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Review

Journalistic Images: Contemporary Challenges for Visual Research in Digital Journalism

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Abstract: This article aims to identify contemporary challenges in researching digital journalism images and propose potential outcomes for addressing these challenges. We argue that the analysis of contemporary journalistic photography requires a departure from traditional approaches used for analog images. Instead, it should be viewed within the ever-changing digital ecosystem in which digital journalism circulates and the new forms of creating, sharing, and visualizing its content that arise from platform context and mobile consumption. We have divided these challenges into two categories: the first relates to topics associated with the studied object, and the second pertains to the research process itself. On the one hand, changes in the nature of the photographic medium, its transmission and profusion potentials, shifts in journalistic workflow and labor relations, evolving professional multimedia needs, audience participation, and new forms of consumption are some of the aspects that need to be considered. On the other hand, we also must deal with the ephemeral quality of digital objects and recognize that researching digital objects is inherently intertwined with understanding the digital ecosystem in which these objects exist. Finally, we identify the digital methods-oriented approach as a potential path to addressing these challenges, mainly because of its characteristics of following and adapting to the medium's logic

Keywords: visual journalism; photojournalism; digital journalism; digital methods; convergence; platformization

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1. Introduction

This forward-looking literature review aims to identify contemporary challenges in researching digital journalism images and propose potential outcomes for addressing these challenges, drawing on the lack of original methodological approaches from Journalism researchers and the significant methodological dependency from other areas such as Sociology, History, and Linguistics (Machado and Sant'Ana 2014; Machado and Rhoden 2016) and the need to rethink the approach to photojournalism research based on contemporary characteristics of the medium (Schneider 2015). It derives from a Ph.D. thesis (Vasconcelos 2024) that contributes to updating and expanding methodological efforts used by the Online Journalism Research Group (GJOL) at Universidade Federal da Bahia in Brazil in the almost 30 years of the research group's history.

In his book entitled La furia de las imágenes (Fontcuberta 2016), Catalan photographer Joan Fontcuberta builds on this change in the nature of photographic images and their subsequent incorporation into smartphones and social media to problematize the concept of post-photography. The author characterizes the changes in photography on three fronts: (1) their immateriality and transmissibility; (2) their profusion and availability; and (3) the shift in the intentionality of this type of photography toward a practice increasingly characterized as a communication act.

The first one concerns the fact that the photographic image, now a document counted in bytes, no longer takes up space in the concrete world. From this point on, this image becomes a file that can be sent to other people enhanced, an already recurring act in analog

photography, when we used to show our photos to friends and relatives through photo frames and albums.

This so-called lightness of digitized photographic archives, by facilitating their sharing, leads to the second major change: with the reduction in the cost of photographic production (no longer incurring expenses for film, development, and specific equipment), an increasing number of people become able to document their daily lives in images and, in the next stage, upload these images to the internet, sharing them not only with close acquaintances but often with strangers.

Finally, this ease and profusion of image sharing denote a shift in the intentionality of vernacular photographic production. Previously aimed at personal archiving and memory, it now functions more as communicational text. We send photographs of our location via instant messaging apps, showing where we are; publish photos in story formats designed to disappear after a predetermined time; or place ourselves in front of the camera, simultaneously photographer and photographed, to show that we are in a particular place.

In the specific case of photojournalism, this change in the nature of photographic images also influences how this type of image is produced, published, and observed. As these types of images are not just photographs but also journalism (Baetens and Sánchez-Mesa 2024), they are subject not only to changes occurring in the photographic act but also to changes occurring within journalism itself due to its presence in digital media. These changes include the multimedia format (del Campo Cañizares 2014) and multi-platform presence (Hase et al. 2022), the precariousness of the profession (Hadland et al. 2015; Mortensen and Gade 2018), the need for professionals to be versatile and multi-skilled (Mäenpää 2014), and the crisis of journalistic truth and objectivity (Felici and Ripollés 2017)—a consequence of this new visual regime that brings up a different relation between the object and its photographic representation (Limón 2012), which has also been much discussed.

However, research on this type of image mostly continues to use the same methods created in the context of analog photographs circulating in printed newspapers to analyze contemporary images (Vasconcelos 2024). This type of research tends to minimize the complexity of what images and photographs are currently: digital files produced, edited, and shared by software (Manovich 2013).

These changes also alter the ontological characteristics of images, which now exhibit certain multiplicity: "The digital image is code and is also visible. It is photographic and also digital. This without delving into the details of the multiple versions of images subsumed by the categories of code, information, or algorithm"[1] (Mintz 2019, p. 90).

Therefore, it is symptomatic that we continue to look at these images, which are no longer just images, in the same way we dealt with pictures before their shift to the digital context. Thus, we start from the principle that if we look at these images only as images and not as data made using software and shared and consumed within them based on their characteristics, we will ignore all the complexity that digital objects possess.

In this paper, we will provide a brief description of possible challenges for research analyzing journalistic images in the contemporary context that need to be taken into account for research design in two main groups: the first concerns the contemporary characteristics of the object to be analyzed (journalistic images) and how the mode of production, publication, sharing, and reading of these images is currently configured; the second, in turn, specifically focuses on research investigating the digital ecosystem and what is important to be considered from the context in which these images are embedded. Finally, we bring the perspective of digital methods as a possibility for research in visual journalism.

2. About the Research Object: Characteristics of Contemporary Journalistic Imagery

According to Lev Manovich (2013), the computer—and, consequently, other digital equipment we use to produce and access images—represents media as data. Therefore, it is with this type of content that we deal with when analyzing images in contemporary times. In the case of photography, as we already mentioned, it no longer exists as an object. When

we take a photo, that image is made purely of data, which requires a gadget to read and render it as an image for us to visualize.

However, the software culture does not only influence the media product but also its entire production chain, which becomes exclusively operated digitally through simulations of techniques previously used to create, edit, visualize, and interact with media products. This culture is so intertwined with contemporary photographic practices that we even adopt its language in our relationships with the images we produce today: file, save, transmit, access, open, etc. (da Silva 2020).

Therefore, we no longer need exclusively photographic devices for sound or video capture or reproduction. All media production, editing, and consumption equipment now converge on the computer or, more recently, and in a more compact and widespread manner, on the smartphone (Drulă 2014), i.e., convergence in devices (Monpetit 2016). Techniques once related to media hardware are now translated into different software operating on the same device (Manovich 2013). This resonates strongly with the concept of convergence, a process that brings new contours to various realms of media production and consumption.

In the specific case of journalism, this goes beyond technology and formats and contents; it also encompasses its business and professional logic (Barbosa et al. 2013). Here, we will start from the definition provided by García Avilés, Salaverría, and Masip of the convergence process (2008) and then identify how journalistic images are characterized in this context.

> Journalistic convergence is a multidimensional process facilitated by the widespread implementation of digital telecommunication technologies. It affects the technological, business, professional, and editorial aspects of the media, fostering integration of tools, spaces, work methods, and languages that were previously separate. Journalists now create content that is distributed across multiple platforms, using the specific languages of each platform. (García Avilés et al. 2008, p. 13)

Regarding photojournalism in a convergent context, it is a process occurring simultaneously in the internal dynamics of the journalistic work environment (Singer 2004; Hadland et al. 2015) and in external dynamics that permeate both the production (Quandt and Singer 2008) and consumption modes of this type of content (Pavlik 2004). These aspects are interrelated, as "the production of photojournalism in convergence mode is oriented towards multi-platform circulation" (da Silva 2012, p. 41). To achieve this, those who produce this type of content need to consider the various contexts through which their images will circulate, as well as their formats, since the same photographic device today is capable of capturing video, audio, and other types of media relevant to journalism as a whole.

Thus, there arises a demand for a professional who is as multimedia as the device they carry, changing the profile of those working in photojournalism (da Silva 2012). This is consistent with the financial crisis that many journalistic outlets are currently facing (Mir 2020; Reese 2020). If this was not already the case, then the profession of a photojournalist goes far beyond the mere act of taking photographs: there is a need to record video, audio, photo editing, and so on.

With increasingly lean newsrooms, demands for images of all kinds, and a context of cameras proliferating, with a public able to capture scenes through their smartphones, surveillance cameras throughout entire cities, and satellite images, another consequence for the profession is that photojournalists are no longer the sole producers of journalistic images, bringing new complexity to what can be called photojournalism (Pereira 2020).

Thus, with the disintermediation of the production of journalistic images, with blurred boundaries between amateur and professional news photographers (Allan 2013), we also see a crisis of trust in these images, increasingly subject to easy alterations and manipulations (Gavard 1999) but still anchored in industrial journalism model (Sousa 2004) that no longer holds in contemporary times (Pereira 2020). Therefore, we continue to demand a

level of objectivity that is impossible to achieve since a photograph is always the result of the selections and choices of the person pressing the shutter (Flusser 2000). They are never arbitrary, random, or innocent. However, photojournalism remains stuck in an objectivity that goes beyond what is required of text and is anchored in a type of image that can never be edited or retouched (Munhoz 2016).

These requirements are so deeply embedded in photojournalism that the illusion of documentary authenticity is one of the legitimizing features of the journalistic authority and reliability of these images. Traditional photojournalism tends to disguise the presence of the photographer, erasing marks of their authorship (Schneider 2015). This influences a series of attitudes taken by photojournalists before, during, and after the photographic act to forge this image that appears to be made automatically, without human mediation, such as imprecise focus images made with wide-angle lenses, from angles that need to seem arbitrary (Machado 2015).

3. About Research Itself: Digital Imagery Scrutiny Cannot Ignore the Digital Ecosystem

In Software Takes Command, Lev Manovich (2013) describes the importance of academic research in humanities, media, and culture, turning to the study of software based on the premise that software replaces a whole range of physical and mechanical technologies widely used in the last century, which are now simulated by these programs. Without software, therefore, there is no research object in communication in the contemporary context, nor is there research itself.

This paper, for instance, was entirely written on Google Docs. Not only would this work not exist without software, but it also would not be read, as you are now reading it in a PDF reader application. Similarly, the objects we deal with here (journalistic images) are not produced, published, or viewed without the use of software. Therefore, we must take into consideration this type of intrinsic characteristic of the digital objects we deal with in contemporary research in communication and media; otherwise, "we are in danger of always dealing only with its effects rather than the causes: the output that appears on a computer screen rather than the programs and social cultures that produce these outputs" (Manovich 2013, p. 9).

Manovich identifies this type of software, generally associated with activities related to culture, as cultural software and divides it into two main categories. The first concerns the creation, editing, and organization of media content. The second gathers software for distribution, access, and combination of media content in the digital ecosystem. These categories intersect when we think about software that possesses both characteristics in its interface. Let us consider a platform like Instagram. In the app, we can create our images using the built-in camera interface, edit them with filters, stickers, and text, among others, and then publish them, whether in stories, the feed, or in reel format. Therefore, this type of application can be used for both the creation and sharing of media content. As such, it cannot be studied as one thing or the other but rather as a hybrid of the two.

Therefore, we cannot overlook the context of publication, circulation, and consumption of journalistic images, which ultimately shapes how these images are produced and edited: platformization. According to Van Dijck et al. (2018), we live in a platform society, meaning a context where platforms have "penetrated the heart of societies—affecting institutions, economic transactions, and social and cultural practices—hence forcing governments and states to adjust their legal and democratic structures" (p. 2). The authors define platforms as "a programmable architecture designed to organize interactions between users" (Van Dijck et al. 2018, p. 9). Given that it is a social and cultural practice, the logic of platforms also affects the field of journalism and media (Birch and Bronson 2022; Poell et al. 2019, 2022, 2023; Nielsen and Ganter 2022).

In their seminal book, Van Dijck et al. (2018) dedicated one specific chapter to the platformization of news, describing how major platforms have invested in becoming central actors in producing, distributing, and commodifying news while avoiding journalistic accountability for the content circulating in these environments. At the same time, online

information producers target platforms as their primary means to distribute and monetize their content. Given this context, "the production of news becomes progressively tailored to obey the mechanisms and organizing principles driving the platform ecosystem" (Van Dijck et al. 2018, p. 50).

Speaking specifically of social media platforms, where news circulates most significantly (Newman et al. 2024), the way news circulates brings new characteristics to journalism. Firstly, there is the decentralization of information production and the outsourcing of journalistic curation, i.e., gatewatching (Bruns 2011). It is no longer just journalistic outlets producing information, as the tools are given to any user of these platforms who wishes to share an event, bringing new information producers into the media ecosystem beyond those endorsed by journalistic authority. Additionally, news content published on news websites is constantly shared by other users, so the selection of what circulates more or less depends increasingly less on journalists.

In other words, journalism finds itself increasingly without control over the curation, monetization, and distribution of its content (Simon 2022). Performing gatekeeping roles (Scheffauer et al. 2024), social media algorithms distribute content based on various parameters to individualize the user experience. The content, thus, is not the same for different users, as they now have personalized news consumption through mobile devices (Canavilhas 2021). In the specific case of journalism, this directly affects consumption, which becomes incidental (Boczkowski et al. 2018). Social media is not primarily accessed for news consumption, but it ends up happening as users check their smartphones (Molyneux 2017).

Journalistic content, therefore, competes for the attention of social media users against all other types of content circulating on these platforms, such as updates from friends and family, memes, and advertisements, among others. Additionally, this consumption only fully occurs beyond the feed when the headline of the news and its corresponding image are attention-grabbing enough for the user to click on the title and momentarily leave the platform. Thus, photojournalism ceases to be just a way to portray the news in image form and becomes a business card for the news itself, also serving the function of attracting the audience, as researchers state that images influence users' engagement toward news consumption (Keib et al. 2017).

4. Digital Methods as a Possible Path for Analyzing Journalistic Images

One of the research streams that has been proving fruitful for studying the digital ecosystem is the perspective of digital methods, which precisely follows the logic of studying the medium to conduct research in digital media and humanities. Research is conducted to incorporate these characteristics both in the creation of samples and in their analysis and publication of results, aligning quantitative and qualitative perspectives.

The proposition to analyze digital media following their logic and characteristics in order to understand phenomena that are intrinsically interconnected with their presence and circulation in these media directly refers to the concept of digital methods, initially proposed by Richard Rogers (2013), understood as "a qualitative-quantitative research practice that reimagines the nature, mechanisms, and native data of web platforms and search engines to study society" (Omena 2019, p. 6). In other words, the boundaries between quantitative and qualitative research blur in the face of the possibility of complementing one another, merging them into the same research practices.

This type of methodological approach differs from others due to its characteristic of studying digital objects through methods that are also native to the digital context (Mintz 2019). Thus, it does not involve the migration of social science techniques to the digital ecosystem but the appropriation of digital tools to study societal changes and contemporary culture (Rogers 2019).

Because of the constant changes in the digital ecosystem, such as the impermanence of services and the instability of data flows (Rogers 2019), this type of approach requires continuous changes and adaptations since dealing with the digital also means dealing with the ephemeral (Omena 2019). In other words, "digital methods are not single-click

operations in the immaculate conception of 'finished' work with stunning graphics, but rather often manual and deliberate proceedings, with the occasional do-over" (Rogers 2019, p. 22).

The case of photography and images, with their incorporation into instant messaging apps and also into the stories format, increasingly moves away from the classic function of photography as a memory aid to incorporate ephemeral intentionality: a photograph made to disappear (Vasconcelos 2018). Moreover, even when published in more permanent formats such as news feeds, our access to these images is not permanent, as users can delete, archive, and modify these posts at any time, and the URL of these images may also change constantly.

Therefore, we believe that these characteristics make this approach a fruitful path for analyzing journalistic images. Journalistic images in the contemporary context are accompanied by a handful of metadata that can enrich the field. We can use timestamps to analyze daily routines and publication patterns (Figure 1), metadata about equipment to build the analyzed images to study authorship, reverse search to understand image circulation, computer vision APIs to classify groups of images (Omena et al. 2021) (Figure 2), number of likes and comments (Colombo et al. 2023) to understand audiences' responses to a coverage (Figure 3), image-grids to identify color and plastic patterns (Pearce et al. 2020) through a news coverage (Figure 4), and even build a method that can align textual analysis to visual analysis, always making sure to consider the specificities of these digital objects and how they influence how these images are constructed and consumed.



Figure 1. Image timeline built with photographs published over six months (from May to October 2022) about the 2022 Brazilian presidential elections on Brazilian news website Folha de S. Paulo. This timeline was constructed to identify the vehicle's publication patterns. Source: Vasconcelos 2024.

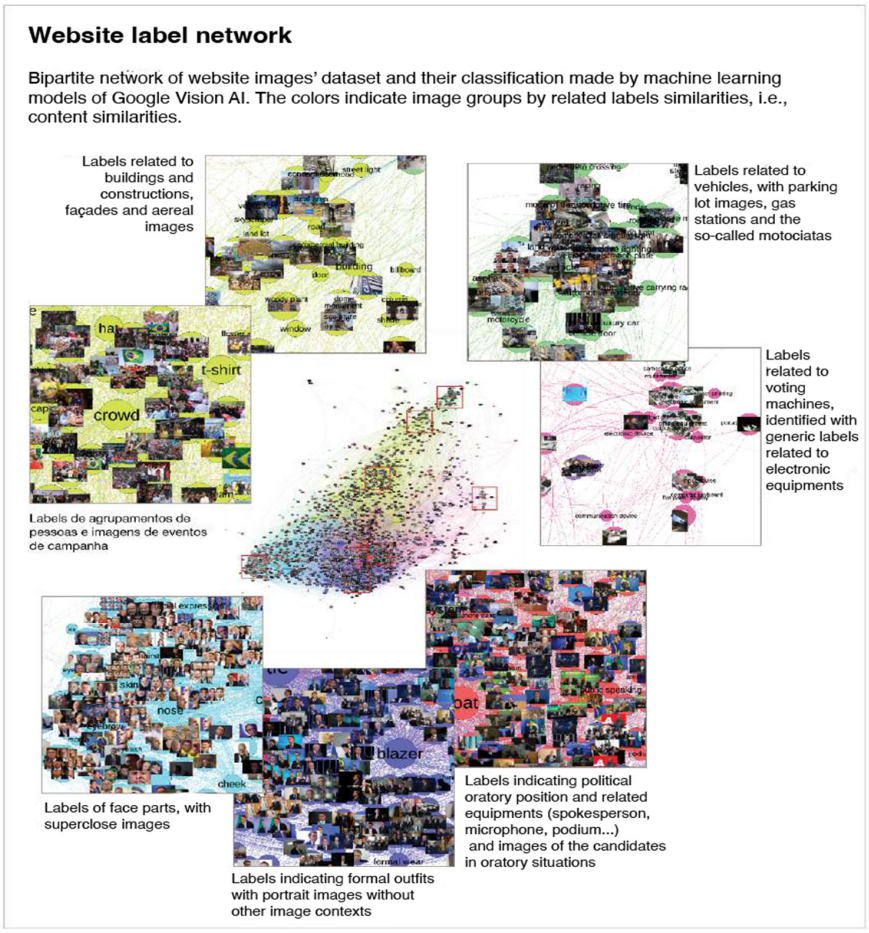


Figure 2. Network containing Folha de S. Paulo's images about the 2022 Brazilian presidential elections and their classification made by the machine learning models of Google Vision AI. This network was used to identify content patterns of the vehicle's coverage. Source: Vasconcelos 2024.

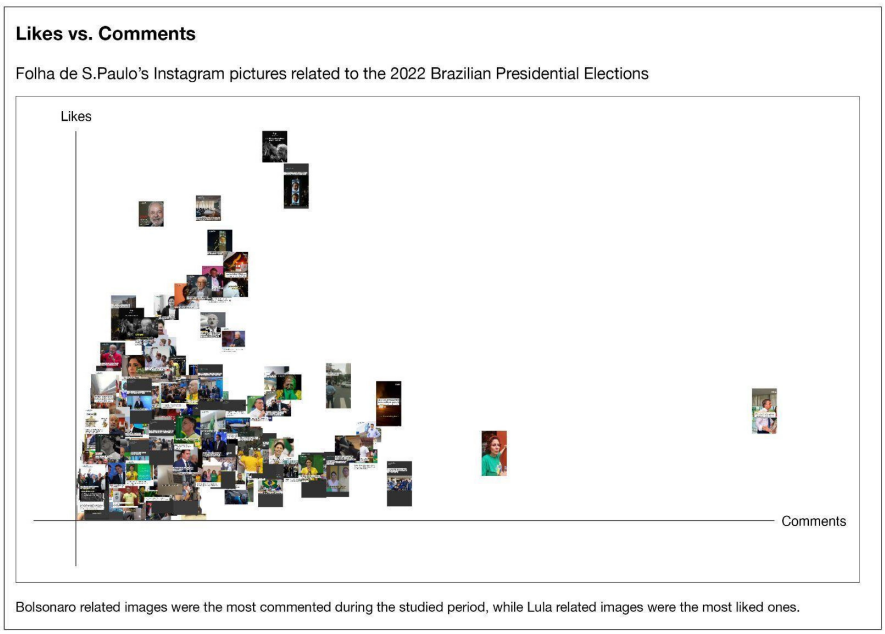


Figure 3. Cartesian graph containing the relation between the number of likes and comments from the dataset containing Instagram images published on Folha de S. Paulo's profile portraying the 2022 Brazilian Presidential Elections. Source: Built by the authors with the software Image J.

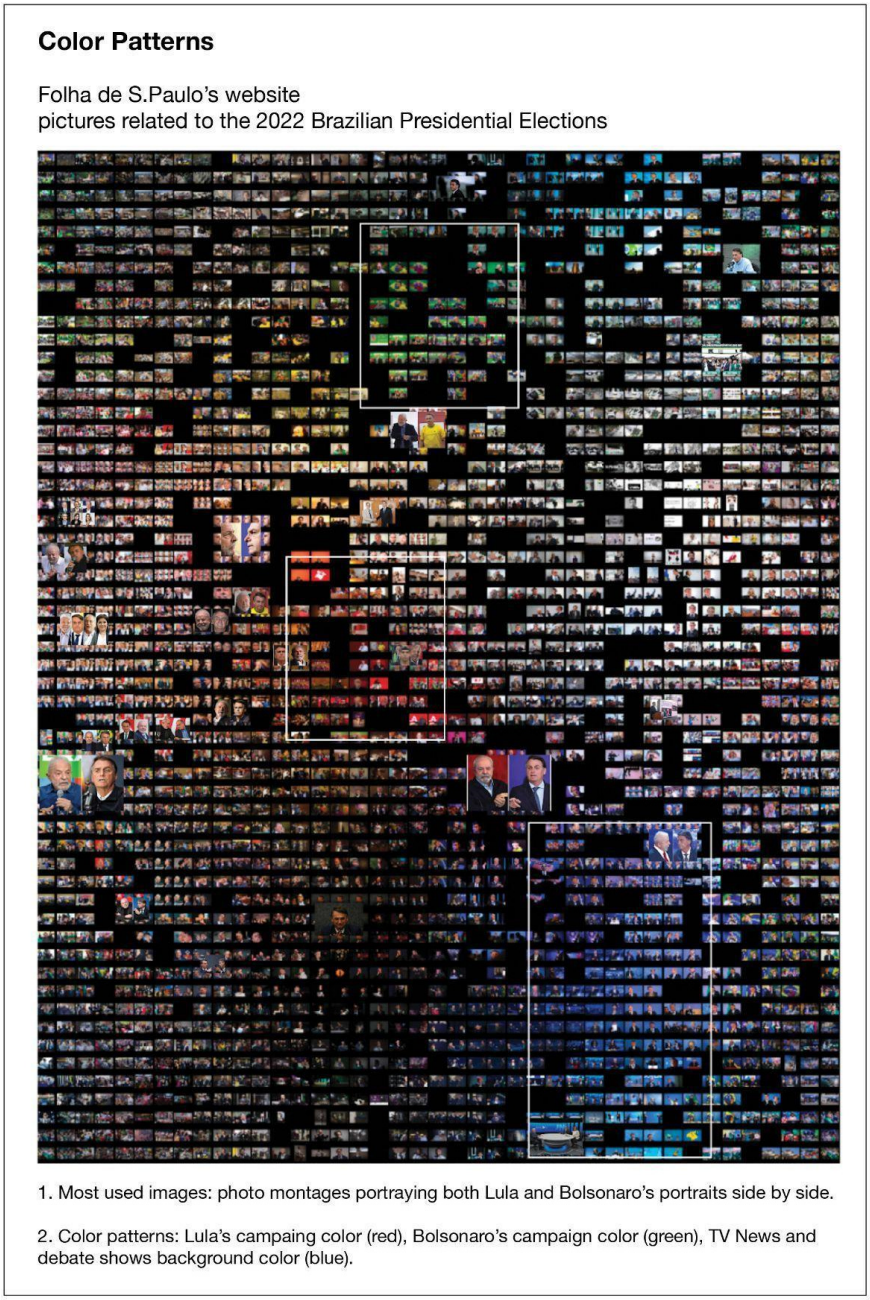


Figure 4. Image grid organized by color portraying both the most used images in a coverage as well as its color patterns. Source: Built by the authors with the software Image Sorter. Source: (Vasconcelos 2024).

5. Conclusions

Based on the previous topics, some considerations need to be taken when analyzing journalistic images in the contemporary context so as not to fall into anachronistic reductions when dealing with this type of empirical object. First of all, in the context of convergence and platforms, what can still be called photojournalism? Does this concept still make sense?

Obviously, print journalism did not only publish journalistic photographs, but back then, it was clear when it was a cartoon, an advertisement, or an image sent by someone's press office. Today, these limits are getting blurry. For example, a screenshot from social media, despite not being photojournalism, can be a fundamental part of the imagery of a news report.

In this context of blurred boundaries between what is and is not considered photojournalism, where regardless of how the image was constructed, it results in a file similar to others, it is a richer path for the research about journalistic images, rather than trying to determine these limits, to englobe the different kinds of images that compose the journalistic ecosystem. We need to be aware that we are no longer in an exclusive photography production model of journalism but instead in a more hybrid one, where photographs, videos, and other types of images co-exist in the same ecosystem.

Therefore, instead of trying to draw the line between what is and what is not photojournalism, it is more productive to view these images as part of a larger and broader context of visual journalism—being photojournalism one of its sub-sections—following contemporary visual culture. The term visual journalism, beyond grouping all kinds of different informative images, also considers these images as expressions elaborated by individuals with specific intentions using specific tools and no longer proof of something, directly addressing the crisis of trust in photojournalism. Either way, the journalistic function of this work remains: representing and acquiring images linked to news.

Beyond that, it is necessary to be aware that when examining any empirical object in the contexts of convergence and platformization, they will inevitably influence the research. Data collection on social media platforms, for example, will have to deal directly with the data made available by the platform to the consuming public without direct access to their databases. This influence reverberates in the research in one way or another. Ignoring it can lead to misconceptions about the researched object.

Research on images in the contemporary context must be conducted with attention to the inherent ephemerality of this type of object. It is essential to consider strategies for accessing it, such as conducting frequent and regular collections with specific searches instead of just one or identifying the key actors that fit into our research universe and monitoring them. In other words, it is important to find strategies to avoid data loss.

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Note

[1] Translated from Portuguese by the authors.

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