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Methodologies for Exploring the Pluriverse: Analyzing Brazilian Graphic Artifacts Production in Social Networks

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Abstract: The production of design as a methodological and research practice sets out paths for teaching in the pluriverse. From the results of the doctoral thesis *“The image-message: visual culture and design of dissent in social networks”* by Prata (2022), the article discusses the use of interdisciplinary graphic experiments in the research process on visual culture, focusing on Brazilian production of dissenting communication design in social networks and the politicization of data. These graphic artifacts, captured by Artificial Intelligence and guided by an activist thematic approach – such as racism, LGBTQIA+, democracy and indigenous peoples' rights – resulted in a significant sample of the spectrum of visual languages emerging from the digital context. They give visibility to many voices and enable cultural and institutional transformations in the decolonial process, in the practice and teaching of design. These narratives represent transition discourses of the Global South through a pluriversal design.

Keywords: Communication Design, Design of Dissent, Design Culture, Graphic Memory, Global South

1. Introduction

Design practice, design research and education are elements of a constantly evolving system in which tools and drawing operate interchanging initiatives in the contemporary pluriverse. This article discusses these practices by presenting the methodology applied in the doctoral thesis *“The image-message: visual culture and design of dissent in social networks”* (Prata, 2022). Based on them, it seeks to contribute to the debate on the political dimension of design in the pluriverse, according to the concepts of Colombian anthropologist Arturo Escobar (2016), for whom design is seen as an autonomous tool to represent specific realities, to create narratives whose discourses complement and expand current bibliographies and visual references, mostly related to the production of the Global North. Thus, this text suggests the relevance of project, experimental, and interdisciplinary practices allied to theoretical research as fundamental tools for researchers and advisors at the doctoral level of graphic design in the current context of the Global South.

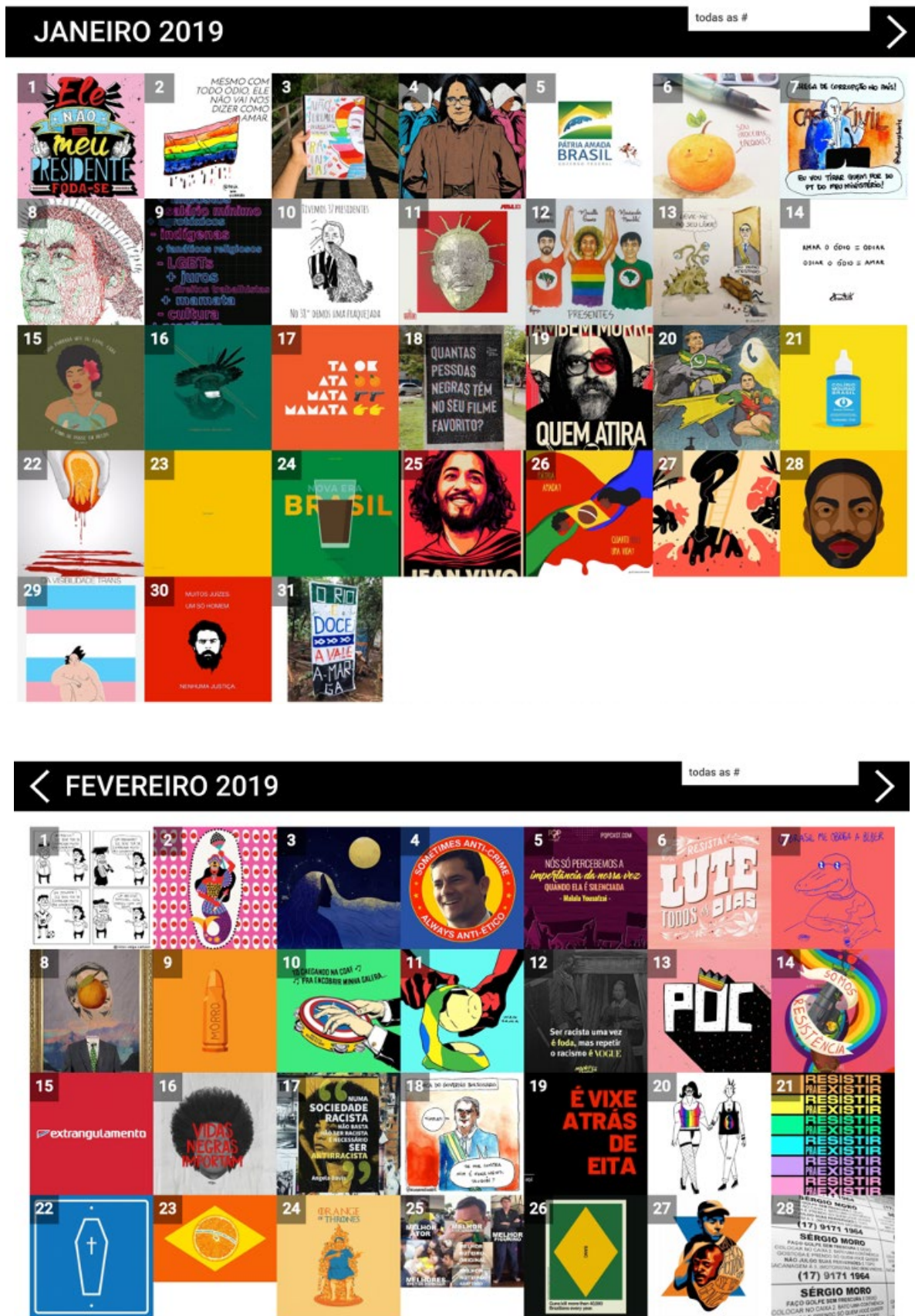
Based on the concepts brought in this thesis, design assumes the role of a mediating tool for the creation, visualization and analysis of aesthetics emerging from social media. The analyzed object is made up of digital posters, material artifacts and pieces of activist communication design circulated on Instagram during the tumultuous four-year sociopolitical moment of the Brazilian government of President Jair Bolsonaro (2018-2022). Historically marked as an antidemocratic and genocidal administration in which human and constitutional rights were violated, these graphic pieces reflect the message of dissenting groups that organized to combat several causes, such as racism, LGBTQIA+ issues, democracy, the rights of indigenous peoples, deforestation, among others. They are images related to street events and the context of urban culture for the production and circulation of narratives on social media.

These materials are conceptualized in the research as image-messages, given their formal and communicational and informational characteristics. Edited and published from thematic captions related to some activism or collective campaign (hashtags), these images resulted in a significant sample of the spectrum of current graphic design production.

The theoretical-methodological perspective of this work is anchored in a graphic experiment, a website, articulated with interdisciplinary theories from the fields of design, communication, media art, philosophy, artificial intelligence and photography. The design set combines information design skills, aesthetic criterias and Artificial Intelligence tools for image classification. The discussion that emerges from the analysis of this Instagram collection of images presents new paradigms to analyze and archive contemporary graphic design, considering that these images represent the graphic memory of visual culture and Brazilian politics.

2. Methodology: How to capture, index, classify, and analyze elusive images

Carrying out a wide data collection to constitute a quantitative and qualitative sample of the images required a mixed methodology. Due to the volume of data, the diversity of techniques and the possibilities of graphic interference by the tools of cell phone applications, it required an analysis strategy that encompassed a mixed classification: the eye of the researcher and that of computer vision. After analyzing the potential of dissenting images and emerging aesthetics in production on Instagram, the most significant thematic hashtags of activism in Brazil were defined based on graphic design: #designativista, #desenhospelademocracia, #mariellepresente, #coleraalegria, #foragarimpoforacovid and #projecemos.



Figures 1 and 2. Screenshots of the graphic experiment website “Dissident Calendar” of January and February 2019. The figures show image-messages chronologically captured and indexed by six hashtags displayed on the website homepage. (calendariodissidente.fau.usp.br)

Six aesthetic paradigms were defined to classify the images according to their respective languages: digital illustrations, manual illustrations, use of verbal language (digital and handwritten typography), vernacular images, appropriated images, factual images and memes (a factual subcategory). From this definition, criteria of similarities and differences were defined, and image clusters were formed for training – a machine learning process. The work of capturing images by theme and the creation of labels with aesthetic biases was a collective project experience that involved the collaboration of data scientists and was carried out in INOVA -USP Lab.

2.1 Image classification: subjectivity in interpretation

In short, it can be stated that machine learning of the research categories takes place through the tagging of a large data set, enough for the reading and repetitions of patterns pre-established by the trainer to be apprehended by the neural network. When the accuracy reaches 80%, the classification success metric evidences the success of the created labeler's classification. This process is described in detail in the thesis. However, it is relevant to be brought to this discussion because it demonstrates the possibility of human manipulation in the training process, resulting in biases of image cluster visualization. In this case, the design of one's own labelers had aesthetic and social political criteria.

From this experience it is clear that the subjectivity involved in machine training and the racist, commercial and biased tendencies of computer vision tools provided by databases and the GAFAM (Google, Amazon, Facebook, Apple, and Microsoft) clouds. The classification of representative images of Brazilian culture composed of graphics, verbal language and figures of indigenous people, black people, tropical forest and vernacular drawings, to name just a few, presents another pictorial vocabulary for the "off-the-shelf" computer vision created by mostly white data scientists from the Global North. Thus, in a way, it was necessary to acculturate the robots during the machine training phases, in a sort of 'tropicalization' of pictorial indexes in the training guide. This observation was woven together with the contributions of Zuboff (2019), Paglen (2019–2020) and Mintz et al. (2019), researchers who have a critical approach about the internet data visualization policy and the big clouds, questioning the Eurocentric bias of commercial image database computer vision and the lack of cultural and behavioral criteria that include ethnic and gender diversity.

Returning to classifiers: due to the mixture of languages and overlapping of photographs, the difficulty in extracting data and using available tools for capturing and archiving images from social media networks follows the platforms rules and the opacity of the information design of social networks such as Facebook and Instagram, whose objective seems to be to suppress the possibility of conflict with their users (Beiguelman, 2014). These applications are places where informational data is controlled, as the platforms define when and what they want to convey and to whom. Instagram, a playful album of images, is the facade of the big business that supports the application's gratuity: the collection of data for advertisers. The restriction on access to image APIs, strictly speaking, aims to protect the user in the name of preserving their data privacy. However, this same tool feeds algorithmic tracking for commercial purposes, benefiting the platform. It is a double operation: side A offers a good user experience in the affective, sensory and cognitive senses, while side B conceals its data policy and what is being tracked, archived, and commercialized by corporations, based on the traces of this experience on the network (Zuboff, 2019; Bruno, 2013).

In this sense, this graphic experiment as a project practice, research and teaching practice evidences its kludgy DNA as it uses infiltration strategies within a closed network to bypass – through the use of free software and without breaking the rules – the algorithmic system of the application. There is a tension between the design strategy, the objectives of the website, with cultural, socio-political, and academic purposes, and the informational capitalist vocation of the social networks (Prata, 2022).

A technophagic device is created - a kind of technological disobedience dispositive, as says Beiguelman (2014), paraphrasing the Cuban Ernesto Oroza, known for his research on "technological disobedience" based on the reality of Cuba, where users need the creation of spontaneous design, with technological kludges, to bypass the scarcity of products and replacement of parts for various utilitarian objects (Oroza, 2012).

Anthropophagy, a term known to Brazilians, coined by Oswald de Andrade in his *Anthropophagic Manifesto* (1928), also applies to the cannibalistic production of networks; a remixed and appropriated language, characterized by sociocultural contexts and the mixture of iconographic references and materialities of the informational context in which it is produced. In these material artifacts, activist graphic pieces, formal influences from the graphic design of the Global North and the mixture of appropriated factual and iconic images from the context of the Global South can be noticed.

Manual and vector illustrations in the same graphic piece, a characteristic of the image-messages classified as Digital Illustration, presented reading errors for AI. Considered a critical image by the interpretation model (Kim et al., 2016), the machine's interpretation error coincides with the analytical subjectivity of the human eye. That is, the doubt in classifying these remixed graphic pieces as "digital illustration", whose aesthetic of addition prevails, has been present since the beginning of the machines' training process, carried out by humans. Therefore, the opinion of computer vision could not be considered a final result in a research on visual language. It points out trends and organizes large samples, but the interpretation of the nuances of this imagery depends on a semantic analysis.

This research finding confirms the ubiquity and limitations of computer vision, expanding horizons regarding what is produced on social networks. The experiment, carried out with open-source softwares, offers an important tool for discussing network aesthetics through other methodologies that encompass contextual and semiotic aspects involved in the creative field.

2.2 Semantic and systemic analysis

Other lines of study were used to understand the semantic aspects of image-messages; how visibility is given and in what context they were created. Designer and researcher Enric Jardí points out some semiotic strategies for identifying different language games in an image: metaphor, metonymy, hyperbole, allegory, connotation, icons, codes, symbols, indexes (Jardí, 2014). These operations, added to other lines of study, such as visual culture (Mirzoeff, 1999; Meneses, 2003) and design culture (Julier, 2006), contributed to the analysis of the images in question.

Julier proposes a systemic diagram, composed of the domains of Circulation, Value and Practice, interrelated. This systemic analysis seemed more suitable for the study of digital design pieces (2016). The study proposes a reinterpretation of this diagram, creating a nomenclature for its intersections in order to analyzing informational graphic artifacts:

- Circulation of the image-message;
- User experience;
- Social contextualization;
- Affective and graphic memory.

From this interdisciplinary perspective, it is observed how the cultural and sociopolitical context, the tradition of using posters as activist support (in Brazil and worldwide), the aesthetics and visual syntax of these graphic pieces and the characteristics of the means of production, penetration, and speed made possible by new digital media impact the production and reception of these image-messages.

The images below exemplify the interdisciplinary analysis of activist graphic pieces based on the research proposal:



Figure 3. Image captured from the hashtags #mariellepresente and #designativista, published on March 14th, 2019. Author: Cris Vector @crisvector.

The figure above was captured from the hashtags #mariellepresente and #designativista and features a portrait of Marielle. It follows the same language as the poster that marked Barack Obama's campaign in the 2008 American elections, designed by illustrator and activist Shepard Fairey. This graphic piece is used as a reference for illustration language, and the composition structure follows the same pattern as several posters illustrated with portraits of great political personalities. The lower area is intended for verbal language. In this case, display letters, condensed and in uppercase, available in the Instagram template, were used. The use of questions in posters is a strategy used since the posters of the 1960s. The phrase addresses the recipient, provokes, and evokes participation. The image went viral and was appropriated in thousands of posts about Marielle. This style of vector illustration in which volume is given by layers of gradients and shadows is a striking style on the network (by the way, used worldwide). Cris Vector, one of the illustrators who stood out on the network for his ability and precision of details, also represents an important trend in network design in which the combination of image and verbal language merges into a single composition.

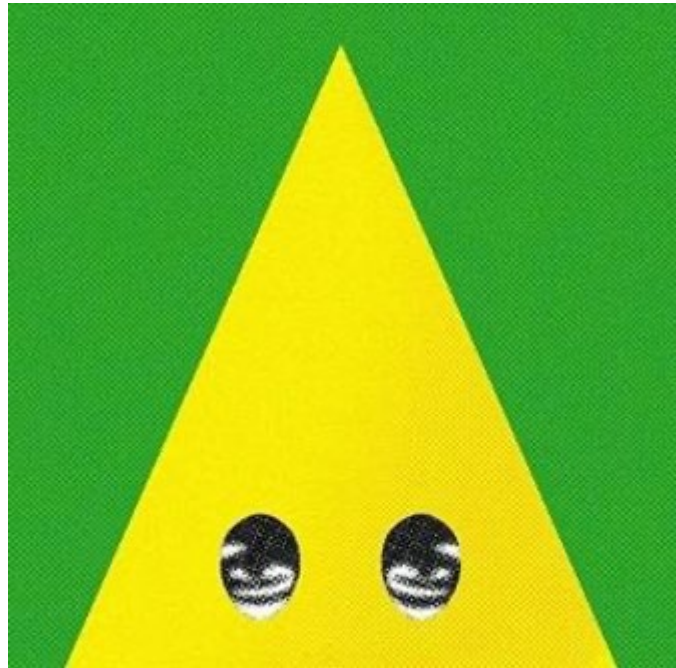


Figure 4. Image captured from the hashtag #elenao, published on October 17th, 2018. Author: Eduardo Foresti @foresti.

In the figure above, the image captured from the hashtag #elenao, published on October 17th, 2018, represents the wave of Bolsonarist far-right extremism. The inverted Brazilian flag serves as a hood, an explicit reference to the conical hoods worn by members of the Ku Klux Klan, a North American organization of white supremacists. The use of collage technique – Bolsonaro's eyes cut out from a black and white printed publication (with a particular graphic reticle from newspaper paper reproduction) – enhances the factual and documentary context of the poster. The displacement of the use of the flag with another function reinforces the strategy of more sophisticated linguistic games, present in other image-messages in which the flag is a sign employed to express other meanings that go beyond the immediate sense. This mode of representation is known as visual rhetoric. The context in which the flag is usually used has been altered to modify its literal meaning from a national symbol. This image is, precisely, a metonymy. The figure (flag) is used to modify the literal meaning of a sign, replacing it with another visual element (hat/hood) with which it becomes related (Jardí, 2014). The appropriation of a national symbol, used upside down, contributes to the visual impact of the image. It is likely that many readers do not understand the metaphor of the conical hood, relating it to the racist and Nazi political position of President Bolsonaro. The relationship between Image and design and the interpretation of visual signs occurs unconsciously. It can be perceived in layers. (Prata, 2022, p. 128–129)

3. The graphic memory of image-messages

Through the line of study of graphic memory, it was possible to recognize the social network collection of dissenting images indexed in this study. According to Priscila Farias and Marcos Braga (2018), the expression "graphic memory" seeks to understand the importance and value of visual artifacts – in particular, ephemeral prints – in creating a sense of local identity. For the authors, it is possible to assume graphic memory as a strategy of approach for a study of a collection of graphic artifacts, in the sphere of material culture and in the collective memory of a people (Ibid, p. 20–23).

The project highlights the importance of inserting the Brazilian dissenting design images in the archeology of ephemeral graphic artifacts. Their function and two-dimensional form bear similarities

to activist posters from other historical periods, reinforcing the relevance of this aesthetic production as part of the graphic memory and contemporary Brazilian visual culture.

However, the inclusion of these digital graphic pieces in the timeline of the history of graphic design is still incipient. Not only because the documentation of these aesthetics is recent and concerns the circulation of these works in a new digital media, but mainly because the history of Brazilian design and that of its neighbors were practically excluded from dominant narratives of design history. According to Victor Margolin (2014), most publications on graphic design present a Eurocentric view and were written by authors from the Global North, such as Meggs and Purvis (2009) and Craig and Barton (1987), with a linear and contextually limited view of international graphic production considering printing publications.

As a counterpoint to this Global North view, American designer and researcher Liz McQuiston (2015) stands out for breaking this paradigm, shedding light on the impact of the activist posters production – including Asian and Latin American countries, and recent production, for online interfaces. The advent of Web 2.0 generated a boom in the production, mediation and circulation of images. The form and language of this new activism were completely altered using mobile devices and image sharing, enabling the circulation of image productions made by amateurs. The engagement and visibility of the Arab Spring movements (2011), Occupy Wall Street in the United States and Europe (2011), and the "Passe Livre" ("Free Fare") movement in Brazil (2013) mark this new era of activist graphic design (McQuiston, 2015).

At this moment, the theme of graphic memory is of particular importance to countries like Brazil and other Latin American nations, which were colonized by Europeans and underwent a long period of military dictatorship between the 1960s and 1980s. There is an effort to rescue and document Brazilian graphic production by various local researchers such as Adelia Borges, Isabella Aragão and Rafael Cardoso, to mention a few. In the field of graphic design and graphic memory, the bibliographic production of Chico Homem de Mello (2012) and Marcos Braga and Priscila Farias (2018) dialogue with this research. *Gráfica da Ação*, a critical text by Homem de Mello in *Os Cartazes desta História*, organized by Vladimir Sachetta (2012), about the production of Brazilian activist posters, aimed at human rights violations in Brazil during the dictatorship and redemocratization period (1960-80). Mello also compiled with designer Elaine Ramos a wide production of national graphic design in "Timeline of Graphic Design in Brazil" (2011). Priscila Farias and Marcos Braga have been dedicated to a broad research of Brazilian graphic artifacts, such as the publication "Ten Essays on Graphic Memory" (2018) organized around articles by postgraduate students from FAU USP. The book presents part of the national historical production of labels for spirits, book and album covers, among other material objects. The book is an example of dialogic teaching and learning strategies applied to the Design field.

In the case of Prata's research (2022), the strategy of publishing the graphic experiment on an online platform open to the public allows visualization of different typologies of activist graphic artifacts and contributes to the dissemination of the history of Brazilian graphic memory of this period. This initiative sheds light on other modes of technical production, circulation, and consumption of graphic pieces – it is aligned with the issues raised by Escobar (2016), for whom design is systemic, requires participation and impact on the local community, and occurs in the pluriverse.

4. The pluriverse of Global South

The research results, viewed in light of Escobar's ideas, broaden the understanding of the analyzed images and propose new paradigms for research and teaching: other ways of seeing, archiving and identifying the graphic memory of Brazilian graphic design, placing it in a less linear and more

rhizomatic timeline in which design has an ontological, decolonial, political and sociocultural perspective in all its manifestations: in drawing, project creation, in design investigation and research, and education.

The images presented here constitute a visual narrative of the political-cultural reality drawn by citizens, artists, designers and social media users. They go beyond the attributes of a material graphic design object as they expand the term "design" – or *diseño*, in Spanish, as Escobar (2016) prefers, as it reinforces the ontological dimension of the term. These images are relevant because they not only expose an aesthetic vocabulary of digital graphic design but also represent new communication design practices in which the process of creating, mediating, and disseminating digital graphic pieces influences and adds new layers of information and value to the image.

4.1 Conflict of new modes of production

The modes of production of the graphic pieces that circulate on social media – made by users in general (non-designers) – are strongly influenced by the "ready to use" tools available in social media apps. This creative common pluriverse system from the Global North of big techs tends to homogenize creations at all costs, turning design into a mere procedure of using pre-established templates and style libraries.

From this point of view, a conflict is identified in procedures regarding graphic design today. How to create a design of local, regional representation and with visual indexes that are characteristic of Brazilian culture using the tools, manipulations and seduction game of the templates and image bank freely available at your fingertips? In *AI Aesthetics*, Lev Manovich (2018) asks about the risk of being faced with design standardization due to the use of AI tools embedded in mobile cameras and apps. Regarding this aspect and the result obtained from the analysis of the aesthetic production of activist images, it is believed that the sociocultural repertoire of the image producer and the legitimacy of his activist cause and message are ingredients that will make the difference in the uniqueness of the graphic piece. It is perceived beyond the formal aspects and the use of default tools.

In these image-messages, the technique and formalism of modernist compositions are combined with creativity, local visual expressions, handwritten gestures, collages of signs appropriated from documentary images and personalities that illustrate a local context and event. Perhaps they can be called "pluriversal i-messages" a typical neologism from the world of metonymic games of digital appropriations. Well, this activist image-message from social media, this metamorphic image (Rancière, 2013), represents the graphic and political memory of Brazil today.

5. Conclusion

The graphic artifacts that circulate on the networks represent the participation and engagement of the producer and receiver of this informational object; they give visibility to many voices and enable important cultural and institutional transformations for a decolonial process in graphic design practices and design teaching.

This study points out how mixed strategies, combining semantic paradigms and IA – computer vision and aesthetic classification for cataloging images – can be applied to analyze contemporary graphic design production, which involves new ways of creation, mediation and circulation. The Brazilian dissenting images reveal a fresh visual language, with a specific vocabulary. Therefore, they represent a significant graphic memory from the social politics and history of the country through an image-message collection.

These narratives represent transitional discourses through a pluriversal design in which the representation of the Global South is identified (local and regional aspects and sociocultural context) intertwined with the dogmas of modernist design, influenced by the Bauhaus School. The simplicity of forms, types and the overall gestalt of this method have impacted graphic design, industrial design, visual arts and architecture concepts for decades – not only in Europe and North America but all over the world.

It is noted that, in many images of this set collection, the influence of the rational use of the grid and the application of verbal language in sans serif fonts – elements of composition characteristic of modernism are present. However, there is an additional layer of local contextual visual elements and mixture of appropriated and remixed languages, typical from visual culture in the digital era.

The methodology presented in this paper aims to contribute to another way of seeing the graphic design artifacts – not only activist design – and could be applied to other multidisciplinary studies. Thus, it includes not only visual and formal aspects but also these four aspects:

- Circulation of the image-message: the technological rules and standard ways of communication in social network apps define the aesthetic of addiction that characterizes these images. The further the images travel in the flux, the more graphic elements they get. The original publication may be uploaded and downloaded in different contexts where new elements can be added or subtracted, modifying the original message. This procedure may cause different interpretations of the original image, its design and purpose;
- User experience (UX): the participation of the Instagram user (the non-designer who creates their own mini poster) brings more spontaneous visual elements that may be better understood within the local social cultural environment;
- Social contextualization: the narratives have polyphonic voices where the dilution of authorship is welcome in the name of the collective.
- Affective and graphic memory: the repertoire of the receptor and its sensorial aspects of seeing reflects in the impact of the dissident graphic design.

It is precisely in this coexistence of global and local cultural influences – beyond visual aspects, and considering new approaches for analyzing big amounts of image production – that it is possible to recognize a new status of communication design. The methodological strategies for researching and teaching design nowadays must concern a broader and interdisciplinary approach, starting from local realities to contribute for the semantic analysis of graphic design artifacts everywhere, concerning the digital era.

The practice of design can also be seen as methodological and as the experimental work process to encourage graphic designers and researchers to organize sources, themes, concepts and processes. The “*Dissident Calendar*” website (calendariodissidente.fau.usp.br) is an example of this procedure and constitutes an open and public archive of ephemeral graphic artifacts, from a wide data collection of Brazilian graphic memory images. It required a curatorial concept of the framework – visualized by thematic hashtags, organized by IA and open source softwares. Therefore, its Information design system organizes contemporary broader Brazilian visual culture. It can be said that the process was designed as a pluriversal construction, a rhizomatic Deleuzian information design system.

From pedagogical aspects, it seems that the timeline of the history of graphic design can no longer be read or taught in a linear fashion. We live in the pluriverse and research and teach design through the practice of design.

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