

Looking and Reading: Verbal-Visuality from a Dialogical Perspective / *Olhar e ler: verbo-visualidade em perspectiva dialógica*

Beth Brait*

ABSTRACT

This article contributes to the ongoing research on Bakhtin and the Circle's possible contribution to the reading, the analysis and the interpretation of different modes of meaning production and meaning effect from texts whose main mark is the constitutive verbal-visual relation, that is, the articulation between the linguistic dimension – whether oral or written – and the image. If separate studies on the verbal dimension or the visual dimension have a long and respectful tradition in several knowledge areas, currently presenting expressive and rigorous studies, the verbal-visual language condition also stands in a place of privilege today as a recurrent social, cultural and discursive production and, thus, as a study object per se. Therefore, this article aims to focus on some texts from different genres, stemming from different spheres, in which the verbal-visual articulation, woven in the instance of production, deliberately works as a project of meaning production and meaning effect, be it logical, ideological, emotional or otherwise, interwoven by a face-to-face dialogue in which confronted otherness summons for subject and object memories, promoting new identities.

KEYWORDS: Verbal-Visuality; Dialogical Analysis; Identities; Otherness

RESUMO

Este artigo dá continuidade a pesquisas a respeito da contribuição possível de Bakhtin e do Círculo para a leitura, análise e interpretação das formas de produção de sentido e efeitos de sentido de textos cuja marca principal é a constitutiva relação verbo-visual, ou seja, a articulação entre a dimensão linguística – oral ou escrita – e a imagem. Se estudos do verbal e do visual, separadamente, contam com longa e respeitável tradição em várias áreas do conhecimento e com estudos bastante expressivos e rigorosos na atualidade, também a condição verbo-visual da linguagem tem hoje um lugar privilegiado, não somente enquanto produção social, cultural e discursiva recorrente, mas, por isso mesmo, como objeto de estudos. Assim sendo, o objetivo aqui é focalizar alguns textos de diferentes gêneros, advindos de diferentes esferas, nos quais a articulação verbo-visual, tecida na instância de produção, funciona, deliberadamente, como projeto de construção de sentidos, de efeitos de sentido, quer lógicos, ideológicos, emocionais, estéticos ou de outra natureza, entretecidos por um diálogo face a face em que alteridades, ao se defrontarem, convocam memórias de sujeitos e de objetos, promovendo novas identidades.

PALAVRAS-CHAVE: Verbo-visualidade; Análise dialógica; Identidades; Alteridade

*Pontifícia Universidade Católica de São Paulo - PUC/SP, São Paulo, São Paulo, Brazil; CNPq researcher; bbrait@uol.com.br

One could say that Janus looked into the past and *into* the future. The past: The man Bakhtin is dead; his work, now finalized, lives on. Yet, from another perspective, it remains unfinalizable. As each moment of the present ends, the future begins. Bakhtin's ideas are being developed, extended, applied by scholars who reaccent them, thereby changing their original meaning.

Deborah J. HAYNES

In real fact, seeing and representation merge. New means of representation force us to see new aspects of visible reality, but these new aspects cannot clarify or significantly enter our horizon if the new means necessary to consolidate them are lacking.

Mikhail Mikhailovich BAKHTIN / Pavel Nikolaevich *MEDVEDEV*

As a sign, the letter permits us to fix words; as line, it lets us give shape to things. Thus the calligram aspires playfully to efface the oldest oppositions of our alphabetical civilization: to show and to name; to shape and to say; to reproduce and to articulate; to imitate and to signify; to look and to read.

Michel FOUCAULT

1 The Visual Issue

This article aims to insist, once again, upon the specificities of what, for some years, I have named as the *verbal-visual dimension of an utterance*, of a text, that is, the dimension in which both verbal language and visual language play a constitutive role in meaning production and meaning effect. Under penalty of removing one part of the expression plane and, consequently, the understanding of the different forms of meaning production of the utterance, once it can only be seen and read simultaneously, the dimensions cannot be severed (BRAIT, 2012; 2011; 2010; 2010a; 2009; 2009a; 2009b; 2008; 2008a; 2008b; 2008c; 2008d; 2007; 2007a; 1997).

It is important to ratify that the theoretical-methodological suggestions on which this perspective is based come from the understanding that Bakhtin and the Circle's studies contribute to *a general language theory* and not exclusively to a verbal language theory, whether oral or written. In some works, this amplitude is clearly pointed out as in, just to name a few, *The problem of the text in linguistics, philology, and the human sciences: an experiment in philosophical analysis*¹, whose dialog with other essays in terms of the visual suggestion is especially (but not exclusively) found in Author and

¹ BAKHTIN, 1986, p.103.

hero in aesthetic activity², more specifically in chapter 2, entitled The spatial form of the hero, in which Bakhtin deals with, among other fundamental elements for language analysis, the *excess of seeing*, the image, the portrait, the visual and verbal self-portrait, that is, one's own representation, the moment when the author becomes the hero. Even photographs are briefly mentioned in this essay.

In fact, in every work of the Circle in which they hint at the idea of a broad language theory not exclusively linked to verbal language, it is visuality, and not verbal-visuality that is suggested as the object that can be read and interpreted. As we adopt this suggestion, we must not forget the long visual analysis tradition as well as the reflections upon the possibility to read and interpret visuality, which stem from, for instance, aesthetics, philosophy, philosophical aesthetics at times, the different semiotics (Peircean, French, Russian), the semiology of Roland Barthes in texts on photography, image rhetoric, and his works from the end of 1950s to the 1970s³.

This tradition does not stop knowledge related to visuality and its peculiarities from being produced, as one may see in very recent works, from different knowledge areas, such as, to cite one example, *O poder das imagens: cinema, e política nos governos de Adolf Hitler e de Franklin D. Roosevelt (1933-1945)* [*The Power of Images: Cinema and Politics in Adolf Hitler's and Franklin D. Roosevelt's Governments (1933-1945)* - PEREIRA, 2013].

As to the explicit use of the Bakhtinian thought concerning visuality, which includes the works of Bakhtin and the other members of what we call *the Circle* today, there are at least two works from the 1990s and one from 2013 which are taken into consideration in this study. Stemming from the totality of the Circle's works, they recognize their suggestion to visuality: *Tekstura. Russian Essays on Visual Culture*, edited by Alla Efimova and Lev Manovich, prefaced by Stephen Bann, and published in 1993; *Bakhtin and the Visual Arts* by Deborah J. Haynes, 1995, and more recently, in 2013, *Bakhtin Reframed*, by the same American author.

² BAKHTIN, 1990, p.4-256.

³ It is important to remember that one of Roland Barthes's most important work, *Mythologies*, was first published in 1957. It is composed of newspaper texts published from 1953 to 1956 (verbal texts only), but it predominantly focuses on visuality (photographs, publicity, the press, etc.). Only now, over a half century, does Jacqueline Guittard resume his work and illustrate it with the analyzed images, resulting in the edition *Mythologies illustrées* (BARTHES, 2010), offering contemporary readers the original texts along with 120 illustrations which allow them to see the images used by Barthes, who wittily and ironically demonstrated the mythological functioning of themes recurrent to the French society at that time.

The first book is a collection of texts by authors who contribute to a Russian visual culture. Thus, alongside Sergei Eisenstein, Yuri Lotman, Boris Groys, among others, Valentin N. Vološinov and Mikhail Bakhtin are included. The editors chose to open the collection with Vološinov's The study of ideologies and philosophy of language, the first chapter of the first part of *Marxism and the Philosophy of Language (MPL)*, entitled The philosophy of language and its significance for Marxism. They explain that this chapter is used as the flagship of the anthology due to the fact that it offers a fundamental investigation on the philosophy of language, placing the study of signs in the center of an ideological investigation. Although Vološinov *apparently* did not focus his studies on image, the semiotic-philosophical-ideological perspective, which is exactly on what Vološinov bases his notion of ideological sign, is used as fundamental to visual reading and visual culture.

Besides the ample perspective which defines the editor's selection of this specific work, a careful reading of the aforementioned chapter – specifically of the moment when Vološinov discusses the relation between sign and consciousness – allows the reader to pinpoint the passage in which he refers to the materiality of the sign, the sign in general, not solely the verbal sign:

The individual consciousness is nurtured on signs; it derives its growth from them; it reflects their logic and laws. The logic of consciousness is the logic of ideological communication, of the semiotic interaction of a social group. If we deprive consciousness of its semiotic, ideological content, it would have absolutely nothing left. Consciousness can harbor only in the image, the word, the meaningful gesture, and so forth. Outside such material, there remains the sheer physiological act unilluminated by consciousness, i.e., without having light shed on it, without having meaning given to it, by signs (1973 [1929], p.13).

Also in the chapter on *Verbal Interaction*, in the second part of *MPL*, Vološinov again writes about the relation between mental activity and utterance, which once again includes visuality:

When an experience reaches the stage of actualization in a full-fledge utterance, its social orientation acquires added complexity by focusing on the immediate social circumstances of discourse and, above all, upon actual addressees.

Our analysis casts a new light upon the problem of consciousness and ideology that we examined earlier.

Outside objectification, outside embodiment in some particular material (the material of gesture, inner word, outcry), *consciousness is a fiction*. [...] But consciousness as organized, material expression (in the ideological material of word, a sign, drawing, colors, musical sound, etc.) – consciousness, so conceived, is an objective fact and a tremendous social force [emphasis in original] (1973, p.90).

Based on the editor's justification and on the excerpts above, one can understand why Vološinov is cited in *Tekstura*, which aims to study visual culture, demonstrating how ample his contribution is, for it goes beyond linguistic studies, being perceived as a *general theory* and as a semiotic-ideological language perspective.

The second text chosen by the editors of *Tekstura. Russian Essays on Visual Culture* is Bakhtin's *The Spatial Form of the Hero*, a section of *Author and Hero in Aesthetic Activity*. They justify their choice by stating that the world of the fictional hero is dealt with from the visual creation of the spatial form by means of the written form. Concepts such as *excess of seeing, outward appearance, outwardness, outward boundaries of the body, outward actions, the outer body, the spatial whole of the hero and his world in verbal art: the theory of horizon and environment* were not randomly chosen, being, alongside other categories, useful to the reading and the interpretation of visuality. This is the moment when Bakhtin aesthetically and philosophically reflects upon representation, referring, thus, to self-portraits, portraits, photographs, and mentions Rembrandt, Vrubel, Leonardo da Vinci's *The Last Supper*, and Raphael. Even without the use of images, he strongly suggests that his philosophical discussion must reach arts in general, going beyond the realm of verbal arts. This is the reason why we understand Bakhtin's presence in the collection. One example:

To purify the expression of the reflected face is precisely the first task to be accomplished by an artist working on his self-portrait. And this task is achieved only by his authoritative and essentially necessary author: it is the author-artist as such overcoming the artist-as-person. It seems to me, however, that a self-portrait can always be distinguished from a portrait by the peculiarly ghostly character of the face: the face does not, as it were, include within itself the full human being, does not encompass all of him entirely. For me, there is something eerie about the forever-laughing face of Rembrandt in his self-portrait or the strangely alienated face of Vrubel [emphasis in original] (BAKHTIN, 1990, p.33-34).

The second work I have chosen to show that the Circle's suggestion on visuality has had important and qualified reception is on aesthetics. It was published in 1995, only two years after *Tekstura. Russian Essays on Visual Culture*. Its author, Deborah Haynes, deals with the *theory of creativity*, which, according to her, was articulated by Bakhtin in his essays written in the 1920s, that is, his first written works, namely *Art and Answerability*, which, for her, is the root of the Bakhtinian thought to be developed throughout his life, *Toward a Philosophy of the Act*, Author and Hero in Aesthetic Activity, and The Problem of Content, Material, and Form in Verbal Art.

According to Haynes, these works build up Bakhtin's moral philosophy, which is not complete due to that fact that, except for *Art and Answerability*, they were not ready for publication. She pinpoints some fundamental concepts for the understanding of his moral philosophy: the moral dimension of the *author*, of *authorship*, and of *creative activity*.

In fact, Haynes pursues the aesthetic theory and some fundamental categories and concepts in these works in order to understand visual art. She attempts to understand and to explain aesthetics theoretically and methodologically, trying to apply it to visual objects from different historical moments, including post-modernism. From different 20th century aesthetics, including those refuted by Bakhtin, Haynes seeks to show that "Bakhtin brings us back to the aesthetics of the creative process itself, back to the activity of the artist or author who creates" (HAYNES, 1995, p.4). She states that Bakhtin, not giving any narrow or complete definition, understands aesthetics as the way human beings shape their experiences, perceive objects or other human beings, and, very importantly, shape this perception in a unitary and unique whole. She also seeks to show that in Bakhtin's aesthetics, he creates his own vocabulary and fundamental concepts, such as *answerability*, *otherness*, *unfinalizability*, *outwardness*, *sphere*, among others. For her, Bakhtin deals with aesthetics as the sphere in which the cognitive-theoretical and the ethical-practical dimensions are articulated – although each one focuses on reality differently – treating art as the aesthetic dimension of life.

She quite rightly emphasized that Bakhtin did not create a systematic *theory* of the creative process and that he harshly criticized theoreticism, that is, the use of theoretical constructions apart from actions, acts, events, life. Haynes states that, instead of dealing with a systematic theory, Bakhtin's essays articulate his aesthetics and his

theory of creativity. Indeed, she wants to determine the importance of Bakhtin's understanding of *creative process* to artists, art historians, and art theorists (HAYNES, 1995, p.7). Although Bakhtin criticized theoreticism, Haynes, trying to refrain from it, explains that she sees theory, in general terms, the way Raymond Williams puts it: A "scheme of ideas which explains practice," that is, "a box of tools from which we take what we need" (HAYNES, 1995, p.7). Haynes says that Bakhtin's first essays work as a box of tools from which she will forge her own theory: she learns about Bakhtin's aesthetics and creativity theory, dialogues with his ideas and uses them in a new context.

As a matter of fact, she attempts to do what Bakhtin suggests: "I take his discourse not as authoritative, but as internally persuasive, as inviting development, extension, and application toward the goal of creative understanding" (HAYNES, 1995, p.15). When she uses his ideas, she does so as a suggestion, for unlike Bakhtin, who focuses on verbal speech, she uses his teachings to analyze visual art. Then she uses another Bakhtinian concept, *re-accentuation*, agreeing with Bakhtin that ideas live for the creator and the perceiver. She also reminds her readers that although Bakhtin makes a few scattered references to visuality – despite his not using a single image in his works – his ideas might be applicable to visual arts.

She presents, thus, the questions which have guided her study: What can Bakhtin teach us about the creative process? What issues does he highlight? Her book attempts to show the fundamentals of Bakhtin's philosophical aesthetics and his philosophy of artistic creativity as well as their possible applicability to what she calls historical art and contemporary art. Another question then guides Hayne's work: How can Bakhtin, a modern thinker, contribute to the reading and the analysis of postmodern art? In *Afterword*, she somehow *Bakhtinianly* answers this question with the following words, used as an epigraph in this article:

One could say that Janus looked into the past *and* into the future. The past: The man Bakhtin is dead; his work, now finalized, lives on. Yet, from another perspective, it remains unfinalizable. As each moment of the present ends, the future begins. Bakhtin's ideas are being developed, extended, applied by scholars who reaccent them, thereby changing their original meaning [emphasis in original] (HAYNES, 1995, p.181).

Differently from the categories and the concepts found in *Tekstura*, Hayne's work outlines an aesthetic theory and the creative process to suggest some founding categories for the study of visual art.

Bakhtin Reframed, the third book chosen, also written by Deborah J. Haynes, somehow continues *Bakhtin and the Visual Arts*. It is divided into six chapters, namely: Bakhtinian Aesthetics; Creativity and the Creative Process; The artist; The Work of Art; An Interpretive Study: Claude Monet; Context, Reception and Audience.

By regarding these three books as mobilizers of the Circle's contribution to the study of visual art, it is possible to say that we significantly have an array of concepts/categories which may be used to the reading and the interpretation of visuality, based on questions which demand a rigorous epistemological, theoretical and methodological positioning in order to be answered.

2 The Verbal-Visual Issue

As one deals with verbal-visuality, one needs some fundamental aspects to be clarified before anything else. There are studies on visuality, which are especially related to art, such as the aforementioned books, which use the Circle's studies to the reading and the interpretation of visuality, of visual culture differently.

Different from these studies are the ones which try to explain verbal-visuality as one sole utterance, whether artistic or not, organized in a gradual manner, for they may focus on one dimension over the other. However, these dimensions are organized in one plane of expression, in a combination of materialities, in an *organized, material expression* as Vološinov puts it in *MPL*. Needless to say, besides the suggestions found in the three aforementioned works, it is known that there are several others. If one understands that Bakhtin's theory of language is a theory of discourse, which deals with utterances, which are always situated, always in clash, one necessarily deals with *dialogical relations* as a founding category, which, along with the ones presented by Efimova, Manovich, and Haynes, are fundamental to the analysis of the verbal and the visual dimensions, and, therefore, of verbal-visuality, the object of this reflection.

We would like to start out our analysis, just like the aforementioned authors have done, from a work of art in which verbal-visuality is present.

2.1 An Image in a Verbal text. An Illustration?



Dostoevsky 2011, p.70 e 71.

The Double, written in 1845/1846 by Dostoevsky, has had several editions including three in Portuguese. In the last Portuguese edition, translated by Paulo Bezerra, drawings by Alfred Kubin (1877-1959), an Austrian expressionist illustrator, are found. Before this edition, there was only Dostoevsky's narrative, but in the 1910s Kubin dedicated himself to creating drawings about *The Double*. In 1913, a deluxe edition came out including 40 drawings and 20 vignettes. In it, text and image are in such a strong dialogical relation that when readers look at both dimensions, in separate pages, they feel these dimensions are "reciprocally contaminated," that is, they feel that the borderline between the verbal dimension and the drawings has been erased, creating joint effects. According to Samuel Titan Jr, in *The Other Double: Dostoevsky Illustrated*, an Afterword in the 2011 Brazilian edition of *The Double*, in the narrative, which is characterized by "the erasure and the confusion of identities," illustrations "become another double" (p.252)⁴. The utterances, that is, the verbal and the visual texts, are created separately, for Kubin illustrated *The Double* after it had been written. The dialogic relation between them is not a simple and submissive caption-image relation; to the contrary, it is a relation of *entanglement*, of an active response to the

⁴ Text in original: "apagamento e confusão das identidades (...) afiguram-se como um outro duplo".

early creative process, to the aesthetics of otherness, such as it is described by Samuel Titan:

Kubin's drawing movement seems to go from lines to doodles and then from doodles to sketches, threatening to make no distinction between background and image, creating counterlight dramatic effects (light at the service of the invisible), and surrendering to mechanical, maybe maniac gestures which accompany the narrative movements and paroxysms. Before this explosive imagination, readers are entitled to ask whether the term "illustration" is applicable [...] Whatever the term may be, the matter of the fact is that Kubin's drawings gradually become the other double hovering above poor Golyadkin – and above every Brazilian reader thenceforth (2011, p.252-253)⁵.

Here it is possible to use the Bakhtinian concepts highlighted by Haynes, such as *unfinalizability*, *answerability*, *outwardness* and even *otherness*, or still, *dialogical relations* – the ones which are not polemic, but additive, almost osmotic, continuous, making us realize that if one utterance existed before the other, in this situation, as they are placed in the same plane, face to face, due to motivation or to the book edition's 'frame,' there is a semiotic-ideological constitutive articulation between the visual dimension, with its specific marks, as Samuel Titan briefly described, and the verbal dimension, creating a double, counterpart effect. In this edition, verbal-visuality promotes meaning production and meaning effect.

2.2 The Verbal Text Denies Image. Provocation?

Another example, this time specifically in visual arts, may help one think of the specificities of a verbal-visual utterance: The well-known René Magritte's painting, in which one finds, in the canvas, the *organized, material expression*, the image of an absolutely perfect pipe, floating in the air, and the sentence "This is not a pipe."

⁵ Text in original: "o movimento da pena de Kubin parece a ponto de passar da linha à garatuja e desta ao borrão, ameaça anular a distinção entre fundo e figura, cria efeitos dramáticos de contraluz (a luz servindo à invisibilidade) e se entrega a gestos mecânicos, talvez maníacos, acompanhando os movimentos e paroxismos da história. Diante dessa explosão de imaginação, o leitor tem todo direito de se perguntar se ainda é o caso de falar aqui de 'ilustração' [...] Seja qual for o termo mais justo, o fato é que os desenhos de Kubin vão aos poucos se afigurando como um outro duplo a pairar sobre o pobre Golyádkin – e doravante, sobre a memória do leitor brasileiro".



1928/29 - René Magritte (1898-1967)

In this case, the visual dimension and the verbal dimension are created at the same time and together they produce meaning. It is not possible to erase or to separately analyze the sentence, written in cursive, for, as a caption, it orients or disorients spectators' interpretation, placing them in a funny or uncomfortable position in relation to their beliefs about art. Much has been talked and written about this painting, its title, its caption, the whole composition. Its dialogic relations are openly polemic and called art representation into question in 1928/1929. The painting provoked serious discussion about the fact that, although being a perfect representation of a pipe, the image was not reality. The polemic and ironic relation between image and caption deconstructs, so to speak, the illusion of reality and, thus, gives image its status of image. The caption in refined teacher-like cursive is given a drawing status, indicating the presence of a hand, *probably* the same hand that holds the brush, and of the interpenetration of letter and line, of the verbal sign and the visual sign. The discourse that creates and permeates the painting is polemic, theoretical, stemming from visual aesthetics, from visual culture and is based on the material expression, which is an invite for reflection. When people/painters invite for a polemic reflection on the material expression of a painting, not only do they mobilize the memory of the object being painted/represented, but they also interfere in such memory by placing the spectator in an uncomfortable position.

To consider Magritte's verbal-visuality necessarily means to consider Michel Foucault's brilliant analysis of *This Is Not a Pipe*'s material expression and discourse. In his work, originally published in 1975 with the same title, he analyzes, among other

elements, calligrams, that is, visual poems which are materialized through the graphic disposition of the written text. He does not say that Magritte's painting and calligrams are isomorphous; he compares them in terms of their relation between the verbal dimension and the visual dimension, erasing, thus, the usual strict dichotomy between them. From Foucault's work, whose every line and every word help readers to understand the painting's syntax and its pictorial and linguistic forms of meaning production, two excerpts are highlighted:

As a sign, the letter permits us to fix words; as line, it lets us give shape to things. Thus the calligram aspires playfully to efface the oldest oppositions of our alphabetical civilization: to show and to name; to shape and to say; to reproduce and to articulate; to imitate and to signify; to look and to read (FOUCAULT, 1983, p.21).

[...] After having invaded the figure in order to reconstitute the old ideogram, the text has now resumed its place. It has returned to its natural site – below the image, where it serves to support it, name it, explain it, decompose it, insert it in the series of texts and in the pages of the book. Once more it becomes a “legend.” [...] but only apparently. Because the words we now can read underneath the drawing are themselves drawn – images of words the painter has set apart from the pipe, but within the general (yet still undefinable) perimeter of the picture. I must read them superimposed upon themselves. They are words drawing words; at the surface of the image, they form the reflection of a sentence saying that this is not a pipe. The image of a text. But conversely, the represented pipe is drawn by the same hand and with the same pen as the letters of the text: it extends the writing more than it illustrates or fills its void. [...] The invisible, preliminary calligraphic operation intertwined the writing and the drawing: and when Magritte restored things to their own places, he took care that the shape would preserve the patience of writing and that the text remain always only a drawing of a representation (1983, p.22-23).

The rigorous analysis of the verbal-visual syntax shows that the utterances are created from certain discourses: In the aforementioned case, the discourse of representation, of aesthetics, of the illusion of reality, with which the painting polemicalizes and shifts the debate to the plane of expression, showing and/or promoting new ways of looking at it. The second epigraph that introduced this article is an excerpt from Bakhtin/Medvedev's *The Formal Methodology in Literary Scholarship* (1991), presented below:

In real fact, seeing and representation merge. New means of representation force us to see new aspects of visible reality, but these new aspects cannot clarify or significantly enter our horizon if the new means necessary to consolidate them are lacking (p.134).

2.3 A question of genre: publicizing and scientific articles

To sum up, I would like to analyze two other texts which, despite being closely related, for they are about a scientific breakthrough, mobilize verbal-visibility differently. They both offer readers different ways to learn about what at first seems to be the same object, that is, science and one scientific discovery. The first one, *Languages in Psychosis*, published in April of 2012 by the journal *Pesquisa Fapesp* (*Fapesp Research*) (p.62-64), is found online at http://revistapesquisa.fapesp.br/wp-content/uploads/2012/04/062-064_1941.pdf. On the *Pesquisa Fapesp* website, readers can find all the magazine articles, which can be read in Portuguese, Spanish, or English. Aiming to publicize cutting-edge research generally funded by FAPESP (São Paulo Research Foundation), the journal is currently divided into the following sections: Scientific and technological policies, Science, Technology, and Humanities. The chosen utterance is in *Science* and was signed by Carlos Fioravanti, who is a special editor of *Pesquisa Fapesp* (he has also been the editor of *Science*), and does research for the Reuters Institute at the University of Oxford. He graduated in Social Communication from Universidade de São Paulo (USP/SP) in 1983, specialized in International Journalism from the Reuters Institute for the Study of Journalism at the University of Oxford (England), and received his PhD in Scientific and Technological Politics from Universidade Estadual de Campinas (Unicamp/SP) in 2010. His article is, therefore, a qualified utterance, written by a specialized journalist. His target readers are not necessarily specialized in highly scientific issues, but are nevertheless interested in becoming qualified readers of this type of magazine and text.

The second text is mentioned on the right side of the last page of the first text. It was published in *Plos One*, a highly qualified scientific journal of great impact, in April of 2012 [v.7 (4)] and can be found at <http://www.plosone.org/article/info:doi/10.1371/journal.pone.0034928>. Its sphere of circulation is different from the first article, for its target readers are scientifically qualified.

What can one observe in these utterances that leads the readers to perceive their differences? Stemming from the hypothesis that although they are very close (they are related to the same research), one can/should consider them as different and independent genres.

Both in the Portuguese printed version (available online in pdf format with the same layout used in the printed version at http://revistapesquisa.fapesp.br/wp-content/uploads/2012/04/062-064_1941.pdf) and in the online English version (available at <http://revistapesquisa.fapesp.br/en/2012/04/05/the-languages-of-psychosis/>) of the article, it is possible to find the brown background, with shades of yellow and orange.

In the printed version, however, one finds the whole utterance, that is, the unit organized in three pages divided into columns, which are filled with verbal and visual sequences. On the top of first page, which has two columns, one finds, right after a yellow line, the verbal expression DIAGNOSIS BY COMPUTER. Underneath it, written in large white font, the title, which is straightforward and appealing for those who are not from this field, is followed by a short abstract, which is on the right-hand side and elucidates the article's thematic content: *A mathematical approach makes evident the difference between the speech of a maniac and that of a schizophrenic*. A few lines downward, the verbal sequence begins, organized in two columns. It is a narrative/report which attempts to clearly explain how difficult it is for psychiatrists to know the difference between two types of psychosis – schizophrenia and mania. That allows the writer to introduce the article's central topic, that is, the mathematical approach developed by the *Instituto do Cérebro da Universidade Federal do Rio Grande do Norte* (Brain Institute from the Federal University of Rio Grande do Norte), which aims not only to establish the difference between the two psychoses but also to provide patients with the adequate treatment. The enunciator, who is not involved in the research, for he is a journalist, explains the strategy used for data analysis based on graph theory. He, thus, introduces a discourse that is not his: The other discourse, the voice of the Institute psychiatrist, is the researcher's, the work's author, who was interviewed by the journalist. The report and the citations constitute the structure of the verbal utterance and provide readers with the opportunity to understand the importance of the research, its originality, its development, the methods used (recording and

transcription, analysis parameters) as well as the role of interdisciplinarity, of the results, and still of the fact that the research was published in *Plos One*, a scientific journal.

In a constitutive relation with the verbal sequences, the visual sequences define the utterance as a verbal-visual whole. The graphs and the wood doll, which, by its position in the text, symbolizes the research subject, build, along with the verbal sequence, the body of knowledge presented in the article and represent the readers' possible understanding of the text, for they become interested in the subject and are able to understand what is reported and illustrated, which involves *discourse*, that is, the fact that the pathology defines discourse, even if they are not Science or Psychiatry experts. Readers also get to know that this is a Brazilian research, which for the first time uses a mathematical method in order to try to understand speech, its variations, and the possibility of giving more accurate diagnoses and, consequently, more favorable treatment to patients. The whole article was written in Portuguese, which includes the words in the illustrations. From the way it is presented, it is possible to state that this scientific article captures certain reality and uses certain resources to present it; this makes it different from other genres which may discuss the same topic. And laypeople become interested in it: Is mania a psychosis? How come?

The second text on the same topic is in *Plos One* at <http://www.plosone.org/article/info:doi/10.1371/journal.pone.0034928>. From the webpage, two pages were inserted below in order to illustrate the analysis. The first one (figure1) shows, right after the paper's header (title, field, metrics, etc.), the authors' names, the abstract, the figures (in fact, it is possible to visualize the images by clicking on them, which demonstrates how highly important they are to the authors/readers), the data for the paper's citation and the journal's data (editor's name, university, paper submission and acceptance dates, Copyright), the foundations that supported the research, and a remark on possible competing interests. On the second page (figure 2), there are a graph and a discussion section.

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RESEARCH ARTICLE

Speech Graphs Provide a Quantitative Measure of Thought Disorder in Psychosis

Natalia B. Mota, Nivaldo A. P. Vasconcelos, Nathalia Lemos, Ana C. Pieretti, Osame Kinouchi, Guillermo A. Cecchi, Mauro Copelli, Sidarta Ribeiro

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Abstract

Background

Psychosis has various causes, including mania and schizophrenia. Since the differential diagnosis of psychosis is exclusively based on subjective assessments of oral interviews with patients, an objective quantification of the speech disturbances that characterize mania and schizophrenia is in order. In principle, such quantification could be achieved by the analysis of speech graphs. A graph represents a network with nodes connected by edges; in speech graphs, nodes correspond to words and edges correspond to semantic and grammatical relationships.

Methodology/Principal Findings

To quantify speech differences related to psychosis, interviews with schizophrenics, manics and normal subjects were recorded and represented as graphs. Manics scored significantly higher than schizophrenics in ten graph measures. Psychopathological symptoms such as lgorrhea, poor speech, and flight of thoughts were grasped by the analysis even when verbosity differences were discounted. Binary classifiers based on speech graph measures sorted schizophrenics from manics with up to 93.8% of sensitivity and 93.7% of specificity. In contrast, sorting based on the scores of two standard psychiatric scales (BPRS and PANSS) reached only 62.5% of sensitivity and specificity.

Conclusions/Significance

The results demonstrate that alterations of the thought process manifested in the speech of psychotic patients can be objectively measured using graph-theoretical tools, developed to capture specific features of the normal and dysfunctional flow of thought, such as divergence and recurrence. The quantitative analysis of speech graphs is not redundant with standard psychometric scales but rather complementary, as it yields a very accurate sorting of schizophrenics and manics. Overall, the results point to automated psychiatric diagnosis based not on what is said, but on how it is said.

Figures

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Figure 1

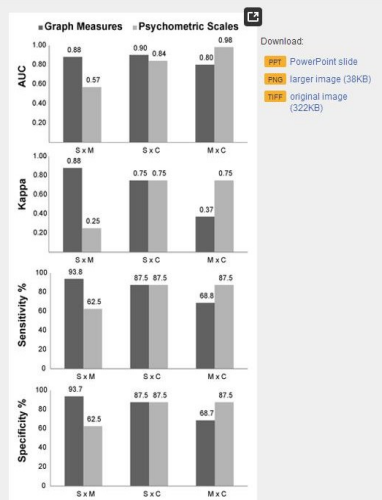


Figure 8. Speech graph measures provide better differential diagnosis of mania and schizophrenia than standard psychometric scales (BPRS and PANSS).
 Group sorting using graph measures as inputs to the NB classifier was excellent to separate schizophrenics from manics. The measures used as inputs were N, E and ATD for S x M, N, L1 and L2 for S x C, L1, L2 and L3 for M x C. In contrast, group sorting using BPRS and PANSS total scores as inputs for the classifier was successful in separating controls from psychotic patients (either S or M), but sorting between schizophrenics versus manics (S x M) was poor.
 doi:10.1371/journal.pone.0034928.g008

To further investigate the issue of classifier accuracy, we compared the group classification obtained by the NB model [18], [19] with four other binary classifiers: Radial Basis Function (RBF), Multi-Layer Perceptron (MLP), Support Vector Machine (SVM), and Decision Tree (DT). As shown in Table S5, all classifiers sorted manics from schizophrenics better when the inputs were speech graph measures, in comparison with psychometric data. The best results were obtained using RBF and NB (93.8% of sensitivity and 93.7% specificity). The sorting of schizophrenics versus controls was similar for psychometric and speech graph measures, but the sorting of manics versus controls was better when psychometric measures were used as inputs (Table S5).

Discussion

The results show for the first time that a graph analysis of the speech produced by psychotic patients can be used to quantitatively sort manics from schizophrenics. Indeed, this approach allowed for a very accurate discrimination of the pathological groups of interest using various binary classifiers, reaching more than 93% of sensitivity and specificity in the separation of schizophrenics from manics. In contrast, sorting based on the scores of two standard psychiatric scales (BPRS and PANSS) reached only 62.5% of sensitivity and specificity. This indicates that the quantitative analysis of speech graphs is not redundant with the major psychometric scales but rather complementary, because it measures speech structure symptoms not well grasped by those instruments.

Our approach was not purely topological, since two out of the fourteen graph measures investigated in the present study required semantic node labeling (i.e., waking versus dreaming). Notwithstanding, none of the remaining measures required any interpretation beyond the differentiation of lexemes, strictly at the grammatical level. Importantly, the data fed to the binary classifiers did not include those two waking-related measures.

Symptoms such as poor speech, logorrhea and flight of thoughts were detected by graph analysis even when inter-individual differences in verbosity were accounted for. Manics produced more parallel edges per word and more waking edges per word than schizophrenics. This means that the "logorrhea" typical of manics [1] comes not only from the excess of words, but from a discourse that branches more and returns more times to the same topic, in comparison with schizophrenic group. Likewise, "flight of thoughts" cannot be trivially explained by increased verbosity, but rather corresponds to a structural feature of manic speech. On the other hand, schizophrenics displayed more nodes per word and a higher average total degree per word than manics. This means that schizophrenics tended to address topics only once, neither branching nor recurring, a reflection of the "poor speech" typical of these patients [1].

It has been recently observed that the amount of loops in a network is inversely correlated with its dynamical stability [20]. In our study, the presence or absence of loops is directly related to the recurrence, or lack thereof, of similar thoughts in the course of the interviews. The fact that mania reports have more parallel edges per word than reports from schizophrenics may therefore reflect the decreased stability of manic speech. On the other hand, the increase in schizophrenics of the amount per word of nodes and average total degree points to the increased stability of schizophrenic speech, in comparison with manic speech. These features likely influence disease course, producing cyclic symptom changes in manics [3] and persistent symptoms with monotonic clinical evolution in schizophrenics [3].

Manics produced significantly denser graphs than schizophrenics, with significantly smaller diameter and average shortest path. Small variance characterized both psychotic groups, while controls yielded a wide range of values with high variance. These results reveal the strong pathological determination of the global network measures, which seems to constrain the structure of manic and schizophrenic speech in opposite ways. In contrast, controls free from such a determination expressed the global features of speech with much larger inter-individual differences, suggesting that the structural variance of speech increases in the absence of pathological constraints.

Our results connect the quantification of mental disorders with research on computational semantic analysis, fueled by the expanding availability of online text corpora and computational resources [21], [22]. The data demonstrate that the alteration of the thought process manifested in the speech of psychotic patients can be objectively measured using graph-theoretical tools, developed to capture analytically some intuitive features of the normal and dysfunctional flow of thought, such as divergence and recurrence. The classification accuracy obtained using these graph features provides validation to the method, as it matches the consensus of experts. By the same token, the results indicate that the differential diagnosis of psychosis can be greatly improved by speech graph analysis. The networks studied here were relatively small, reflecting the difficulties in obtaining speech graphs from psychotic patients interviewed during clinical examinations. Future work should challenge the robustness of our results, assessing their clinical significance on substantially larger samples. We propose that such a quantitative approach may soon allow doctors to identify mental disorders and track the progress of treatment in an automated manner [23], i.e. through a psychiatric Turing test [24].

Figure 2

This text is only in English although all but one author are Brazilian. It underwent a rigorous selection process and was published in an international journal of great impact and great importance. The article, following the journal's manuscript guidelines, that is, its strict coercive rules of production, does not only report a unique experience – the use of graphs, of mathematics to clarify some aspects of thought disorder in psychosis; it also builds a body of knowledge from this very text, sharing it with experts. This makes it different from the article published in *Revista de Pesquisa FAPESP*. *Plos One* readers are, so to speak, verbal and visually literate and familiar with this type of research. The scientifically written article as a whole is very different from the article published in *Revista de Pesquisa FAPESP* because the latter aims at publicizing science. That is a production mark, for the authors of the *Plos One* article are the scientists who conducted the research. They are the ones who 'sign' the work, which rebuilds, through language, through scientific speech, the body of knowledge produced in this research. Language is highly specialized and adequate to a scientific article genre and not exclusively to the authors' style. Tables and graphs are not used simply to illustrate: They are part of the knowledge shared in the article and establish a constitutive dialogue with the verbal sequence. As to the article's reception and circulation, it uses a totally different means if compared to *Revista Pesquisa Fapesp*, which, although extremely prestigious, aims to publicize important scientific achievements not to scientists only but to a general Brazilian public in Portuguese.

Although *Plos One* is an open online journal, it circulates among scientists, experts in the thematic context, employing English as its lingua franca, the language of the scientists' experiences and achievements. Therefore, as its reach is much wider, it is more subject to polemic than *Revista Pesquisa Fapesp*.

It is evident, thus, that we are before two different genres: One circulates in the journalistic sphere to publicize science and the other circulates in the scientific sphere itself. In the journalistic sphere, the journal's objective is to publicize scientific achievements to people who, although interested, do not master the scientific jargon. In the scientific sphere, the submitted text (utterance) is evaluated by peers before it is published; it becomes part of the knowledge being produced insofar as the experience, by articulating the verbal and the visual dimensions, is constituted by the specificities of the knowledge area in question in accordance with the coercions of a scientific article,

written to this scientific journal, which inevitable interferes in the genre and in the author's style.

What do both articles have in common, which undoubtedly creates a frontier between them? Certainly, it is the scientific breakthrough; however, due to how it is treated differently in the sphere in which it is produced and circulates, to its target readers, it results in different utterances, in different genres and is received differently. This reiterates Bakhtin/ Medvedev's assumption that

each genre is only able to control certain definite aspects of reality. Each genre possesses definite principles of selection, definite forms for seeing and conceptualizing reality, and a definite scope and depth of penetration" (p.131).

Or still that "The scientist sees life in a different way, from the point of view of the means and devices for mastering it. Therefore, other aspects of life, other relationships, are inaccessible to him" (BAKHTIN/MEDVEDEV, 1991, p.135).

Not only are there differences between the scientist and the artist, but there are also differences between the scientist and the journalist. The genres used by them to "control certain definite aspects of reality" are different, or better yet, are never the same. Consequently, the verbal-visual articulation has different functions. In *Revista Pesquisa Fapesp*, for example, the journalist/editor quotes a drawing which is in *Plos One* and uses an illustration/entertainment that would never be used in *Plos One*. The quotes, which resemble repetition, offer enunciative-discursive marks which signal otherness, the dialogue with the *other* in a scientific sphere, and the publicizing identity which not only moves knowledge but also rebuilds it differently. In fact, in *Revista Pesquisa Fapesp*, the illustration is important to help readers' understanding through visual means since it does not aim to build knowledge from a scientific object in question. The target seems to be the readers and their needs so that the verbal-visual articulation acquires the status of *illustration*, reiterating the dimensions provided by the verbal sequence and filling in possible/assumed blanks.

In *Plos One*, both the visual and the verbal dimensions are part of the object construction, building scientific knowledge woven between both *languages*. The experience is materialized in and by verbal-visual language, which implies that readers should master both languages whenever they go from page to page and from diagram to

diagram and from graph to graph. The specific target is the construction of the object of knowledge, although the interlocutors (the peers) are also aimed at. Verbal-visuality helps build the object of knowledge from a theoretical-methodological perspective. The visual dimension, thus, constitutively interacts with the verbal dimension (or vice-versa), adding value to it. Without this visual-verbal play, it is not possible to build the object of knowledge, nor the subjects involved in the construction and the reception of knowledge.

Final remarks

I would like to end this article by reaffirming that verbal-visuality, inspired by the Bakhtinian thought, is possible and plays an important role to understand the contemporary world and to teach this understanding, which demands much effort and theoretical-methodological rigor. From the dialogic perspective, the verbal-visual utterance/text as a whole is characterized as an enunciative-discursive dimension which reveals authorship (whether individual or collective), from different types of dialogue, discourse and evidences somewhat tense relations interwoven by vis-à-vis speech promoted by verbal-visuality. They are presented as otherness, which, when in confrontation, summons memories of subjects and objects and create new identities.

The consequence of the readings done in this article is that it is possible to observe that authorship and interlocution are different in each utterance. That can be perceived in their material expression, their production, circulation and reception specificity, their target interlocutors, and their spheres of circulation. These elements build different knowledge and knowledge objects even when the subject matter seems to be the same as the articles analyzed before have shown.

If we cling to the simple idea that genres are composed of thematic content, style, and compositional structure, the hypothesis on the importance of verbal-visuality, also from this perspective, which necessarily implies textual and discursive differences, seems to be confirmed. We notice that, in each utterance, the visual element is differently articulated with the verbal element. That interferes in its compositional structure, its style, and, consequently, in the thematic content it produces. They are, thus, projects of knowledge construction which are verbally and visually constituted.

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Translated by Orison Marden Bandeira de Melo Jr – junori36@uol.com.br

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