] In the original text: Mentes neandertais
[39] In the original text: Análises de anatomia, DNA e legados culturais produziram informações fascinantes sobre a vida interior de *nossos misteriosos primos extintos* (...) (emphasis added)
[40] In the original text: *"Alguns especialistas sugerem* que a miscigenação entre a população neandertal menor e os modernos mais numerosos talvez tenha acabado por levar os neandertais à extinção ao "inundar", ou dominar seu *pool* genético" (p.33; emphasis added).
[41] In the original text: Evoliútsiia tcheloviéka
[42] In the original text: Rázum neandertáltsa
[43] In the original text: "Izytcháia anatómiiu, DNK i sliedy' kultúry neandertáltsiev, my mójem proníknut v zagádotchnyi vnútrennii mir *náchikh vy'merchikh ródstvennikov* (...)" (emphasis added)
[44] In the original text: "*Niékotorye ekspiérty daje polagáiut*, chto, vozmójno, smechénie bolchói populiátsii tcheloviéka razúmnogo i menchei populiátsii neandertáltsiev priveló k upádku posliédnikh pútiem rastvoriéniiia ikh guénov v óbschei másse (p.13; emphasis added)."
[45] In the original text: "*Por que dormimos"*
[46] In the original text: "Quando *despertos*, as memórias se formam conforme neurônios que são ativados conjuntamente fortalecem suas ligações" (p.30).
[49] In the original text: "*Por que nós dormimos"*
[50] In the original text: "Kogdá *my bódrstvuem*, zapominánie proiskhódit za schiot togo, chto miéjdu odnovriémenno aktivíruiuschimisia neurónami ucílivaiutsia sviázi" (p.44).

level of power and efficiency, avoiding the consumption of excessive energy and cellular stress. *We designate this restorative function of sleep baseline* as the preservation of synaptic homeostasis and *name our general hypothesis* about the role of sleep the synaptic homeostasis hypothesis, or SNY, its acronym in English. (emphasis added)[47]	level in nerve circuits that avoid excessive power consumption and reduce the load on individual neurons. *We believe that the restoration of the initial level when sleeping* is needed to save the synaptic homeostasis, and *named our hypothesis* about the role of sleep the hypothesis of synaptic homeostasis. (emphasis added)[51]
We look forward to testing predictions of SNY and exploring its further implications. *We hope to find out* if sleep deprivation during neural development leads to changes in the organization of brain circuits, for example. (emphasis added)[48]	*We plan* to check the predictions obtained by the synaptic homeostasis hypothesis and continue to explore the possibilities of its application. For example, *we hope to find out* whether sleep deprivation during development of the nervous system leads to changes in the organization of neural circuits. (emphasis added)[52]

We note that the use of the first person plural in the statement signed by the journalist publisher creates an identification between the author and the reader, for the purpose of the topic is perceived as close and therefore interesting for the reader. This identifying feature is enhanced by utterances that refer to a universe of knowledge and socially shared values:

> These were Neanderthals, our stocky cousins of heavy foreheads, who lived in Eurasia between 350,000 and 39,000 years - the same Neanderthals whose name became *synonymous to stupidity and rudeness in popular culture*. (emphasis added).[53]

[47] In the original text: "Em contraste, o enfraquecimento sináptico durante o sono *restauraria* circuitos cerebrais a um nível basal de força e eficácia, evitando assim o consumo de energia excessivo e o estresse celular. *Designamos essa função restauradora da linha de base do sono* como de preservação da homeostase sináptica e *denominamos a nossa hipótese geral* sobre o papel do sono, hipótese da homeostase sináptica, ou SNY, na sigla em inglês" (p.31; emphasis added).

[48] In the original text: "*Estamos ansiosos* para testar previsões da SNY e explorar suas implicações ainda mais. *Esperamos descobrir* se a privação de sono durante o desenvolvimento neural leva a mudanças na organização dos circuitos cerebrais, por exemplo" (p.33; emphasis added).

[51] In the original text: "Naoborót, vo vrémia sna oslabliénie sinaptítcheskoi peredátchi *vosstanávlivaet* ieió iskhódnyi úroven v niérvnykh tsépiakh, chto pozvoliáet izbeját tchrezmiérnogo potrebliéniia enérgii i snízit nagrúzku na otdélnye neiróny. *My stchitáem, chto vosstanovlénie iskhódnogo úrovnia vo snié* núino dlia sokhranénia sinaptítcheskogo gomeostáza, i *nazváli náchu guipótezu* o róli sna guipótezoi sinaptítcheskogo gomeostáza" (p.45; emphasis added).

[52] In the original text: "*My planíruem* proviérit predskazániia, polútchennye s pómoschiu guipótezy sinaptítcheskogo gomeostáza, i prodóljit izutchénie vozmójnostei ieió primeniéniaia. Naprimiér, *my nadiéemsia vyiasnit*, deistvítelno li lichénie sna vo vriémia razvítiia niérvnoi sistemy privódit k izmenéniiam v organizátsii neirónnykh tsépei" (p.48; emphasis added).

[53] In the original text: Eram neandertais, nossos primos atarracados, de frontes pesadas, que viveram na Eurásia há entre 350 mil e 39 mil anos – os mesmos neandertais cujo nome se tornou *sinônimo de idiotice e rudeza na cultura popular* (*Scientific American Brasil*, mar. 2015, p.28; emphasis added).

> These were the Neanderthals, our stocky relatives with overhanging bushy eyebrows, who lived in Eurasia during the period between 350,000 and 39,000 years ago, - are the same Neanderthals, *who in modern popular culture became the embodiment of stupidity and foolishness.* (emphasis added).[54]

In both editions, reference is made, with slight nuances, to the same contents valued by potential readers, that is, the everyday ideology (VOLOŠINOV, 1986)[55] that consists mainly of the acquired scientific knowledge, particularly in school processes and scientific popularization texts.

In the utterances signed by scientists, we find, in addition to inclusive forms, verbs in the first person plural exclusive ("estamos ansiosos" [we look forward], "esperamos descobrir" [we hope to find out], "nós planejamos" [we plan], "denominamos" [we name]) in which scientists are the subject agents of the projects or related research. The activism of the subject-author in scientific popularization done in *Scientific American* and in *V míre naúki* is very close to their place in the scientific sphere, for, as proposed by Bakhtin (1990, p.277; emphasis in original),[56] the reality of knowledge in science "is not consummated and [is] always open [...] *in the world of cognition, there are in principle no separate acts and no separate works*. Rather, it is indispensable to bring in other points of view." This can be seen in two ways: first, scientists assume the authorship of their research in relation to other researchers in the same sphere of research and, secondly, the articles end with the presentation of the next steps of scientific research, reaffirming the provisional and open nature of scientific knowledge, as we noted in the last fragment of the table above, which is an excerpt of the last paragraph of the articles from the Brazilian and Russian editions.

In those situations, the utterance signed by the journalist uses the third person ("alguns especialistas sugerem" [some experts suggest], "Alguns experts até supõem" [Some experts even believe]), marking its position outside the scientific community.

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[54] In the original text: Eto byli neandertáltsy, nachi korenástye ródstvenniki c navísschimi gusty'mi broviámi, jívchie na territórii Evrázii v período 350-39 tys. liét tomú nazád, - te sámye neandertáltsy, *kotórye v sovremiénnoi pop-kultúre stáli olitsevoréniem túposti e glúposti* (*V mípe haúki*, n. 4, abr. 2015, p.6; emphasis added). //

[55] For reference, see footnote 20.

[56] BAKHTIN, M. M. The Problem of Content, Material, and Form in Verbal Act. In: _____. *Art and Answerability:* Early philosophical essays by M. M. Bakhtin. Edited by M. Holquist and V. Liapunov and translated by V. Liapunov. Austin: University of Texas Press, 1990 [1924].

Also, while the two articles by scientists end with the assumption of aspects still unclear at present and with future research propositions, the story of the journalist completes the direct speech of the scientists, who reinforce the general thesis of the text.

Other enunciative aspects are quite distinct in signed utterances by journalists and scientists. Among them we highlight the relationship with third-party speech or the presence of reported speech. Differently from the use of the first person plural, whose similar use serves, despite the fact that the editors of the magazines refer to both texts as "articles," to differentiate a popular science report from a popular science article, the relationship with the word of others helps not only to differentiate genres, but also to observe differences between Brazilian and Russian ethno-linguistic communities, as we show in the following fragments:

Scientific American Brasil, n. 154, march 2015.	*V míre naúki*, n. 4, april 2015.
Reported speech	
Neanderthals' brains were a little flatter than ours, but equally bulky; in fact, in many cases they were larger, paleoneurolog Ralph Holloway of Columbia University explains.[57]	Paleonthologist Ralph Holloway of Columbia University writes that the Neanderthal brain is flatter than ours, but of the same, and often larger size.[60]
Hawks highlights that a major problem in trying to figure out how Neanderthal brains functioned from their genes is that, generally speaking, researchers do not know how genes affect thoughts in our own species. "We know next to nothing about Neanderthal cognition from genetics, because we know next to nothing about (modern) human cognition from genetics," he summarizes.[58]	Hawks says that the influence of genes on the features of the ancient people's brains is still a big problem, because researchers do not know much about the influence of genes even on the thinking of modern man.[61]

[57] In the original text: "Cérebros de neandertais eram um pouco mais achatados que os nossos, mas igualmente volumosos; de fato, em muitos casos eles eram maiores, explica o paleoneurologista Ralph Holloway, da Colúmbia University" (p.28).
[58] In the original text: "Hawks salienta que um problema maior na tentativa de descobrir como cérebros neandertais funcionavam a partir de seus genes é que, de modo geral, pesquisadores não sabem como genes afetam pensamentos em nossa própria espécie. 'Não sabemos praticamente nada sobre cognição neandertal a partir da genética, porque não sabemos quase nada sobre cognição humana [moderna] a partir da genética', resume ele" (p.31)
[60] In the original text: "Paleonievrólog Ralph Holloway iz Kolumbíiskogo universitiéta píchet, chto mozg neandertáltsa bolee plóskii, tchem nach, no takógo je, a zatchastúiu i bólchego razmiéra" (p.7).
[61] In the original text: "Hawks govorít, chto vliiánie guiénov driévnikh liudéi na ossóbennosti ikh mózga predstavliáet sobói ieschió bólchuiu probliému, poskólku issliédovateli mnógogo ne znáiut o vliiánii guiénov na mychlénie dáje u sovremiénnogo tcheloviéka" (p.10).

The similarities within findings at sites of early modern human beings were remarkable. "Regardless of how we classify the data, there were no significant differences between the groups," says Henry. "The evidence we now have does not suggest that the earliest modern human beings in Eurasia had more efficient access to foods of plant origin."[59]	The similarity within the findings at sites of Homo sapiens was simply astounding. According to Henry, "Attitudes have changed: no significant difference between these groups exists now." She notes that, according to their data, the anatomically modern humans did not have an advantageous access to the benefits of plant foods.[62]

The reported speech follows slightly different trends in both editions: in places where the Brazilian edition is using direct speech, the Russian edition uses the analytic-objectual modification. In direct speech, according to Vološinov (1986),[63] the discursive subjectivity becomes clearer and occurs in the direction in which the author needs. As evidenced by research by Grillo (2004), the direct speech is very common in the Brazilian journalistic sphere, where there is an interpretive appropriation of work of sources and its literal display, producing a loyalty effect, legitimizing a statement whose authorship is external to the scientific community. The analitical-objective modification predominates, also according to Vološinov (1986),[64] in cognitive and rhetorical contexts (in scientific, philosophical, political, etc.), in which it is necessary to expose other people's opinions on the subject, comparing them and disagreeing with them. Our hypothesis is that while the journalistic style has influenced the Brazilian edition – published by a commercial publisher and hired professional translators – the scientific style would influence the Russian edition, a point reinforced by the fact that it is edited by a scientific institution, the State University of Moscow, and the translators of the articles are scientists and professors of the same institution, as we could testify both in the editions and through e-mails exchanged with the translator.

[59] In the original text: As similaridades com achados de sítios de humanos modernos primitivos eram notáveis. "Independentemente de como classificamos os dados, não houve diferenças significativas entre os grupos", relata Henry. "As evidências que temos agora não sugerem que os humanos modernos mais primitivos na Eurásia fossem mais eficientes no acesso a alimentos de origem vegetal" (p.33).

[62] In the original text: Skhódstvo s nakhódkami na stoiánkakh tcheloviéka razúmnogo bylo prosto porazítelnym. Po slovám Khenri, "vzgliády izmenílis: znatchítelimykh razlítchii miéjdu étimi grupami tepiér niet". Ona otmetcháet, chto, po ikh dánnym, u anatomístcheski sovremiénnogo tcheloviéka ne bylo preimúschestva v dóstupe k rastítelnoi pische (p.13). //

[63] For reference, see footnote 20.

[64] For reference, see footnote 20.

Finally, a second aspect differentiating the Brazilian and Russian ethno-linguistic communities are the verbal tenses, as we can see in the fragments below, taken from two articles by scientists:

Scientific American Brasil, n. 136, sept. 2013, emphasis added	*V míre naúki*, n. 10, oct. 2013, emphasis added
Sleep, in this narrative, *would preserve* the ability of the brain circuit to continuously form new memories over the life of a person without saturation or obstruction of older memories.[65]	Thus, sleep *allows* the brain throughout life to continuously *retain* the ability to form new memories, avoiding over-saturation or destruction of old memories.[66]
Scientific American Brasil, n. 150, cover and pp.46-55, nov. 2014.	*V míre naúki* ("Mundo da ciência"), n. 12, cover and pp.22-32, 2014.
In 1980, Alan Guth, a young physicist-with a PhD, thought about these paradoxes when he found the solution: the Universe imagined by him, based on particle physics, *could have inflated* quickly long after the Big Bang.[67]	In 1980, a young physicist Alan Guth pondered over these two paradoxes, and found a solution: our Universe *could* quickly *swell* immediately after the Big Bang.[70]
As in the case of the Higgs field, the symmetry breaking field *would produce* massive and exotic particles, but the masses involved in the process were much larger than the mass of the Higgs particle. In fact, it *would be necessary* to build an accelerator 10 trillion [68] times more powerful than the LHC to directly explore the theories that support this phenomenon.[69]	As in the case of the Higgs field, the hypothetical field that breaks the symmetry should *produce* exotic and very massive particles. In practice this means that for the direct search of relevant experimental evidence *it is necessary* to create an accelerator 10 billion times more powerful than the LHC.[71]

[65] In the original text: O sono, nessa narrativa, *preservaria* a capacidade de os circuitos do cérebro formarem continuamente novas memórias ao longo da vida de uma pessoa, sem saturação ou obstrução de memórias mais antigas (p.30).

[66] In the original text: Takím óbrazom, son *pozvoliáet* mózgu v tetchénii jízni neprery'vno *sokhraniát* sposóbnosti formirovát nóvye vospominániia, izbegáia perenasyschéniia ili unitchtojéniia stáryh vospominánii (pp.42-43).

[67] In the original text: Em 1980, Alan Guth, um jovem físico-doutorado, refletia sobre esses paradoxos quando encontrou a solução: o Universo imaginado por ele, baseado na física de partículas, *poderia ter* se inflado rapidamente longo após o Big Bang (p.49)

[68] While in the Brazilian version it is 10 trillion times, in the Russian version it is 10 billion times. There seems to have been a translation mistake of the original.

[69] In the original text: Como no caso do campo de Higgs, o campo de quebra de simetria *produziria* partículas massivas e exóticas, mas as massas envolvidas no processo eram muitos maiores que a massa da partícula de Higgs. Na verdade, *seria* necessário construir um acelerador 10 trilhões de vezes mais poderoso que o LHC para explorar diretamente as teorias que respaldam esse fenômeno (p.52).

[70] In the original text: V 1980 godú molodói fízik Alan Gut razmychliál nad étimi dvumiá paradóksami i nachiól rechéniie: nácha Vselénnaia *moglá* stremítelno *razdútsia* srázu je pósle Bolchógo vzry'va (p.25).

[71] In the original text: Tak je kak v slútchaie pólia Higgsa, narucháiuscheie simmétriiu guipotetítcheskoie póle *doljnó porojdát* ekzotítcheskiie i ótchen massívnyie tchastítsy, no vovletchénnyie v étot protsés mássy doljny' byt gorázdo bólche, tchem mássa rígsovskoi tchastítsy. Faktítcheski eto oznatcháiet, chto dliá priamógo póiska sootvétstvuiuschikh eksperimentálnykh podtverjdénii *neobkhodímo* sozdát uskorítel v 10 milliárdov raz moschnéie, tchem BAK (p.28).

From the perspective of the time, mode and verbal aspects, in the passages in which the Brazilian translator used the future tense, which, in Portuguese, expresses a "reserved opinion" (CASTILHO, 2010, p.434) [72] or "facts dependent on certain conditions" (BECHARA, 2003, p.222),[73] the Russian translator opted for three verb forms: first, the verbal periphrasis with its core (pozvoliáet) in the present tense, which in Russian means that the "action actually exists (existed or will exist)" (ROZENTAL, 1991, p.294),[74]and the imperfect aspect, which in Russian "is the action in development, in process" (ROZENTAL, 1991, p.286);[75] secondly, the imperfect indicative tense (*moglá*), which indicates action that actually existed and action in process; and finally, verbal circumlocutions with an auxiliary modal verb (should generate / doljnó porojdát) or of a modal nature (preserves / pozvoliáet sokhraniát), which in Russian indicates "desire, opportunity, intent, ability to take action" (ROZENTAL, 1991, p.283).[76]

The Brazilian edition, by using the future tense, emphasizes the reservations about the factuality of what is being narrated and seeks to preserve the most hypothetical, probable aspect of the scientific facts. In the Russian translation, although the modal verbs mitigate the assertive character of the indicative mode, verbal forms of the present and past tense of the indicative in the imperfect aspect ensure certainty in the face of the facts and hypotheses that are being presented. It seems again that these choices are motivated by the influence of the scientific style in the Russian articles, whose translator is a scientist and professor at Moscow State University. According to Kotiurova, scientific discourse in Russian has the following characteristics:

> The categorical nature is typical of scientific discourse for several reasons. The relativity of the authenticity of scientific knowledge, the change of its importance to the scientific society is revealed only in the process of its development, i.e., "strategically." At the very moment of the formulation of knowledge, the search for arguments in favor of a given case, the author is convinced of its authenticity and guides the reader or listener communicatively in order to persuade him/her of the

[72] In the original: "opinião de modo reservado."
[73] In the original: "fatos dependentes de certa condição."
[74] In the original: "déistvie, kotóroe reálno suchestvúet (suchestvovála ili búdet suchestvovát)"
[75] In the original: "ono predstavliéno v razvítii, protsiésse."
[76] In the original: "vozmójnoct, veroiátnost soobcháemogo, predpolojiénie, somniénie"

> naturalness and the logic of the process of his thought (KOTIÚROVA, 2011, p.243).[77]

Our hypothesis is that the greater assertiveness of the statements of science popularization in Russian is due to the more categorical nature of the Russian scientific discourse, as stated in the fragment above, which exerts a greater influence on the scientific publication of the Russian edition due to the extralinguistic elements indicated above.

Final Remarks

The main purpose of this article was to build a theoretical and methodological approach to comparing the statements of two distinct ethno-linguistic communities. In order to do that, we first realized that Bakhtin's approach to dialogical relations, the utterance, the heterodiscourse, contains principles and concepts (authorship, speech genres, ideological sphere, ideological sign, reported speech, ideological horizon, presumed recipient, everyday ideology) that are extremely productive to compare utterances from different languages and cultures as they allow us to describe the linguistic materiality as well as to offer interpretations about the specificities of the discoursive cultures involved.

Cediscor research, in turn, presented the possibilities of comparative analysis for non-literary utterances, little present in the Bakhtinian work. Moreover, the assumption of discoursive genre as *tertium comparationis* relevant for the comparison of similar issues and for configuring the speech community found Bakhtin's work on sppech genres, allowing an enriching articulation of both theories. The *corpus* approach methodology is another meeting point between the two theories, in the sense that the place of the researcher is theorized as a subject who, influenced by his theoretical and cultural framework, goes to the *corpus* of utterances not with ready categories, but with flexible

[77] In the original text: "Kategorítchnost svóistvenna naútchnoi rietch po riádu pritchín. Otnocítelnost dostoviérnosti naútchnogo znániia, izmeniénie ego znatchímosti dlia naútchnogo sotsiéma vlyiavliáiutsa lich v protsiésse ego razvítiia, to est "strateguítcheski". V momiént je polutchiéniia znániia, poiska argumentov v polzy vydvinytoi guipotezy avtor ubejdién v eio dostoviérnosti i dommunikativno orientiróvan na to, chtóby ubedit tchitátelia ili sluchátelia v estiéstvennosti e zakonomiérnosti khoda svoéi mysli."

concepts that allow the discovery of the unexpected, and returns to the theory, in a constant back-and-forth movement.

This theoretical and methodological approach guided the formation of the *corpus* of research and also provided a comparison between Brazilian and Russian discoursive cultures. From the point of view of the similarities, we found that the genres "article" and "popular science reporting" have very similar features in the two cultures and the difference between them can be explained by authorship. From the point of view of the differences, the Russian edition was under a greater influence of the scientific style – explainable by the scientific nature of the publisher and by the scientific background of the translator – materialized in a more assertive style and in the use of analytical-objectual modification of reported speech. On the other hand, the Brazilian edition came under the influence of the journalistic style – explainable by the commercial nature of the publisher and the non-scientific background of the translator –materialized in the use of prepared direct speech and verb forms that indicate the most provisional and hypothetical nature of scientific knowledge.

Finally, this exploratory study identified important issues to be solved in future research, such as a better understanding of the complex relationships between language, speech and culture; a more consequential exploration of the concept of culture; the role of stylistics in verbal choices of the two ethno-linguistic communities; a development of methodological procedures to compare speeches from two different languages and cultures, and the inclusion of the visual dimension, since the utterances of popular science magazines have a verbal-visual constitution.

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