

Persuasion in Social Propaganda About Dengue Fever: A Systemic-Functional Linguistic approach

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Abstract—This paper reports aspects of social advertisements, that are part of a rich discursive genre evidenced by their increasingly common exposure on social media and require the use of varied semiotic resources to be fully understood. It sought to investigate how persuasion is employed in government social advertising about dengue fever on a social media outlet. To achieve this goal, this study investigates an evaluation between images and words in the persuasive process in the construction of meaning using Visual Design Grammar and Systemic-Functional linguistics. Through an analysis of data collected from three social advertisements, the results were: in terms of ideational metafunction, the most used transitivity process was the material process; persuasion via seduction and persuasion via conviction were used in the corpora.

Keywords—metafunction, persuasion, systemic-functional linguistics, social advertisement

I. INTRODUCTION

Fluctuating between information and manipulation, advertising has often resorted to implicit communication. The growing notoriety and eminent potential of multimodal texts in the media, due to the advent of technology and communication, brings changes in the ways of communicating to a point where the interweaving between the verbal and the imagetic has a remarkable development with consequences that can be observed in different nuances. Visual characteristics are increasingly unfolding in our culture with the use of images, colors, non-verbal resources, and illustrations, not only with equivalence of support, but also with pervasive characteristics that require specific and contextualized readings.

The use of social networks has increased exponentially and so has advertising on them, especially on the most used social network in Brazil, Instagram. It is used by almost ninety percent of the country's internet users, and almost seventy percent of them say they use social media to keep up to date.

In this context, social advertisements are part of a rich discursive genre evidenced by their increasingly common exposure on social media and require the use of varied semiotic resources to be fully understood. The use of multimodal texts, such as social advertising in online contexts, can have enormous impacts on persuasion, particularly in worlds of color and screens like ours. Advertising itself has the basic aim of influencing people's behavior [1], and social advertising aims to convince individuals to change their attitude towards a dramatic problem of social relevance or to modify a well-established behavior towards socially responsible conduct [2].

Advertising, due to its persuasive nature and its ability to capture readers' attention, can motivate audiences effectively [3]. In addition, advertisements are useful for

capturing attention, responding to cognitive needs, and ultimately bringing about changes in behavior [4]. In many ads, the persuasive function can be strategically hidden [5].

As Kress says [6], writing, previously the canonical mode par excellence, is giving way to the image, constituting what has been called multimodality. Images and writing have their own specific potential, in other words, their own capacity to create meaning. On one hand, the image is supported by the logical arrangement of space; language, on the other hand, it is based on the logical sequence of time and contains words, sentences, etc. Given the difference in representation, each mode is used to achieve a specific semiotic goal [6].

Previous studies have explored how social media has been used to inform about dengue viral infection [7–9], for example. We found that none of them analyzed the covert forms of the government's social advertisements on dengue fever using persuasion and ideational metafunctions, as well as analyzing images through Visual Design Grammar [10].

This study sought to investigate how persuasion is employed in government social advertising about dengue fever on a social media outlet - Instagram. To achieve this goal, this study investigates an evaluation between images and words in the persuasive process in the construction of meaning using Visual Design Grammar (VDG) [10] and Systemic-Functional Linguistics (SFL) [11].

II. CONTEXTUALIZATION

Since Systemic-Functional Linguistics seeks to relate linguistic structures to the social context in which they are produced, it is important to contextualize this study. According to the World Health Organization (WHO), dengue has become a growing public health concern, with approximately four billion people in more than one hundred countries identified as being at risk of infection. In Brazil, in the first three months of 2024, there will be more than two million confirmed cases of dengue infection and almost a thousand dengue-related deaths. This is already more than half of the cases confirmed last year, which was almost twenty percent higher than two years ago, according to the Brazilian health authorities. Dengue fever is rampant in Brazil.

In 2024, Brazil became the first country in the world to offer the dengue vaccine in its public health system. Social advertisements from the government urging the vaccination campaign and information about dengue appeared on official government Instagram profiles, such as the official profile of the Federal Government, the official profile of a state, Maranhão, and the official profile of a city hall, São Luís, which were the ones analyzed in this study and more details about them will be in the 'method' section.

In a socio-historical panorama, as an example to consider, at the beginning of the COVID-19 pandemic, in a context of a shortage of vaccines and medicines, the government of the state of Maranhão followed the WHO's recommendations, even though these recommendations were not followed or disseminated by the former president of Brazil. The far-right ex-president's pseudo-arguments contributed to the disqualification of vaccines, to hesitant individuals refusing them and to adding distrust to both the origin of vaccines and political-ideological factors [12]. This misinformative discourse has defamed vaccination, as well as devastating other types of immunization throughout the country [13]. In a study on political ideology [14], it is stated that the likelihood of willingness to be vaccinated is accentuated among the population that identifies itself on the left of the political-ideological scale, while this willingness falls among individuals on the right of the political-ideological axis.

Thus, since several states in Brazil, including Maranhão, have declared a health emergency, as rising global temperatures and a season of heavy rainfall have brought outbreaks of tropical diseases, such as arboviruses like dengue, which is transmitted by the *Aedes aegypti* mosquito, this study aims to investigate how persuasion is employed in the government's social propaganda about dengue on social media.

III. LITERATURE REVIEW

Systemic-Functional Linguistics is a theoretical methodological study proposed by Halliday [11], which was later developed by key figures in this field, including Christian Matthiessen, James Martin and Ruquiya. There are four premises underlying SFL: language use is functional; its function is the construction of meanings; therefore, its purpose is semantic; meanings are directly influenced by the social and cultural context in which they are exchanged; and, finally, the process of language use is semiotic [15]. In order to classify the types and meanings generated by social actors, SFL conceives of language as the expression of three metafunctions, which act simultaneously: ideational, interpersonal and textual.

The ideational metafunction is related to meaning, which concerns the way external reality is represented in the text, the content of the message and refers to the function of language to describe human activities or experiences. One of the main components of the ideational metafunction is transitivity. The transitivity of verbs is an important semantic system for expressing the ideational function and includes six processes: material process-indicates physical action in the real world; behavioral process-a hybrid process that is mainly a mixture of a material and mental process; mental process-represents the processes of cognition, affect and perception; existential process-represented by an empty "there" in the subject position to indicate the processes of existence; relational-expresses possession, equivalence, attributes; and verbal-represents the process of communication.

Transitivity [11] also deals with the encoding by language users of their experiences of the world in which they live and is interested in the semantic power relations of who does what to whom. From this perspective, Fowler [16] suggests that transitivity analysis can offer insights into the writer's perceptions of actions, events, situations, as well as the ways

in which the reader's interpretation is oriented in a particular direction. Ultimately, it allows us to see how linguistic structures construct specific ideologies [17].

The interpersonal metafunction, for the social relation of enaction, is a function by which speakers participate in speech events, make comments, and take on communication roles [11]. It is the metafunction that is considered as a piece of interaction between the speaker and the listener. In this metafunction, a clause is analyzed in terms of mood and residue. Mood can be identified as the grammatical structure that makes the interactional movement in the dialogue. Modality can be defined as the grammar of explicit comment, how people express their degree of commitment to the truth of the propositions they utter, and their views on the desirability or otherwise of the situation referred to [16].

The textual metafunction [11] is realized through thematic structure-including the theme and patterns of thematic progression-information structure-given and new units of information-and cohesion, which includes reference, conjunction, ellipsis, and lexical cohesion. This metafunction is language-oriented and is realized in the theme.

Multimodality is conceived as the use of varied semiotic modes and their combinations in a sociocultural domain that results in a semiotic event or product [10]. Thus, a multimodal text is one that integrates more than one mode of semiotic representation and uses more than one language modality or more than one system of signs or symbols (semiosis) in its composition. Kress and van Leeuwen [10] propose the Theory of Multimodality, based on LSF [11]. In this proposal, the authors relate the theoretical notion based on ideational, interpersonal, and textual metafunctions with the analysis and combinations between verbal and non-verbal language.

The authors in Ref. [10] propose three metafunctions: the representational, parallel to the ideational, works to show how the image conveys aspects of the natural world and shows the ways in which participants, events and their associated circumstances are realized [18]; the interactional, parallel to the interpersonal, works to show how an image engages with the viewer, for the relationship between represented and interactive participants; and the compositional, parallel to the textual, works to show how the elements of an image are organized or reproduced to achieve its intentions and effects.

The authors in Ref. [10] state that the integration of different semiotic modes is the result of a comprehensive code whose rules and meanings provide the multimodal text with the logic of its integration. Thus, verbal, and visual structures are not options for representing the same thing, as each has its own rules and codes for doing so.

Kress and van Leeuwen [10] explain that there are three major systems for analyzing the meaning of visual communication in the relationship between producers and viewers of an image, such as: contact, the action of the image on the viewer, offering visual information; social distance, through which the viewer is invited to come closer to the participants represented (intimate social distance), kept at a distance (social distance) or placed at a distance (impersonal distance) [19]; and attitude, which is realized by the perspectives, which are divided into a vertical dimension, which represent power differentials between the viewer and

what is seen, as a relationship of power of the viewer; and a horizontal dimension, through which the participants are presented in a frontal and oblique way [19].

A basic consideration for EFL is the interrelationship between language and context, so that understanding a text cannot be achieved solely from grammatical and lexical constructions. Context plays a fundamental role in the construction of discursive organization, involving the notions of genre and register. SFL approaches register in terms of three variables or parameters: field, which covers the socially recognized action in which the participants are involved; [11] tenor, which concerns the relationships between the speaker and the audience, including the type of interaction and the level of formality in the linguistic act; mode, which is the medium through which communication takes place and which covers the selection of options in textual systems and the selection of cohesive patterns [11]. The analysis of the situational context aims to avoid subjectivism in the analysis [11].

Language means interaction and its use reveals the relationships that people wish to establish, it is governed by intention and is essentially argumentative. In this context, persuasion tends to be implicit and to avoid the attitudinal language normally associated with interpersonal meaning, depending above all on the system of shared rules [20]. Persuasion can be achieved [21] through conviction - which involves presenting a series of argumentative steps, through a logical process of accepting a form of reasoning - or seduction - which implies emotional involvement - or a combination of the two. Another aspect that can be identified in persuasive texts is based on repetition. Repetition can focus the reader's attention on a particular subject and therefore act to persuade the interlocutor of the topic he or she wishes to address or delve into [22].

Since all the corpora analyzed had emojis, a brief explanation of these graphic representations is necessary. With the constant improvement of text messaging technology and social networks, visual resources have been developed to encourage the communication process and it is in this context that emojis emerge, which are pictograms that can represent feelings, ideas, or events [23]. This type of image in online communication is effective in engaging and capturing the message, increasing the liveliness of the content [24], contributing to the visual aesthetics and attractiveness of social networks [25]. In addition, emojis in online communication tend to positively increase the reader's affect, which can increase the intention to purchase what is being offered [26], such as the intention of government social advertisements.

IV. METHODOLOGY

Based on ALE and GVD, this study addressed the following research questions: how is persuasion carried out in the government's social propaganda on dengue? what processes related to transitivity were used? Were emojis used in persuasion? To answer these questions, data was collected by searching Instagram on three official government accounts (one for the municipality-São Luís Health Department-, one for the state-Maranhão Health Department-and one for the Ministry of Health of Brazil). A social advertisement was chosen from each of these accounts. After collecting the data,

the social advertisements were named '01 advertisement', '02 advertisements' and '03 advertisements', to facilitate analysis. The processes of transitivity, content, field, mode, contact, social distance, attitude, and the use of emojis were analyzed.

V. RESULTS OF DATA ANALYSIS AND DISCUSSION

As already mentioned, the research in this paper includes three government social advertisements on dengue fever. Two of them focus on vaccination against dengue, and the other focuses on information about dengue. These are the three advertisements:

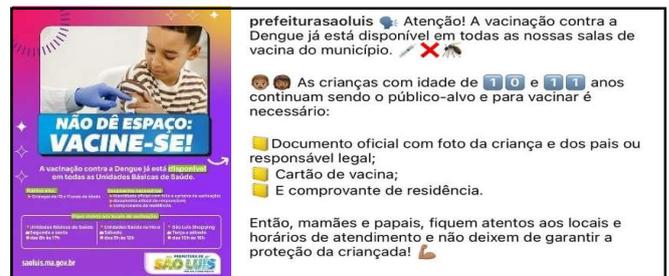


Fig. 1. São Luís.

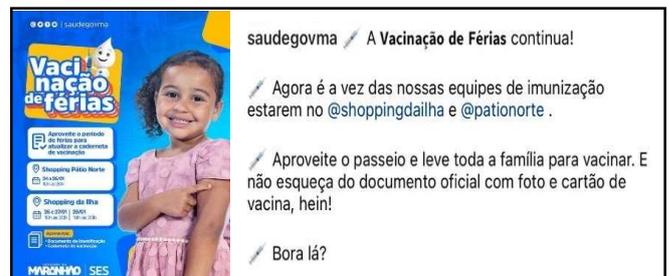


Fig. 2. Maranhão.



Fig. 3. Brazil.

The government's first social advertisement, called, Fig. 1: São Luís, was published on February 19th on the official Instagram account of the municipality of São Luís. The article deals with vaccination against dengue for children aged ten and eleven. The content suggests a health worker, by the blue glove pointing to the gauze on the child's arm, who has just been vaccinated. It also features a child representing the age group, ten and eleven, who is supposed to be vaccinated at the time the social ad was published. This suggests a close relationship with the reader. His manner suggests the use of very simple vocabulary, colloquialism, and aims to inform the adult audience to get their children vaccinated.

This ad corresponds to close social distancing, even though the child's eyes are at a vertical angle, not looking at the reader, but at the place where she was vaccinated against dengue.

The government's second social advertisement, called "02

ad”, Fig. 2: Maranhão, was published on January 23rd on the official Instagram account of the state of Maranhão. The article talks about the free dengue vaccination for children offered by the government. The content suggests a child who represents the age group being vaccinated at the time the social advertisement was published, suggesting a close relationship. The manner suggests an easy vocabulary, using colloquialisms. The contact produced by the gaze, by the girl looking directly at the audience/reader, establishes an imaginary relationship with them [11]. The girl is at a close social distance, as well as representing most of the Brazilian population, blacks and browns. It is inferred that, by touching her arm with her index finger, she is showing that she has been vaccinated/will be vaccinated. She is positioned on the horizontal line segment that makes a frontal angle with the reader, which allows for interactivity, and is at the same level as the reader. It is inferred that, by smiling, she is suggesting involvement.

The government’s third social advertisement, called ‘03 ad’, Fig. 3: Brazil, was published on January 25th on the Ministry of Health’s official Instagram account. The pitch is about the first doses of dengue vaccine that would be distributed to endemic Brazilian cities. The content shows a man, representing Brazilian public health endemic agents, and suggests a close relationship between the ad and the reader. The style uses formal language. The man representing the health agents is placed on the horizontal line segment that makes a frontal angle with the reader, which allows for interactivity, and is also at the same level as the reader. He has an affable smile, which can demonstrate a close relationship with the reader, as well as representing most of the Brazilian population, blacks and browns. The man and his words are in contrast with the blurred background, showing a predominance of information that denotes that he, representing all public health agents, is important in the fight against dengue, as well as the written text, which, basically in yellow, has the main important information, such as when vaccination will begin. It is understood that the non-verbal representation of a man dressed as a health agent together with the verbal text work to persuade social propaganda.

The transitivity analysis of the corpus is shown in Fig. 4:

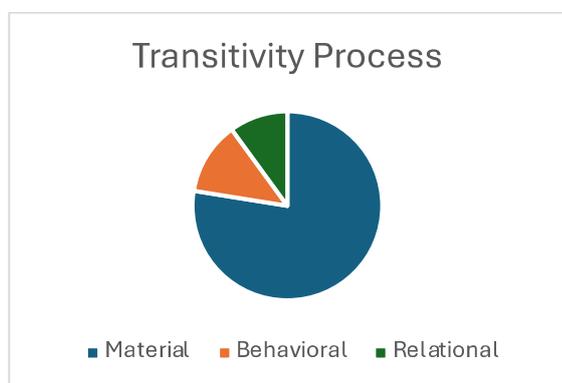


Fig. 4. Transitivity analysis.

The transitivity process: in 1 ad, there are nine material processes and one behavioral process; in 2 ads, there are fifteen material processes, one relational process and three behavioral processes; in 3 ads, there are seven material processes, 4 relational processes and 2 behavioral processes. This scenario shows that 77.5% of the processes used were

material and this preponderance of material processes suggests that social advertisements deal with physical, concrete, and tangible actions. This is well understood, since a material process indicates physical action and most mosquito breeding sites are found in homes, so actions by the population can help eliminate these places, for example. Thus, the 3 ads focus on the material process so that their readers/population can act against the mosquito by helping to destroy its breeding sites and vaccinate. Material processes were also used in the social government ads to ask parents to take their children to the city’s vaccination sites, along with imperative verb tenses, and thus persuade readers.

With the second highest occurrence, 12.5% of the processes used were behavioral processes, which is a mixture of a material and a mental process. In the cases used in the social advertisements, behavioral processes tended towards material processes. This may denote the fact that the extracts from the corpus are concerned with the psychological and physiological needs of the participants. And relational processes occurred 10% of the time, which is a process that expresses a state of being and serves to characterize and identify [11].

Another point to consider that also acts in the process of persuasion is the use of emojis. There were eighteen emojis in the corpus analyzed: 6 of them were the syringe; 3 were the yellow hardcover spiral notebook; 2 were the arm flexing to show the biceps muscle; a boy; a girl; four numbers; a talking head; a large red cross, displayed in the form of a letter “X”; and a mosquito.

The syringe emoji was present in all three social advertisements. Basically, it reinforced the word vaccine/noun vaccination in all of them. Furthermore, it is inferred that this repetition of emojis is part of the persuasion in the corpora and that it can increase the government’s social advertisements, so that people update themselves and get vaccinated. In the first ad, there is a sequence of three emojis- a syringe, a red cross, and a mosquito- right after a written text that can be translated as “vaccination against dengue”. This allows us to infer that the sequence of emojis has a verbal meaning according to the social context of the publication: syringe = vaccination; red cross = against; mosquito = dengue disease. Consequently, it can be said that emojis work in conjunction with written text and vice versa, so they can reinforce the meaning and increase the visual aesthetics and attractiveness of social advertisements. They can also be used to emphasize the information given, as when they were used to indicate the age range of children who could be vaccinated at the time the social advertisement was published.

Reinforcement of the information given was also done using the spiral notebook, just before the information given about the documents that should be taken to the vaccination sites. Both arm-bending emojis were placed right after the words (translation) ‘protection’ and ‘combat’, and as this emoji can represent strength, after vaccination, or the place where people get vaccinated against dengue, on the arm, it can be said that they are also used as a persuasion strategy. The boy and girl emoji, just before the word “children” (translation), are also used to reinforce persuasion, both through repetition and seduction. Thus, the meanings of the emojis are anchored in the verbal text, acting as persuasive support in government social advertisements.

Persuasion by seduction is also identified when the corpora use people who look good, smile or look directly at the reader, and who may have a significant resemblance to the local population in terms of skin color, as well as showing children being vaccinated, since the publications also aimed to inform adults, such as parents, to take their children to the vaccination sites, and adults to take care of the children, acting with emotion. Persuasion by conviction is identified when the corpora use data, figures, information from the health department and the WHO to reinforce their objective. For example, the WHO was used to ensure that the information used was reliable, functioning as a strong mode of persuasion. It is therefore possible to find different types of persuasion in the same government social propaganda, even if implicit.

Color is the key to semiotic resource. All three ads have the predominance of blue color in them and the meaning behind this choice can be associated with soothing and reduce stress as it is rated as the best color for promoting calm [10]. This feeling can be related to way population should act, despite the material process, suggesting physical action to get vaccinated, they should remain calm because the government is acting as well.

VI. CONCLUSION

This study analyzes persuasion in government social advertisements about dengue fever. Through an analysis of data collected from three social advertisements on Instagram, the following results were identified: in terms of ideational metafunction, the most used transitivity process was the material process; persuasion via seduction and persuasion via conviction were used in the corpora, including in the same social advertisement to persuade readers with its focus, which was, in general, information about vaccination against dengue. Emojis were used to reinforce verbal information, and the most used was the syringe, used in all the advertisements. It can therefore be said that verbal and visual communication worked together to persuade readers and that explicit and implicit persuasion was used. It is understood that this study has some limitations, since other concepts, such as the use of colors, could be analyzed in further studies, according to ESL and GVD.

CONFLICT OF INTEREST

The author declares no conflict of interest.

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