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METHODS IN VISUAL POLITICS AND PROTEST:
MIXED METHODS, DATA CURATION & ANTI-PUBLICS

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Suay Melisa Özkula, Tom Divon, Hadas Schlussel & Danka Ninković Slavnić

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CONTACT US

E-MAIL
editor@jdsr.se

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Special issue on methods in visual politics and protest

Mixed methods, data curation & anti-publics

Suay Melisa Özkula[1], Tom Divon[2], Hadas Schlussel[2] and Danka Ninković Slavnić[3]

[1] University of Salzburg, Austria.
[2] Hebrew University of Jerusalem, Israel.
[3] University of Belgrade, Serbia.

✉ suaymelisa.oezkula@plus.ac.at

Abstract

This special issue draws together five articles in the arena of methods in visual politics and protest. It addresses three core methodological challenges across the research process (data access, collection, analysis, visualisation): the proliferation of visual social media, the emergence of novel visual practices, and the increasing application of digital methods. Their key contributions lie in the development of mixed visual methods approaches, new techniques for constructing and curating visual datasets, and methodological explorations of visual anti-publics.

Keywords: visual methods; protest; politics; digital methods; social media images

1. Visual Methods

'Visual methods' or 'visual research methods' refer to a range of methodological approaches and techniques for the collection and analysis of visual data, or research methods using visual materials (see Rose 2014). Visual methods pre-date social media research, for example, through the use of photo-elicitation, video/film, photography, drawing, collage, and other art forms in participant research such as ethnography (see, e.g., Gauntlett and Holzwarth 2006; Buckingham 2009; Margolis and Pauwels 2011; Rose 2014). Even so, new methodological challenges have arisen following the proliferation of 'visual social media', platforms driven by visual information and communication such as Instagram, TikTok, YouTube, and Douyin (Leaver et al. 2020; Rogers 2021), the ubiquity and networkedness of smartphone photography since the 2010s (Hand 2012; Van House 2011), and the growing use and circulation of digital visual artefacts or digital images across different digital platforms (Rogers 2021).

Research designs consequently need to be adapted in light of new formats, platform logics, and the specific practices that are linked to the evolving infrastructural and technical properties. Challenges arise across the different phases of the research process: data access, data collection, data analysis/interpretation, research ethics, and data visualisation. In data collection, challenges lie in the discoverability of visual contents where they are often linked to textual information, for example through

the use of keyword- or hashtag-based queries (where software is used) or specific social media accounts, groups, or communities. In data analysis, challenges lie, above all, in the often implicit nature of visual contents as they may be interpreted differently across varying audiences, for example based on cultural interpretations of specific symbols or the polysemic nature of memes (Boxman-Shabtai and Shifman, 2014), i.e. a message may be interpreted differently based on the specific political or ideological context in which they have been shared.

In response to these challenges, the Visual Cultures section of the European Communication Research and Education Association (ECREA) organised a pre-conference on "Visual Politics and Protest - Current Methodological Challenges" online in October 2022. This special issue follows the themes presented at the pre-conference and draws together a range of papers advancing research methods in visual politics and protest in two parts. This volume constitutes the first of these. In what follows, we outline the rationale of the special issue focus, lay out a range of challenges in contemporary visual research, showcase how the selected articles tackle these issues, and introduce the articles included in this first part.

2. Visual in politics and protest research

Visuals have long been prominent in political action based on their multiple functions: they may establish an argument, set an agenda, appeal to the audience's emotions or cultural values, and construct (or destroy) a political figure's reputation (Schill 2012). Through their wider distribution, they can also create a sense of collective political identity, for example through connective witnessing (Mortensen 2015) and an embodied collectivity (Pantti 2013), thereby amplifying political messages or protest events (Papacharissi 2016; Valaskivi and Sumiala 2023). While politicians may invest effort in harnessing visual forms of communication to affect the way the public perceives them, whether by creating a powerful, authoritative image (Lalancette and Raynauld 2019; McFarlane 2016) or a channel for personalised connection with their supporters (Farkas and Bene 2021), private individuals may also employ visuals for creating awareness and grouping people around a specific cause (Rovisco and Veneti 2017).

While visual forms of communication have become firmly embedded in global media ecologies, they have shown particular relevance across the spectrum of political action - whether this relates to political campaigns and elections, social movement action repertoires, or the wider practices subsumed under the umbrella of activism (e.g. see Karatzogianni 2015; Özkula 2021). For the purpose of this special issue, we consequently define scholarship on visual politics and protest as the wide remit of research that considers the use of visual formats in politically motivated digital communication. Given this issue's focus on digital communication, this includes, for instance, photographs, cartoons, memes, short or long-form videos, GIFs, and emojis shared on social media platforms. Although visual politics and protest have existed long before the advent of the internet (indeed, a considerable amount of social movements research has been dedicated to protest photography, posters, and placards), this issue foregrounds current visual political practices that are embedded in digital networks.

Since these practices are generated by both institutional and private media users, this special issue draws together methodological perspectives across the wide spectrum of activist and political activities. This includes the use of visuals by established institutional political actors, organisational entities, and social movements, as well as networked protest activities - sometimes drawn together under the syntagm of 'digital activism'. The term has variably been described as digitally facilitated dissent, resistance, and rebellion (Hands 2010), or, in more nuanced terms, by Karatzogianni (2015, p. 1), as:

> "Political participation, activities and protests organized in digital networks beyond representational politics. It refers to political conduct aiming for reform or revolution by non-state actors and new socio-political formations such as social movements, protest organizations, and individuals and groups from civil society, that is by social actors outside government and corporate influence."

10.33621/jdsr.v6i1.254

While definitions of digital activism and protest culture conventionally exclude governmental actors, this particular issue considers the wider repertoire of political actions (whether bottom-down or bottom-up) as the departure point.

Extant research has shown various visual manifestations of these practices for embedding, expressing, and spreading political messages. This has, for example, included the circulation of protest photography and campaign posters on social media platforms, the use of image filters and frames for articulating political opinion or digital solidarity, 'protest avatars' - political social media profile pictures for collective identification (Gerbaudo 2015), 'hashflags' - temporary visuals attached to hashtags that endorse specific (often political) causes, movements, and interests (Highfield and Miltner 2023), and various forms of video-based activism (e.g., Askanius 2012; 2013; 2016; 2019; Uldam and Askanius 2013). A range of scholars have also drawn attention to specific visual formats or platform features that have led to distinct video-based practices, vernaculars, or phenomena. Such practices have been conceptualised as meme-based or memetic activism - a form of visual activism characterised by the transformative nature of viral social media images (Pilipets and Winter 2017), 'playful activism' - a mode of political engagement that blends audiovisual elements with competitive challenges on social media platforms (Cervi and Divon 2023), and 'slideshow activism' - a social media practice drawing on image sequences in PowerPoint-style, also known as a 'carousel' (Dumitrica and Hockin-Boyers 2022; Schreiber 2023).

This special issue aggregates a range of papers that explore these visual political practices with a specific focus on methodological concerns toward a better understanding of visual politics and protest.

3. Methodological Challenges

While visual methods constitute a longstanding tradition in social research methods, digital social research has opened up new challenges and opportunities in this field, above all in response to three key developments: **1)** the proliferation of visual social media; **2)** newly emerging visual practices; and **3)** the growing repertoires and application of digital methods.

Platforms. Although internet cultures have drawn on visual formats since their beginning, the proliferation of visual social media and the related photography practices have arguably led to a 'visual turn' in global media ecologies. Visual social media platforms have developed logics that foreground the visual in communication as they focus on the content production, consumption, and (re)circulation of, for example, long- or short-form videos, memes, and cartoons. In part, these developments have emerged from processes of platformisation, a process described by Anne Helmond (2015) as "the rise of the platform as the dominant infrastructural and economic model of the social web", a consequence of the growing popularity of social media platforms as well as the platform affordances these have given rise to. Platform affordances, "(...) the perceived actual or imagined properties of social media, emerging through the relation of technological, social, and contextual, that enable and constrain specific uses of the platforms" (Ronzhyn et al. 2023, p. 14), affect user practices on a given platform, including if and how visuals are shared and to what extent they are central in the communication of political ideas.

Practices. Changing platform logics have at times led to the establishment of new visual practices. This has already been the case prior to visual social media, as exemplified by new forms of visual-textual communication that have emerged through the introduction of emojis, GIFs, stickers, cartoons, and memes. Even so, the growing popularity of visual platforms has created a breadth of new practices that build on the new capabilities of these spaces. This includes algorithmic suggestion mechanisms on the basis of popular visualities and the related audio-/soundscapes (e.g. on TikTok), as well as the replication and re-interpretation of these visual contents through processes of remixing and memefication. Popular visual content is often recreated or re-imagined, with new interpretations sometimes becoming more popular than the originals (e.g., social media "challenges"). In relation to protest and politics, new practices have, for instance, included the visual communication of political ideas through specific

10.33621/jdsr.v6i1.254

aesthetics, visual artefacts, and formats (e.g., augmented reality, artificial intelligence, filters, overlays, slides, emojis), forms of documentation (e.g., witnessing, commenting, stitching, or dueting on TikTok), and various visual styles and narratives (e.g., those specifically adapted for various types of video activism), practices for which methodological approaches need to be adapted.

Research methods. To an extent, scholarship has already addressed the challenges arising from these developments. A range of new platform-sensitive visual methods have developed over the years, of which some are platform-tailored, such as "Instagrammatics" (Highfield and Leaver 2016) and others are platform-comparative, such as "visual cross-platform analysis" (Pearce et al. 2020). These and other approaches have sought to explore new digital-visual phenomena, contextualise them within and/or across individual platform ecologies and cultures, and provide new means of collecting or analysing digital data (see Highfield and Leaver 2016; Marres 2020; Pearce et al. 2020; Rogers 2017; 2021). In recent years, many of these questions and solutions have focused on 'digital methods', methods and data native to digital environments and drawing on digital objects towards understanding web-based sociocultural phenomena (Rogers 2019). On the one hand, these methodological approaches have provided new ways of sampling, collecting, analysing, and visualising visual data, for example, through new software packages made available to researchers. On the other hand, these methods may not always provide contextualised and rich accounts that consider wider media practices or medium-specific influences (e.g., see Venturini et al. 2018).

The articles to this special issue contribute to these debates through new methodological techniques and considerations in a field in which methodological approaches such as single-platform Twitter/X research have been prevalent (see Özkula et al. 2023). The contributions in this volume explore a range of visual formats and practices in digital politics and protest, including image or video posts, memes, short videos, and bots across different platforms (Instagram, TikTok, and Twitter) and country contexts (Germany, Italy, Brazil, Portugal, Ukraine, and Russia). In doing so, they draw attention to the ways in which visual practices are embedded in cultural environments based on the platform and national context they take place in. They draw attention to visual logics within their chosen environments and illustrate how methodological approaches and techniques can be adapted to capture these dynamics. In accumulation, these works provide contributions to the field in three thematic areas: mixed visual methods, dataset-building techniques, and explorations of visual anti-publics.

4. Mixed Visual Methods

The first thematic field of this issue lies in its calls for and proposed techniques for 'mixed visual methods'. Methodological approaches are strongly connected with the theoretical traditions with which they share common roots and ontological premises. While distinctions between qualitative and quantitative research traditions persist, there is a longstanding push for methodological pragmatism. This approach advocates for integrating and blending methods from diverse, and sometimes contrasting, traditions to facilitate more contextualised research of phenomena (Morgan 2007). In part, this trend also follows new epistemological developments in digital social research as digital methods add to the blurring of boundaries between data collection, analysis, and visualisation, as well as between macro- and micro views, induction and deduction (see, e.g., Venturini and Latour 2009), perhaps best illustrated in the notion of a 'quanti-quali approach' (see, e.g., Venturini and Latour 2009; Rogers 2019). The papers presented in this issue contribute to this discussion by providing examples and arguments for crossing methodological boundaries and using complementary methods to circumvent common obstacles and challenges in visual research.

For example, **Caldeira** illustrates how digital methods can be incorporated into feminist media studies, a research area historically favouring qualitative and interpretive approaches. She argues that mixing digital methods and interpretive feminist methods produces research that provides rich contextualised meaning. Along similar lines, **Omena et al.** use "quali-quanti visual methods", an approach tailored to

the specificity of the chosen platforms, their subcultures of use, and forms of appropriating digital-visual objects in an exploration of social media bots. In doing so, they generate a cross-platform context-sensitive analysis. Rich mixed methods approaches are also employed by **Hohner et al.**, who use computational methods to combine computer vision techniques for classifying images (video frames) with manual (i.e. interpretive) annotations for assigning labels to broader categories. This contextualised approach allows them to categorise multimodal TikTok content produced by far-right groups through a triangulated effort. Mixed-method triangulation is also used by **Giorgi and Rama** who combine manual content analysis and automated visual analysis for clustering images by pixel similarity, a methodological choice that enabled them to make sense of memes' narrative flows and map recurring templates and their evolution over time. In doing so, these papers illustrate benefits gained from "mixed visual methods": contextualisation, triangulation, closer and multi-faceted readings of visual data, as well as a more detailed engagement with diffused and polysemic visuals.

5. Dataset-building through soundscapes, social cues, and macros

The second thematic field of this issue is the introduction of new methodological techniques for sampling, building, and curating visual datasets that move beyond the prevalent practice of collecting visual data through text inputs (e.g., keyword or hashtag queries). First, through soundscapes. Using the example of Ukraine-Russia war propaganda on TikTok, **Geboers and Pilipets** employ TikTok's sound infrastructure for detecting memetic patterns. This approach recognises that sound serves as a primary searchable template and network feature on the platform. This method allows them to navigate TikTok's soundscape, focusing on what they term "memetic masterplots", plots woven from a mix of visual and textual components, including video stickers, music, and physical gestures. Second, through social cues. **Omena et al.** develop a query design and dataset curation method that relies on bots' social cues, visual stereotypes, and following networks. As such, their starting point is no longer the output of bot-scoring detectors, but the socio-technical knowledge of factors relevant to bot networks. Third and finally, through ephemeral meme macros. In their visual analysis of the 2019 Italian government crisis, **Giorgi and Rama** analyse meme macros (i.e. text superimposed on images; here on memes), through automated and interpretive content analysis. They analyse what they subsequently call "contingent macros", short-lived/ephemeral memetic layouts that are not able to establish themselves in the visual vernaculars and eventually become obsolete. As such, they focus on the ephemerality and polysemy of memetic contents. In aggregation, the methodological techniques presented in these papers address the challenges of collecting and curating visual data in dynamic, multimodal and transient visual communication on social media platforms.

6. Exploring visual anti-publics

The third thematic area of this issue is the analytical focus on cases of 'visual anti-publics'. "Anti-public spheres" refer to online spaces of socio-political interaction where "discourse routinely and radically flouts the ethical and rational norms of democratic discourse" (Davis 2021, p. 143). This may include fora and practices with white supremacist, anti-climate science, homophobic, racist, misogynistic, and conspiracy theory discourses (Davis 2021). While some of these spaces have entered mainstream public spheres, they are at times (due to their contentious contents) also hidden in subaltern spaces, restricted to certain social groups, or camouflaged towards avoiding content moderation of radical or emblematic content such as propaganda and conspiracy theories. Anti-publics are more often "de-platformed" from mainstream platforms and move towards alternative and less-moderated spaces. In light of these movements, tactics, and rhetorics, anti-publics are methodologically particularly challenging for identifying, sampling, and reading visual contents.

10.33621/jdsr.v6i1.254

This special issue presents a range of case studies that provide insights into these "visual anti-publics": Geboers and Pilipets focus on Russian propaganda on TikTok, Hohner et al. on German far-right videos on TikTok, and Omena et al. on "bolsobots", pro- and anti-Bolsonaro bots in the Brazilian context. These cases illustrate the specific ways in which visual artefacts are employed to recruit and keep users' attention. For example, **Geboers and Pilipets** illustrate how the use of sound for researching online propaganda provides a deeper understanding of the use of affect and attention-grabbing in memetic masterplots. Along similar lines, **Hohner et al.** attribute significance to the use of intimacy and familiarity in far-right vlogs. They identify 'talking heads' in vlog-style videos as the primary visual logic of the most popular far-right group in their dataset. Finally, **Omena et al.** explore bolsobots on the basis that they are identifiable based on specific social cues that allow them to separate bots from their wider socio-technical environment. While these projects chose different entry points for identifying and making sense of these spaces, they all developed tailored approaches for gaining insights into anti-democratic visual practices.

In aggregation, the papers presented here outline new methodological protocols, based on changing media landscapes that attribute greater significance to visuals in digital communications, as well as the practices that have emerged from this, and the platforms that build on these principles. In particular, they highlight contributions afforded by mixed-methods such as quali-quanti approaches, and combinations of software-based data with on-the-ground engagement and interpretive readings. In accumulation, they also address and discuss the complexities and challenges of multi- and cross-platform study, and advocate the deployment of platform-tailored methodologies.

7. Featured in this special issue

In what follows we briefly outline the individual papers included in this first part of the special issue.

Hohner et al. contend that TikTok serves as a mobilisation platform for German far-right factions. Their study introduces a unique methodological approach, integrating manual annotation with image frame classification and machine-learning-driven content analysis, to examine the tactics of these groups. They point out that the popularity and engagement levels vary among different far-right factions on TikTok, with nationalist and conspiracy-themed content drawing significant attention. Their study underscores the dangers posed by the proliferation of extremist ideologies on social media platforms and advocates for a systematic monitoring of far-right content on TikTok.

Giorgi & Rama present the idea that the intricacies of Internet memes transcend the conventional concept of an "image macro". An image macro features a photo or image topped with bold, white text, commonly with a black outline and adhering to specific templates. They introduce the term "Contingent Macro" to situate memes within specific contexts and encapsulate the transient/ephemeral nature of memes as tools for discourse. Their work stresses the importance of contextually nuanced meme definitions and offers a methodological framework for examining meme production related to specific events. They illustrate how memes significantly shaped narratives during the 2019 Italian government crisis, using metaphors to depict power dynamics and political alliances. Their argument challenges traditional meme research methods, advocating for more adaptable definitions and methodologies to thoroughly understand the complex nature of meme content.

Omena et al. argue that to effectively understand and identify bots such as "bolsobots" in the Brazilian context, a holistic approach that merges qualitative and quantitative techniques is needed. They critically examine current bot detection methods and advocate for a novel conceptual and analytical framework in bot research. This framework underscores the importance of acknowledging the dynamic characteristics of bots and the intricacies of automated political conduct. They emphasise the role of image repetition and the connection between bots' profile images and related web entities. This is crucial for understanding bot operations within larger networks and their interaction with political identity cultures online.

10.33621/jdsr.v6i1.254

Caldeira posits that blending digital methods into feminist social media research (using the case of Instagram) offers both opportunities and challenges. She does so through a mixed-methods visual analysis of four feminist hashtags within the Portuguese context. She contends that digital methodologies can yield profound insights into feminist activities on social media, but also bring up ethical and methodological considerations. Caldeira calls for a thoughtful and engaged approach towards digital tools and techniques, and highlights the importance of employing feminist ethics of care in digital social research. She stresses the necessity for methodological innovation in feminist media studies and underscores the critical need for scrutinising digital tools and methodologies in future academic work.

Geboers & Pilipets explore pro-Russian war propaganda on TikTok, focusing on music, stickers, and comments to understand their affective impact and the connections they forge between different expressive forms. They analyse TikTok's 'soundscape' and conduct word pair analyses of comments to examine the resonance and dissonance in video performances and commentaries. Their study employs montage techniques to dissect the sequential narrative and spatial organisation in videos, particularly with the Katyusha remix, revealing memetic linkages and theatrical effects. They map the frequency of word pairs in comments, visualised through heat map-like colour intensities, and consider the role of emojis in fostering collective expressions of belonging.

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Geboers, M., & Pilipets, E. (2024) Networked Masterplots: Music, Pro-Russian Sentiment, and Participatory Propaganda on TikTok. *Journal of Digital Social Research*.

Giorgi, G., & Rama, I. (2024) The "Contingent Macro": The ephemerality of memes as discursive devices. *Journal of Digital Social Research.*

Hohner, J., Kakavand, A.E., & Rothut, S. (2024) Analyzing Radical Visuals at Scale: How Far-Right Groups Mobilize on TikTok. *Journal of Digital Social Research*.

Omena, J. J., Lobo, T., Tucci, T., Bitencourt, E., de Keulenaar, E., Kerche, F., Paschoal, J., Liedtke, M., Li, M., Paschoal, M. L., Lavrov, I. (2024) Quali-quantitative visual methods and political bots: A cross-platform study of pro- & anti-bolsobots. *Journal of Digital Social Research*

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Analyzing radical visuals at scale

How far-right groups mobilize on TikTok

Julian Hohner[1], Azade Esther Kakavand[2] and Sophia Rothut[1]

[1] Ludwig Maximilian University of Munich, Germany.
[2] University of Vienna, Austria.

✉ julian.hohner@lmu.de

Abstract

Research examining radical visual communication and its manifestation on the trending platform TikTok is limited. This paper presents a novel methodological framework for studying mobilization strategies of far-right groups on TikTok, employing a mixed-method approach that combines manual annotation, unsupervised image classification, and named-entity recognition to analyze the dynamics of radical visuals at scale. Differentiating between internal and external mobilization, we use popularity and engagement cues to investigate far-right mobilization efforts on TikTok within and outside their community. Our findings shed light on the effectiveness of unsupervised image classification when utilized within a broader mixed-method framework, as each observed far-right group employs unique platform characteristics. While Conspiracists flourish in terms of overall popularity and internal mobilization, nationalist and protest content succeeds by using a variety of persuasive visual content to attract and engage external audiences. The study contributes to existing literature by bridging the gap between visual political communication at scale and radicalization research. By offering insights into mobilization strategies of far-right groups, our study provides a foundation for policymakers, researchers, and online platforms to develop proactive measures to address the risks associated with the dissemination of extremist ideologies on social media.

Keywords: TikTok; Mobilization; Image Classification; Mixed Methods; Far Right; Radicalization; Protest

1. Introduction

Following the start of the pandemic in 2020, the German far right underwent a diversification in terms of narratives, social movements that use these new narratives, and spaces where they communicate online (Rogers, 2020; Rothut et al., 2023; Zehring & Domahidi, 2023). While large social media platforms 'deplatform' extreme accounts, the far right increasingly moves to alternative platforms that are less regulated (Rogers, 2020). In this context, first research hints toward an increase of far-right activity on TikTok and its function as a breeding ground for radicalization (Pre:Bunk, 2023).

Especially in the German context, initial evidence indicates a mass integration of various far-right actors such as politicians, protest groups (e.g., 'Querdenken'), social movements (e.g., 'QAnon' or the

'Identitarian movement'), and highly influential far-right figures on the platform (O'Connor, 2021). Thus, we aim to study the success of German far-right groups on TikTok, their popularity, content, and ability to mobilize by proposing a mixed-method approach consisting of manual annotation, unsupervised image classification, and automatic text extraction.

While 'far-right' is an umbrella term to subsume all kinds of right-wing groups (Pirro, 2023), we intend to examine the existence and characteristics of individual groups on TikTok in detail (RQ1) by conducting a Latent Class Analysis (LCA) of manually annotated accounts. With the categorization into far-right groups, we are able to evaluate the popularity and performance of far-right content in a more fine-grained approach. We assume the ultimate goal of far-right accounts is to create attention, increase followership, and gain influence (Goodwin et al., 2023). The potential to mobilize within the group's followership (=internally) and outside their community (=externally) is therefore linked to a video's popularity and engagement cues (RQ2). Finally, we use deep learning neural networks to classify, label and extract text from frames of TikTok videos by using Google's Vision API. The resulting texts and labels are combined with the LCA to characterize each group's content and its relationship with the group's success on TikTok (RQ3).

2. Literature Review & Theory

2.1 TikTok and the Far Right

TikTok was founded in 2017 and quickly became popular worldwide, especially among young users (Medina Serrano et al., 2020). The platform's architecture was first designed around music and dance; hence, most content contained imitation and choreography. Since then, and by introducing interaction and edit functions, creators are able to give context and interpretations to their videos (Cervi et al., 2021). In consequence, the platform has taken 'a serious turn' and got increasingly diversified, including political communication (Cervi & Divon, 2023; Medina Serrano et al., 2020). Central to the recent success of platforms such as TikTok is the recommendation algorithm, which fosters an increasing diversity in content, style, or format by curating what appears on individual users' home feeds. The 'For You' page (FYP) on TikTok algorithmically curates a selection of videos, prioritizing new and trending content over users' existing connections (Weimann & Masri, 2021; Zeng & Kaye, 2022), thereby enhancing the potential for any video to go viral and making the platform a hub for (political) mobilization (Zulli & Zulli, 2022). However, TikTok's algorithm is known for having a strong locking mechanism through which content that has been previously viewed or engaged with is prospectively prioritized (Gao et al., 2023). This tendency is also observed by Grandinetti and Bruinsma (2022), who find that TikTok's algorithm quickly adapts to polarized political content. As a result, users often encounter one-sided video content in many of their suggested videos. In this context, Medina Serrano et al. (2020) discovered a similar pattern in the US, revealing a partially polarized and isolated network between Republicans and Democrats on the platform.

Polarization, one-sided content, but also the favoring of less popular but trending new content displays a fruitful ground for radicalization and extremism: Weimann and Masri (2020, 2021) find an increase in the popularity of antisemitic content on TikTok. Hate, transphobic, or extreme speech flourish on the platform and can easily replace ordinary content once a user engaged with it (Little & Richards, 2021; Weimann & Masri, 2020). Consequently, single-issue-oriented social media influencers such as nationalists or conspiracists, but also populist radical-right politicians were found to be active on the platform (Albertazzi & Bonansinga, 2023; Boucher, 2022; O'Connor, 2021). This is especially worrisome because TikTok tends to have a younger user base, which is more vulnerable to radicalization since they are typically not yet settled in their political orientation (Schmid, 2013, p. 38). Thus, they are more easily caught in radical content, especially when presented as 'funny' or entertaining (Weimann & Masri, 2021;

Zeng & Kaye, 2022). Using sarcasm and memes, protest-related content, or activism, in general, was also found to be thriving on the platform, e.g., by making fun of supposedly hypocritical statements of mainstream politicians or media (Cervi & Divon, 2023). First research indicates that their activity on the platform is also linked to more offline protest participation (Boulianne & Lee, 2022), translating successful online mobilization efforts into offline actions.

Altogether, TikTok evolved into one of the leading platforms for political communication that may spark the activity of various ideological backgrounds and motives (Newman, 2022). Until now, there is no comprehensive review, however, of how prevalent different far-right groups are on the platform. Hence, this study asks:

RQ1: What far-right groups can be found on TikTok?

2.2 Far-right Mobilization and the Role of Online Engagement

Political mobilization refers to the process by which candidates, parties, activists, and groups induce other people to participate (Rosenstone & Hansen, 1996). Especially for (radical) grassroots actors such as protest movements, articulating their views to the public is crucial. They spread ideological elements with the aim of activating ideology-conform behavior to ultimately aggregate individual efforts into a larger cause (Bennett & Segerberg, 2012). Factors like high visibility or embeddedness in large networks have been found to drive mobilization (Castelli Gattinara et al., 2022). Both visibility (i.e., the public awareness and attention a movement attracts) and embeddedness (i.e., the size of the network of supporters) can be fostered by successful TikTok communication.

Albeit traditionally associated with street protest activity, mobilization can also become apparent online and translate into the 'success' of TikTok content (Pirro & Gattinara, 2018). Social media communication opens a broad palette for possible mobilization cues, and the far right makes wide use of it (Caiani, 2022). TikTok and its algorithm can be employed for both, outwards-oriented and inwards-oriented mobilization. Outwards-oriented mobilization results in engagement (e.g., liking, commenting, sharing) from people who are not regularly viewing the communicator's content, but are rather incidentally exposed to it (e.g., by algorithmic means). It is aimed at gaining reach and public visibility, which, in turn, can further drive mobilization. Ultimately, outwards-oriented mobilization can aid the mainstreaming of far-right attitudes (Brown et al., 2023) and the recruitment of new followers (Boucher, 2022).

In contrast, inwards-oriented mobilization leads to internal engagement undertaken by an account's established followership. High levels of engagement can be associated with commitment to the communicator's goals. Thus, inwards-oriented mobilization is intended to increase ideological consolidation and support by sympathizers as well as to bond with them (e.g., replying/chatting in the comment section or publishing reply videos), aiming to stabilize and expand the support network. This form of engagement can strengthen in-group identification and isolation from diverging worldviews, fueling polarization and radicalization (Ayanian et al., 2019). High internal engagement is, thus, the most dominant sign of successful mobilization.

Content-related factors like online engagement can be a potential outcome and expression of more or less successful mobilization (i.e., high or low engagement). TikTok differentiates several engagement opportunities: publicly liking or commenting on a video functions as a means to overtly signal attention and cognitive processing of presented information, ultimately manifesting in public expression of approval (Macafee, 2013). Sharing content through one-to-one chats allows for the private exchange of thoughts and opinions among peers. Heiss et al. (2019) found that political posts containing mobilization cues were more frequently shared, pointing toward a relationship between mobilization efforts as a trigger on the content level and engagement activity on the audience level as a reflection of these efforts' success. Creating engagement among the followers speaks for internal mobilization. Creating engagement among

people not yet following can be interpreted as a sign of external mobilization. While these metrics can function as an expression of successful mobilization to a certain degree, we assume that creators have the intention to mobilize externally, creating outreach and recruiting new followers. Simultaneously, the content can aid the ideological consolidation of individuals already affiliated (i.e., followers). Relying on these engagement cues, we ask:

RQ2: How successful are the far-right group's internal and external mobilization attempts?

2.3 Analyzing (Radical) Visuals in Political Communication

The complexity and often computationally heavy task of extracting meaning from images is one main reason for the gap between the necessity of researching radical visuals and lacking quantitative and large-scale studies (Tanoli et al., 2022). Supervised approaches with pre-trained and classified images and videos need thousands if not millions of training data for a neural network to be self-learning and reliably performing (Lin et al., 2011). A possible and widely spread alternative are unsupervised approaches using algorithms (pre-)trained on detecting already classified objects (e.g., Google Vision, Microsoft Azure) (Omena et al., 2021).

The usefulness of these approaches typically depends on the researcher's aim of how to utilize images. Until now, processing large quantities of images was mainly subject in the field of protest observation and used in rather descriptive ways (Schwemmer et al., 2023). Image classification was, for example, used to examine the age and gender of political accounts (Medina Serrano et al., 2020), extract emotions from radical images (Marengo et al., 2022), colors in propaganda (Wang et al., 2022) or political ideology (Xi et al., 2020). In this study, we argue that unsupervised approaches can be further utilized in a mixed-method approach, combining image labels with context information and other processing methods. Several contributions were already made similarly: Peng (2021) used image classification to infer the overall aesthetic of politician images on Instagram, coded the biographical background of the politician, and explored which setting is most engaging. He found that a 'personal setting' in which the politician creates a kind of Vlog-style format created the most engagement. Clever et al. (2023) use the portrayed emotional valence and the corresponding text under Islamist propaganda images on Instagram to conduct not only image classification, but also to explore a semantic network of Islamist actors. Hashtags and complete topics on Instagram were 'hijacked' by the accounts to reach the public and to create local digital communities. Mitts et al. (2022) used image classification to extract, among other, violent objects (e.g., guns, blood) in ISIS propaganda and found that violent or extreme objects reduced recruitment effectiveness.

In a similar vein, this study aims to advance quantitative and computational video analysis employing unsupervised methods like image classification and text extraction, asking:

RQ3: How does far-right groups' (visual) content on TikTok differentiate between each other?

3. Methods

3.1 Data Collection

For collecting data, all annotators created a bot account following an initial list of German far-right accounts.[1] Far-right accounts are based on a list of far-right influencers from Rothut et al. (2023). 37 were on TikTok and served as seed list. Further, we added 79 German far-right politicians collected by Fuchs

[1] Ethical approval was granted by the Institutional Review Board of the Communication Department of the University of Vienna (Approval No. 20230314_011)

(2023). Once following the seed list, we started watching videos and added accounts that were algorithmically proposed to us. Additionally, we checked already identified accounts for relevant hashtags that we used for further account exploration. We collected account and video metadata using the Python library 'pyktok' and the R package 'traktok,' and obtained the latest 30 videos through the 'tikapi' package, which is the current limit for data collection via these sources. This strategy resulted in 7,895 videos from 350 accounts.

3.2 Account Selection and Classification

The classification of accounts in this study commenced with the codebook from Schulze et al. (2022) as a foundational reference, which was then extensively refined to be better suited for TikTok data and validated through two rounds of pretesting. Pretest results reached sufficient intercoder-reliability for the central variables (see supplemental material). The codebook for identifying and annotating far-right accounts entailed several context variables to specify account-based characteristics of the videos. An account (not every single video) represents one coding unit: The coder's impression of the latest videos, thumbnails, profile description, TikTok handle, and profile image were decisive for the annotations.

To evaluate the relevance of an account for our study, we coded whether far-right elements were visible in a dominant style. In total, we annotated the (non-)existence of nine elements subjected to far-right online discourse that are considered far-right indications in the scientific literature (for an overview, see Carter (2018)). Based on traditional far-right elements (Mudde, 2000, p. 187), we annotated the existence of nationalism, xenophobia, anti-elitism, authoritarianism, and anti-democratic features. Complementing these, we further added hate speech, fear speech, the existence of conspiracies and calls for or prevalence of protest offline and online. Each element's broader definition, how they are connected to the far-right, and how these elements contribute to radicalization or radicalized discourse are discussed within the codebook in the supplemental material: https://osf.io/3vfkn

Notably, the annotation of one specific far-right narrative does not necessarily mean that the account is part of the far right, nor that the narrative itself necessarily means it is of far-right nature. For example, conspiracies—even though often having an extreme and far-right core (Schulze et al., 2022) —could also be non-radical in nature, such as the belief in UFO sightings. Hence, we argue that an account can be coined of showing far-right elements only if a combination of elements is prevalent and, thus, only included accounts that showed at least two elements described above and showed a general far-right sentiment.

3.3 Latent Class Analysis

Given the high number of far-right accounts in our database, the heterogeneity of the far right (Pirro, 2023), and to avoid multicollinearity between co-occurring elements, we chose to cluster them into groups. We conducted Latent Class Analysis (LCA) based on their ideological orientation. LCA assumes heterogeneous variables to be more adequately presented by a categorical latent cluster (Collins & Lanza, 2009). LCA is suited for binary annotations, whereas the best cluster option is the one with the lowest values for the Bayesian or Akaike Information Criterion (BIC & AIC) (Karnowski, 2017). If several models perform similarly, the semantically most plausible option should be chosen (Weller et al., 2020). After evaluating different model parameters in Figure 1, we chose the 4 class model as it performed similarly to model 3 but made much more sense semantically.

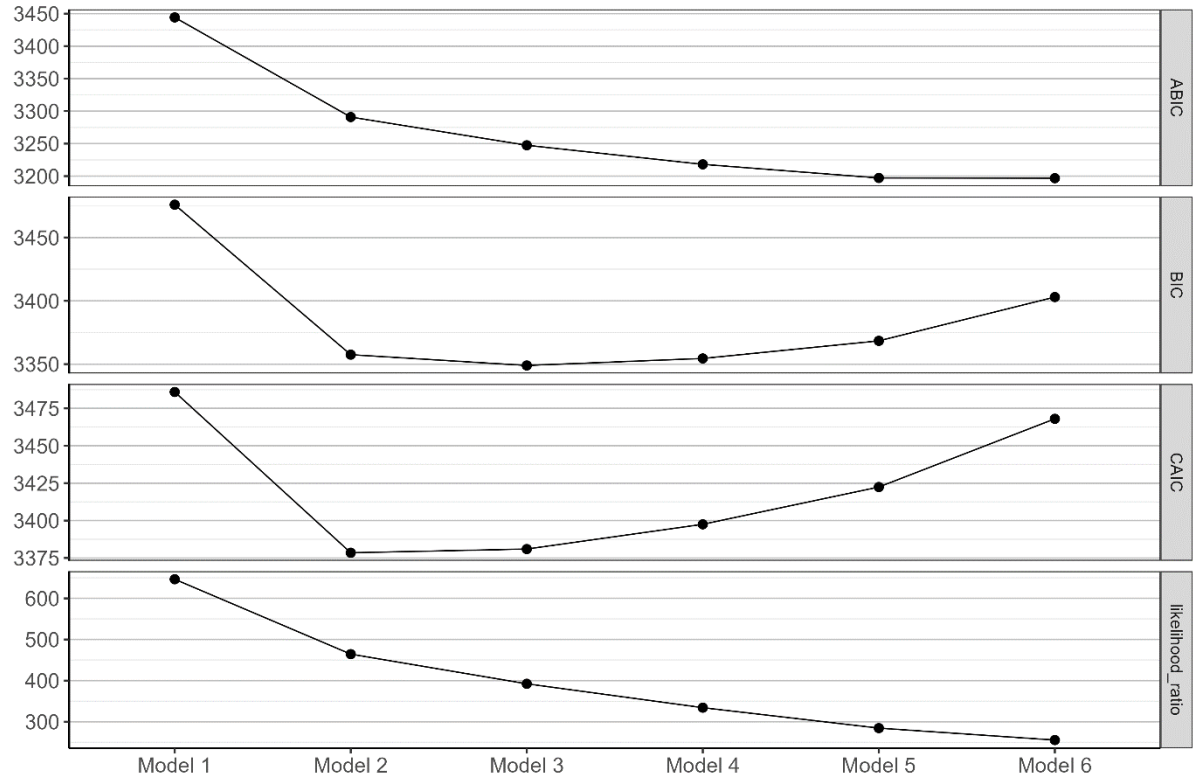

Figure 1

Model statistics ABIC, BIC, CAIC and likelihood ratio for different latent classes. Model 4 was chosen.

3.4 Image Classification

In order to analyze the individual video's content, we extracted a number of frames from a video depending on its length and the assessed frame variation from the manual annotation, which served as a proxy for the degree of frame changes in the accounts' videos. Hence, shorter videos from accounts with little frame changes have fewer frames extracted, while videos with longer videos and frequent frame changes have more frames extracted (see code segment).

```
def calculate_frames(video_length, content_variation):
    if video_length < 20:
        return 1 * content_variation
    elif 20 <= video_length <= 100:
        return 2 * content_variation
    else:
        return 3 * content_variation
```

In total, 32,500 frames were extracted from the videos. The frames were then processed and transferred to the Google Vision API for optical character recognition (OCR) and image classification using the 'googlecloudvisionR' package. The Google Vision API uses deep learning and computer vision techniques to label and classify images. The API takes an input image and applies a pre-trained Convolutional Neural Network (CNN) model to analyze the image's content. Google only partially published the sources of the training data it uses to develop the CNN. From what is known, it is based on classified images provided by its in-house Google Image Search and Google Photos functionalities

(Schwemmer et al., 2020). The CNN uses classified images to recognize unique features associated with elements of an image (pixel combinations), allowing it to classify new images with similar elements accurately or to correct itself if its prediction for an element is not identical with the pre-trained classification (Chen & Chen, 2017). As the output of image classification, Google provides a range of labels associated with its probability score (e.g., Figure 2).

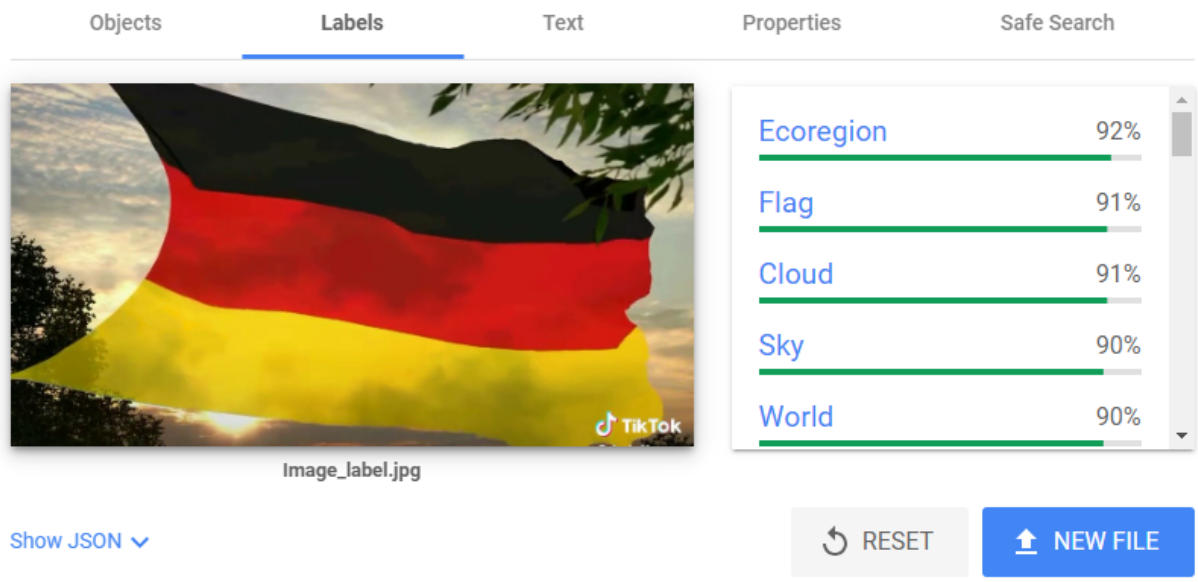

Figure 2

Example output of Google Vision label classifications.

As Hosseini et al. (2017) pointed out, Google Vision's classifier is not robust to noise, and performance decreases with unclear images. Because our images are frames extracted from videos that have natural camera movements, we sampled a test query of 200 frames and plotted the probability score for up to four labels for each frame (see Figure 3). Schwemmer et al. (2020) validated Google Vision's probability score by comparing manually annotated labels for an image with Google Vision's label for the same. They found that agreement increased with higher probability scores, and the performance in the higher probability range of Google Vision is quite adequate. However, inspecting the density of each output rank in Figure 3, we decided to only capture two labels for each frame as first, the probability flattened after the second label—decreasing the mean probability and hence, quality of the label—and second, to reduce the costs generated using the Google service. Ultimately, 65,000 labels were created.

The classifiers annotate images according to what they identify as a visual object and do not produce a specific meaning of an image. To tag each label and image with a broader meaning, the three authors independently categorized every top label occurring at least 100 times inductively into broader categories, considering the frame's context and example frames (see Table 6 in the supplement). The comparison revealed only little differences between the authors' categories. The differences were mainly a result of vague labels created by Google Vision, which were either re-categorized or excluded from the analysis after inspecting frames containing the specific label.

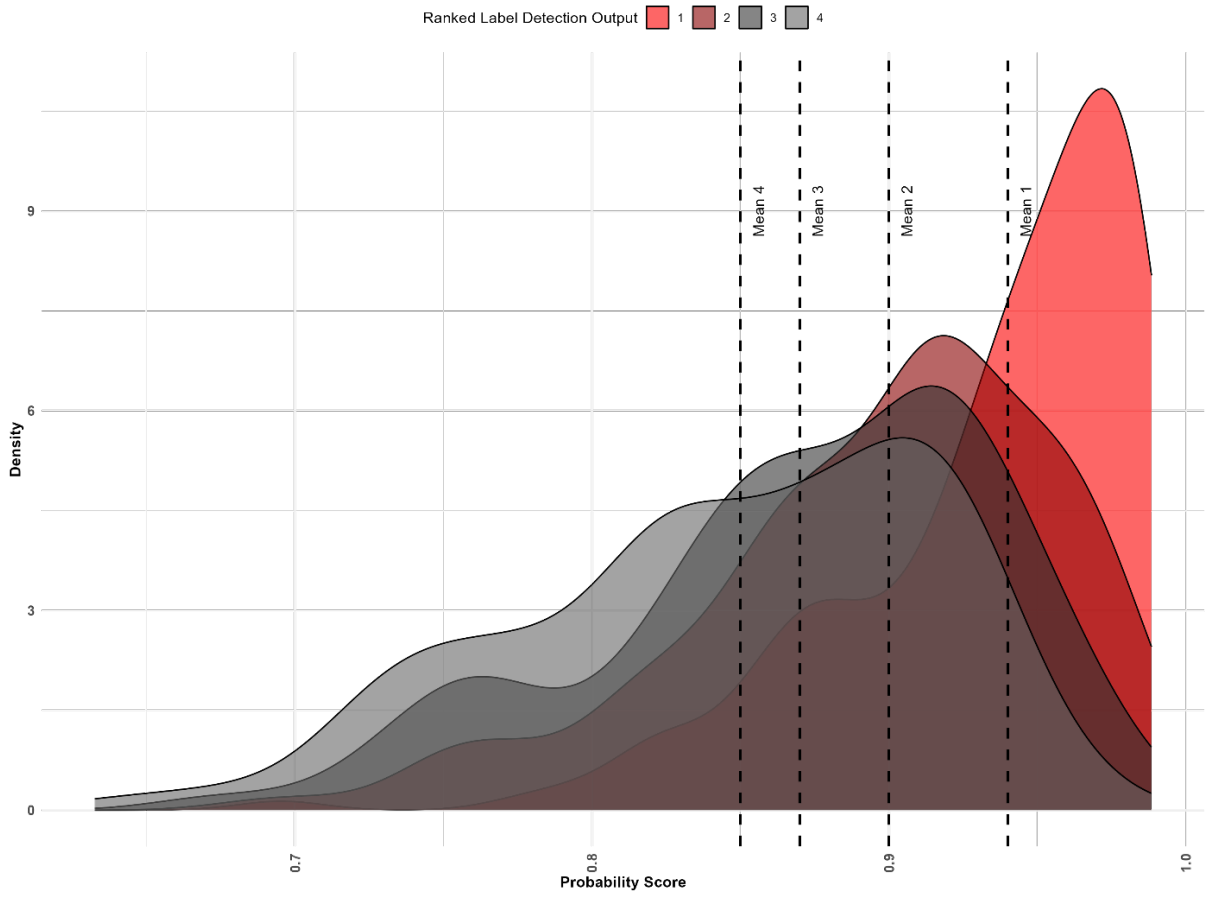

Figure 3

Density of label probability (= certainty) by output rank provided by Google Vision.

Further, we used Optical Character Recognition (OCR) to extract and classify words and sentences inserted in the video. We did this as textual elements in video frames provide essential context information. Google's OCR algorithm is widely used in industry and academia as it is highly accurate for the most used languages, including German and English (Arief et al., 2018; Williams et al., 2020). In combination with the video's description, we created a string vector for each video, classified the language, and pre-processed the text using Python and the 'langdetect' package. After cleaning the data, we used 'SpaCy' for Named Entity Recognition (NER). NER is based on a neural network classifier trained on large quantities of text on social media and web pages, classifying named entities into predefined categories such as person names, organizations, and locations. Derived entities can be used to assess the frame's issue. Finally, image labels and textual data were combined with our manual annotation of TikTok accounts and their latent classes, creating a multimodal approach to characterize the German far-right on TikTok and their (internal and external) mobilization potential.

4. Results

4.1 Latent Class Analysis

To answer RQ1, inspecting the most prevalent far-right groups on TikTok, a four-class model performed best based on the manual annotations. Item shares for each group and far-right narrative are displayed in

Figure 4. We labeled the first group *Conspiracists* (n=98), as accounts show higher shares of conspiracies. Aligning with existing research (Ekman, 2022), the *Conspiracists* more intensely focus on fear speech and anti-elitism, as most far-right conspiracies entail the fear of being betrayed by elites. We coined the second group *Extreme Right* (n=58). While the group displayed proportions across all annotated items, they were unique in having exclusively high percentages in the most extreme categories: authoritarianism and anti-democratic narratives. Therefore, they represent the most extreme accounts in our sample. The third and largest group was labeled *Nationalists* (n=104). As unique traits, they have higher shares of xenophobia and nationalism. Combined with large quantities of fear speech and anti-elitism, they represent a more traditional, anti-migration, and patriotism-related branch of the far right. The last group consisted of *Protesters* (n=63) having higher shares of online and offline protest combined with anti-elitism and fear speech.

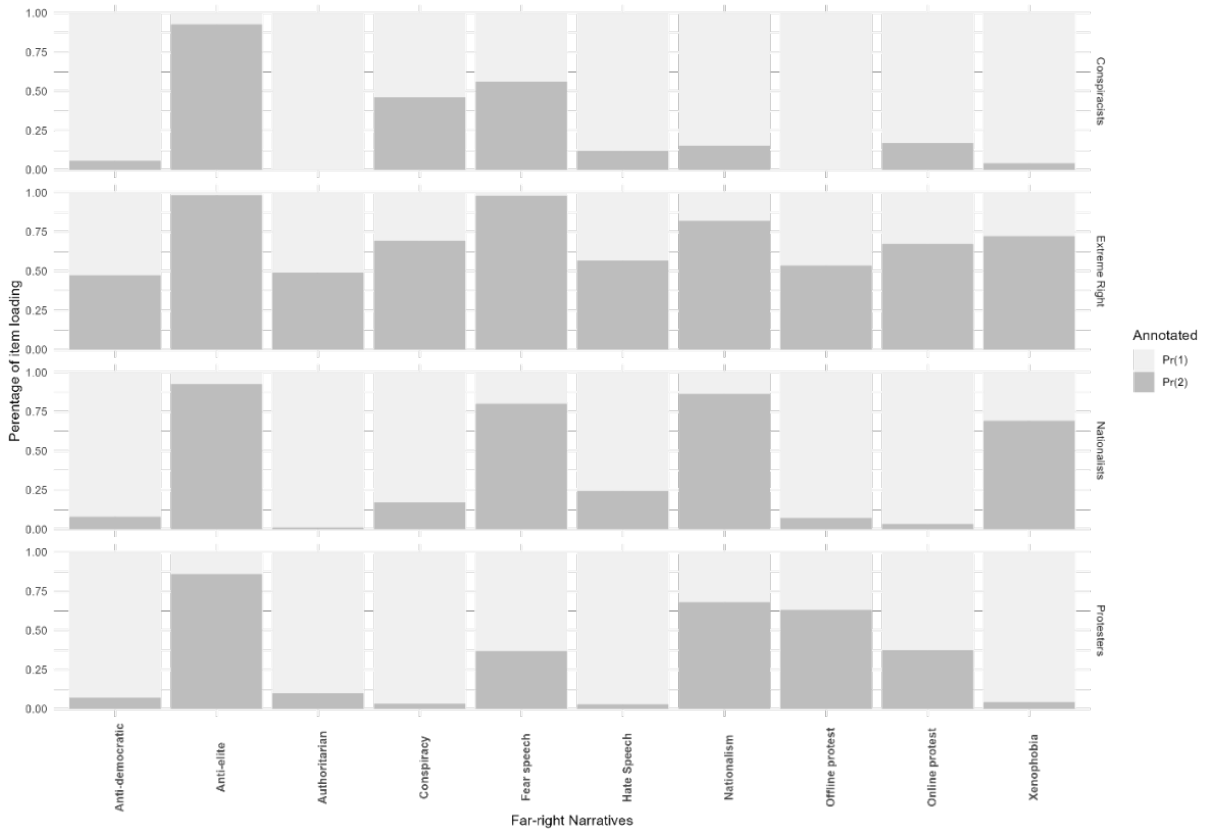

Figure 4

Latent classes and probability shares on far-right elements.

4.2 Popularity and Engagement

After LCA clustering, we inspected engagement cues and the videos' labels and content through the lens of group membership. Starting with the groups' overall popularity and engagement in Figure 5 and Table 1, we conducted a series of Kruskal-Wallis and pairwise Wilcoxon post-hoc tests for non-parametric independent samples to extrapolate significant differences between the groups in terms of their mean popularity (Dinno, 2015; Ostertagová et al., 2014).[2] We found that the *Conspiracists* are most popular on TikTok. With an average of 168 comments, 4,466 likes, 394 shares, and 68,078 views, all four popularity

[2] Kruskal-Wallis and Wilcoxon post-hoc test results and effect sizes are stored in the supplement in Table 2-5: https://osf.io/3vfkn

measures are significantly higher than the means of the other groups. The *Nationalists* and *Extreme Right* follow in popularity and do not differentiate in means except for the like count. Overall, the *Protesters* appeared to have the lowest popularity scores. This observation is not always significant, especially in comparison to the *Nationalists* and the *Extreme Right* where the mean share, like, and comment count is not significantly different to the *Protesters*. Albeit small effect sizes, *Conspiracists* tend to be by far most successful in mobilizing for their interests, followed by *Nationalists* and the *Extreme Right*.

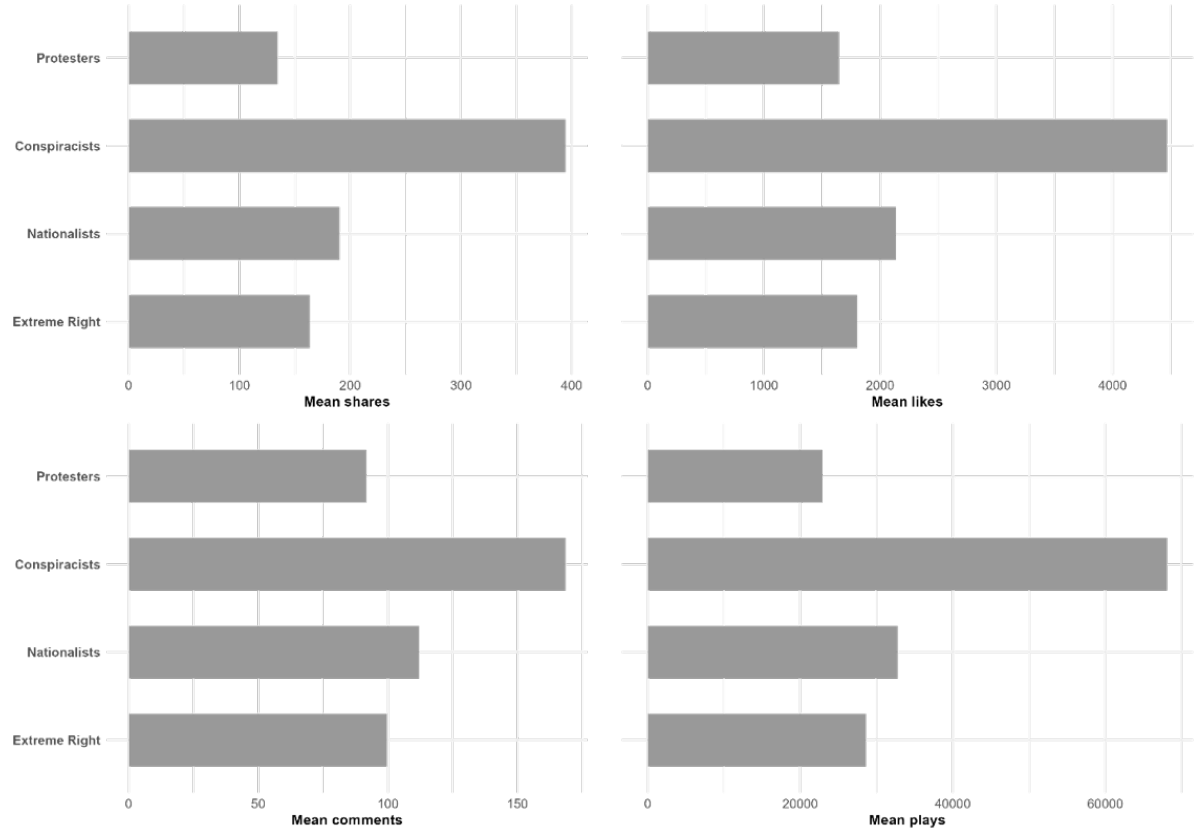

Figure 5

Mean popularity measures by latent class.

Exploring the ability to mobilize internally and externally through unweighted and sheer popularity in terms of likes, shares, comments, and views does not necessarily tell a complete picture. For instance, the observed popularity measures may be influenced by the mean follower count per group, as the *Conspiracists* also show the highest average follower count. Contrary, 'following someone' on TikTok is a rather diffuse and weak concept, as the viewer does not decide what they want to watch like on YouTube, nor do they necessarily need to actively click on a button to follow someone.[3]

Thus, and to explore the overall popularity of each group in terms of how engaging they are, we additionally weighted each measurement with the video's play count in Table 1 or Figure 6. A different picture is revealed for likes and comments: Starting with the Conspiracists, they now have the smallest average comment count while being approximately on the same level of shares with Nationalists. In both groups, on average, only 0.4% of all viewers who watched a video also shared it. However, effect sizes

[3] There is no official statement by TikTok on this subject. See: https://www.reddit.com/r/Tiktokhelp/comments/oa9igr/tiktok_making_me_follow_random_people

were not significantly different between the Conspiracists and other groups. For mean comments and likes, effect sizes significantly differ between all groups, confirming that viewers engage less with conspiratorial content than viewers in the other groups. On average, only slightly above 6% of viewers like and 0.4% of viewers comment on conspiratorial videos. In comparison, viewers of videos from Protesters and Nationalists like above 8% of the content on average. For comments, the Extreme Right joins the ranks of the other two groups. All three generate significantly more comments than the Conspiracists with above 0.6 comments per view on average.

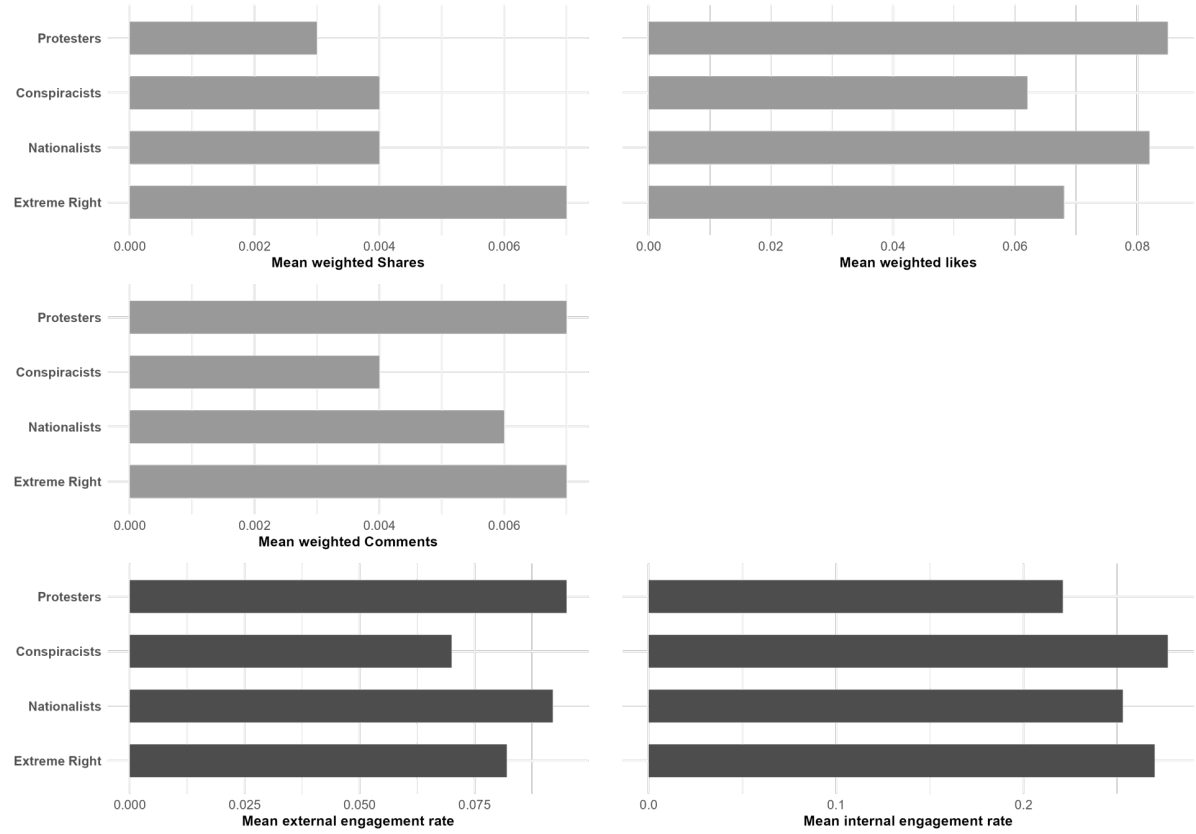

Figure 6

Mean weighted engagement rates.

To answer RQ2 on how the groups mobilized internally and externally, we also introduced the concept of internal and external engagement rates by dividing the popularity measures likes, shares, and comments by the play count (external) and the follower count (internal). Inspecting the indices' scores for the *Conspiracists* as a baseline, the group has the lowest external engagement rate. Only 7% of viewers engaged with their content, while *Protesters* (9.5%), *Nationalists* (9.2%) and the *Extreme Right* (8.2%) have higher mean external engagement. The Kruskal-Wallis and pairwise Wilcoxon post-hoc tests confirmed significant differences between all groups. Weighting the engagement by followers (i.e., internal engagement), the effect is no longer visible. In fact, protest content now has the lowest mean engagement with 22.1 %. This value is significantly different from all other groups. And yet again, *Conspiracists* have the highest internal engagement value with 27.77%. However, the margin is too small to be significantly higher than the mean values for the *Extreme Right* (27.0%) and *Nationalists* (25.3%). Regarding internal engagement rates, all three groups are comparable, with only protest content scoring lower.

Table 1

Mean (weighted) engagement and popularity rates.

	Extreme Right	Nationalists	Conspiracists	Protesters
Mean Views	28626 (220,792) B,D,F	32798 (175,679) B,D,F	68078 (293,503) B,D,F	22930 (106,118) B,D,F
Mean Shares	163 (1293) e	190 (1193) e	394 (1952) e	134 (769) e
Mean Diggs	1803 (22,497) A,b,C,D,e,F	2136 (12,113) A,b,C,D,e,F	4466 (25,291) A,b,C,D,e,F	1646 (7,555) A,b,C,D,e,F
Mean Comments	99.6 (455.7) B,e,D,e,F	112.2 (441.0) B,e,D,e,F	168.6 (623.4) B,e,D,e,F	91.6 (358.5) B,e,D,e,F
Weighted Mean Shares	0.007 (.025) B,D,e,F	0.004 (.007) B,D,e,F	0.004 (.006) B,D,e,F	0.003 (.005) B,D,e,F
Diggs	0.068 (.047) A,B,C,d,f	0.082 (.057) A,B,C,d,f	0.062 (.046) A,B,C,d,f	0.085 (.046) A,B,C,d,f
Comments	0.007 (.011) B,e,D,f	0.006 (.007) B,e,D,f	0.004 (.006) B,e,D,f	0.007 (.007) B,e,D,f
$Engagement_{Internal}$	0.270 (2.411) c,d,e,F	0.253 (1.276) c,d,e,F	0.277 (1.590) c,d,e,F	0.221 (.760) c,d,e,F
$Engagement_{External}$	0.082 (.063) A,B,C,D,e,F	0.092 (.060) A,B,C,D,e,F	0.070 (.049) A,B,C,D,e,F	0.095 (.049) A,B,C,D,e,F

Note. Base varies from n = 1,321 to 2,560 valid cases (see supplement). Weighted mean values are divided by view or play count. Arithmetic mean values are reported with standard deviation in brackets. The superscript "A" represents a significant relationship between the mean of *Extreme Right* and *Nationalists*; the superscript "B" indicates a significant relationship between the mean of *Extreme Right* and *Conspiracists*; the superscript "C" denotes a significant relationship between the mean of *Extreme Right* and *Protesters*; the superscript "D" represents a significant relationship between the mean of *Nationalists* and *Conspiracists*; the superscript "E" implies a significant relationship between the mean of *Nationalists* and *Protesters*; the superscript "F" points to a significant relationship between the mean of *Conspiracists* and *Protesters*. Superscript uppercase letters represent a significance level of $p < 0.01$, while superscript lowercase letters signify a significance level of $p < 0.1$ or $p < 0.05$. No superscript letters indicate a non-significant relationship.

Overall, protest content was the least popular but had the highest mean external and lowest internal engagement rates. Conspiratorial content proves differently. *Conspiracists* posted the most popular content that produced among the lowest external but highest (though not significant) internal engagement rate. While the *Protesters* are able to mobilize and step beyond their 'bubble' (i.e., followers), the *Conspiracists* are not engaging for users not following them; within their followership, however, their inwards-oriented mobilization efforts seem to work out. Further, except for a noteworthy and significantly higher mean share for the *Extreme Right*, the *Nationalists* and *Extreme Right* are placed between both remaining groups in popularity and engagement indices. Their means could not be differentiated consistently, at least regarding engagement rates. However, *Nationalist* are far more successful in total popularity and mobilization potential than the more diverse but also more extreme accounts in the *Extreme Right*.

4.3 Labels and Content

To shed light on what content each group posted in our sample and to answer RQ3, the following section deals with content, its variability, and classified labels of the collected videos by group. Starting with label variation in Table 2, we counted the unique labels provided by Google Vision, weighted by the number of videos per group, and calculated the standard deviation of the counted label variation. Overall, the *Conspiracists* are yet again on top, with the highest number of unique labels (478), followed by *Nationalists* (428). In contrast, the *Protesters* (372) and *Extreme Right* (367) show less content variation. The same picture is visible when inspecting the weighted labels and the standard deviation of all groups.

Table 2

Unique labels per latent class.

Latent Class	Unique Labels	Unique Labels (weighted by video count)	Standard Deviance σ
Far Right	367	32.57	99.37
Nationalist	428	51.27	167.41
Conspiracists	478	47.61	173.35
Protesters	372	28.82	74.57

Afterward, we categorize video labels into broader categories. For details, see the Methods section and the supplemental material. Table 3 presents the broader categories and their relative share per group. Overall, the categories ’Environment’, ’Commentary’, ’Person or Body ’, and ’Face or Head’ are among the most prevalent in all four groups. They are followed by less prevalent categories ’Emotionality’, ’Car’, ’Parliament’, ’Media or News’, and ’Colors or Design’. While the category distribution follows a clear pattern in groups that entail the same four categories to be the most prevalent, each group differs in the relative shares they have in most categories.

Table 3

Label categories and top mentions entities in videos per class.

Group	Label	N	Share	Top Entity	Share
Extreme Right	Person or Body	2177	0.23	german*	0.41
Extreme Right	Commentary	2142	0.23	ukraine	0.11
Extreme Right	Face or Head	1840	0.19	afd	0.10
Extreme Right	Environment	1546	0.16	russia	0.08
Extreme Right	Emotionality	496	0.05	berlin	0.08
Extreme Right	Parliament	406	0.04	helferich	0.07
Extreme Right	Media or News	377	0.04	youtube	0.04
Extreme Right	Car	324	0.03	usa	0.04
Extreme Right	Color or Design	167	0.02	bundestag	0.04
Nationalists	Person or Body	5629	0.30	german*	0.38

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Nationalists	Face or Head	4149	0.22	afd	0.15
Nationalists	Commentary	2800	0.15	bundestag	0.11
Nationalists	Environment	2520	0.14	berlin	0.08
Nationalists	Emotionality	933	0.05	parliament	0.07
Nationalists	Parliament	834	0.05	ukraine	0.06
Nationalists	Media or News	662	0.04	cdu	0.04
Nationalists	Car	592	0.03	spd	0.04
Nationalists	Color or Design	378	0.02	chrupalla	0.03
Conspiracists	Face or Head	5964	0.32	german*	0.30
Conspiracists	Person or Body	3829	0.21	ukraine	0.13
Conspiracists	Commentary	3168	0.17	russia	0.12
Conspiracists	Environment	2261	0.12	berlin	0.10
Conspiracists	Emotionality	966	0.05	afd	0.08
Conspiracists	Parliament	865	0.05	usa	0.06
Conspiracists	Media or News	530	0.03	youtube	0.06
Conspiracists	Car	494	0.03	parliament	0.05
Conspiracists	Color or Design	306	0.02	dubai	0.05
Protesters	Face or Head	2233	0.26	german*	0.30
Protesters	Person or Body	1727	0.20	afd	0.12
Protesters	Environment	1468	0.17	bundestag	0.10
Protesters	Commentary	1350	0.16	guido reil	0.10
Protesters	Car	670	0.08	ukraine	0.08
Protesters	Emotionality	375	0.04	russia	0.07
Protesters	Parliament	306	0.04	berlin	0.07
Protesters	Media or News	284	0.03	saxony	0.07
Protesters	Color or Design	142	0.02	vaccine mandate	0.04

Starting with the *Extreme Right group*, frame labels are over-represented in the four largest categories. Only minor shares are visible in the smaller categories, and confirmed that the *Extreme Right* has only minor variations in content or visual elements in their videos. The combination of high shares on image elements that depict a person, body, or clothing was combined with an equal amount of shares on labels representing some commentary of that person (f.e. written text beneath or above the video). Together with protest content, they had the highest shares in the environment category, indicating that most of the videos in this group were produced in an outside environment within nature or cities. Inspecting the most mentioned entities, words referring to Germany have by far the most prevalent relative share (41%). The Russia-Ukraine war and politics in Berlin and the US are discussed in this group. Noteworthy is the mention of Matthias Helferich, a far-right AfD politician, who described himself as ’the friendly face of National Socialism’ (Stickings, 2021).

In contrast, the *Nationalists’* content was less focused on commentary (only 11%) and more centered around spreading visuals of a complete person (30%) instead of only face or head (22%). The remaining label categories were marginal. Concerning textual content, Germany-related references were among the

most prevalent (38%) again. Interestingly, the remaining entities all refer to German politicians or politics except for 'Ukraine'. Qualitative inspection reveals that this may be due to plenty of parliamentary speeches being posted in this group.

The *Conspiracists* had the most prevalent share for labels depicting elements of a face or head (30%) and only marginal (13%) shares depicting a whole person, pointing toward a more 'Vlog'-like content style. Additionally, commentaries were also among the most prevalent category. Content-wise, the Russia-Ukraine war, German politics, and the USA played a significant role in videos of this group. Finally, the *Protesters* show large shares of both, showing the face or head (26%) and the complete body (20%). The categories environment (17%) and cars (8%) played an outstanding role in comparison. This is reasonable for this group since such settings are likely markers for street protests. Protest content was also not surprisingly focused on German politics but also on the Russia-Ukraine war and anti-vaccination.

5. Discussion

5.1 Far-Right Mobilization on TikTok

Following initial research about the emergence of extreme speech and individual actor types such as politicians on the platform TikTok, we found that a variety of far-right sub-groups are already active on the platform and once again show their talent as early adopters of new and emerging technologies (Pre:Bunk, 2023). All four groups have different visual and textual emphases in their videos, indicating diverse stylistics of the far right on TikTok. Starting with the *Extreme Right* and its total popularity, the group is the smallest in our sample and generates the lowest mean popularity aside from the *Protesters*. A possible explanation might be that stereotypical extreme content is often violent, inhumane, or, in general terms, more drastic and, thus, more repulsive and off-putting to the general public rather than generating attention or interaction (Schmid et al., 2022), including violence in images (Mitts et al., 2022). The *Extreme Right*'s unpopularity is also highlighted by their internal and external engagement rates: While they have among the lowest external engagement, internal engagement is high: Viewers already following them may have normalized views on violent or extreme content and hence view or engage with it more. This behaviour was also observed in similar contexts: A study investigating YouTube's recommendation system found a high degree of homogeneity in right-wing populist content, suggesting that users with right-wing orientations are likely to be exposed to and interact with similar content, potentially including extreme viewpoints (Röchert et al., 2020). Visual content analysis for this group revealed that the *Extreme Right* has less variability in its content and mainly focuses on German politics and the Russia-Ukraine war. Nevertheless, given their extreme communication, their average popularity is by no means marginal and confirms observations in existing research that depict plenty of extreme content on TikTok (O'Connor, 2021; Weimann & Masri, 2021).

Nationalists are more successful and prevalent on the platform, as they are the largest group, have the second most popular accounts, and second most engaged audience. Together with protest content, they generate the most external engagement and, thus, are exceptionally inviting to mainstream viewers. They also have the highest content variety, publishing anti-elite-centered, patriotic content about German politics. Insofar they share commonalities with the *Extreme Right,* but are more successful as they publish more variable but less extreme content. This result contradicts recent research, mainly on Telegram, that observes a relatively low or declining salience of typical nationalism-oriented topics and more focus of the German far right on conspiratorial content, protest, and anti-elitist topics during the pandemic (Schulze et al., 2022; Zehring & Domahidi, 2023). One possible explanation for this might be the great potential of TikTok's architecture to mobilize their followership and to reach into public discourse in contrast to Telegram, the platform these observations were made. This is also reflected when inspecting the engagement rate, as the *Nationalists* can generate among the highest mean engagement internally and

externally. Similar tendencies are also observed for nationalism-centered elite politicians within France, Italy, and Spain on TikTok (Albertazzi & Bonansinga, 2023).

Conspiracists constitute the most popular group in our sample. Interestingly, however, viewers of conspiratorial content are less engaged on (unweighted) average. Only when divided through followership, the internal engagement is on par with the second strongest mean from the *Extreme Right*. This suggesting that, for extreme and conspiratorial content, viewers are less likely to be mobilized by such content when first encountering it. However, when such content is approved, supported, or believed, viewers are more likely to engage and identify with it. This relationship was observed in similar contexts and is often referred to as going 'down the rabbit hole' or 'taking the red pill' and describes the process of identification with the presented attitudes while being increasingly isolated from other worldviews (Chapelan, 2021; O'Callaghan et al., 2015). In an ethnographic approach, Boucher (2022) found that TikTok's algorithm strongly supports building conspiratorial echo chambers, aligning with our finding that conspiratorial content has relatively weak external, but increased internal mobilization potential once viewers identify with such content. The Vlog and commentary style of this group's videos complements this finding. Vlogs create a sense of familiarity, intimacy, and closeness that is intended to persuade viewers (Baker, 2022). This style of content is essential for explaining the diverse reasons behind their beliefs on various issues, such as German politics, the Russia-Ukraine war, and US-related topics, thereby making them the most successful group in terms of internal mobilization.

The *Protesters* are the least popular group in sheer popularity. This is surprising as during the pandemic, the German protest movements not only grew in numbers but were also increasingly linked to far-right elements and even radicalization (Hunger et al., 2023). Their 'underperformance' might be partially explained by our study design as TikTok only allows to collect the latest 30 videos of an account. Thus, many videos were published after August 2022. During this time, Corona-related protests decreased in Germany significantly and hence might also influence the *Protesters'* ability to mobilize online (Zehring & Domahidi, 2023, Hutter et al., 2023). This is also reflected in the lowest internal engagement rate, as the observation period lies directly in the time span of the lowest momentum of the protest movement. Visual content that focuses on street protests, protest speeches about German politics, the Russia-Ukraine war, and compulsory vaccinations is less popular and generates less internal mobilization compared to content from any other group.

Overall, far-right movements are not monolithic, and their success depends on their ability to adapt to changing circumstances and appeal to different audiences (Caiani et al., 2012). In our sample on TikTok, especially the *Nationalists* and *Conspiracists* are successful in terms of popularity. The study also stresses the importance of considering in internal and external engagement differences as mobilization means. In this context, the platform may be used for inwards- and outwards-oriented mobilization as the platform's architecture allows to engage with public discourse and potentially creates echo chambers that may contribute to radicalization spirals' into the rabbit hole'. Contrary, protest and extreme content are seemingly not as dominating as on other video-centered platforms such as BitChute (Rauchfleisch & Kaiser, 2021). TikTok remains a platform for internal and external mobilization.

5.2 Processing Images at Scale

Unsupervised image classification algorithms are still a scarcely used method in radicalization and extremism research for many reasons, which are also visible in this study. For example, inspecting the total label variation of each group does not directly translate into actual differences in topic variety between groups and serves only as a proxy. Combining the higher label variation for the *Nationalists* and *Conspiracists* with the more diverse top entities from the NER analysis, however, helps underline a more robust and valid exploratory analysis. We, thus, want to highlight the advantages of using more visual-focused approaches to study radicalization, extremism, or protest. First and foremost, it enables a scaled-up mode of analysis for video and image central platforms such as TikTok and, thus, more generalized

research not only limited to text. Combined with in-video text extraction, most, if not all, optical implemented visuals can be extracted and analyzed. Nevertheless, to fully utilize image processing algorithms, combining a mixed-method approach with manual annotation or other natural-language-based approaches is advisable (Clever et al., 2023). Finally, the study's design is a starting point for similar research on radicalization, extremism, and protest to analyze further the emerging far right on TikTok.

5.3 Limitations

Of course, the study should not be read without considering its limitations. First and on a more methodological level, extracting frames and retrieving image labels does not fully cover the content of each video. Further, the classification algorithm does not extract meaning from the videos and should not be over-interpreted. In this context, recent research indicates biases in how Google Vision returns labels. For example, men were often labeled as spokespersons or businessmen. At the same time, women had more labels that focused on their appearance (Schwemmer et al., 2020). It is possible that we missed relevant information in the videos and that our results are structurally biased based on what Google Vision returns as labels. Possible future pathways in conducting a more meaningful or interpretation-centered approach are self-trained image classifiers. However, they must be highly tailored toward a specific research interest (e.g., videos containing violence). Another possible future opportunity is large-language models, such as GPT-4, that can increasingly extract meaning from visuals, even without pre-trained context data (OpenAI, 2023). However, the functionality was not available when conducting this study.

Second, because we did not compare far-right popularity on the platform with other ideological groups (e.g., far-left or Islamist groups) the success of the far right in this study is hard to compare in ideological terms. First research, however, indicates an extraordinary success of the far right as early adopters on the platform (Boulianne & Lee, 2022). Also, the study only collected and analyzed a small margin of far-right German TikTok and one can assume that far-right groups are growing in size as the popularity of TikTok increases. Our latent class approach only made observations for the most prevalent groups in our sample possible, and results likely deviate with increasing detail on the group level (i.e., differentiating between sub-groups of *Conspiracists*), or outside our sample. Furthermore, while we defined increasing engagement metrics as successful mobilization cues, it's important to note that engagement might not solely indicate agreement, but can also be used to express disagreement. Voicing dissent might be a reason why external engagement from the *Extreme Right* or the *Protesters* is higher than for the *Conspiracists* as the former may attract more dissent because of their more direct act or behavior against the current political system. The usage of (external) engagement as a marker of successful mobilization should, thus, be controlled for dissenting content in future research. It's equally significant to recognize that dissent should influence the algorithmic amplification of content in a similar way as supportive engagement acts, echoing the notion that 'bad advertisement is also advertisement,' and suggesting that all forms of attention, whether positive or negative, can boost visibility.

In this context, we also want to stress that internal and external engagement should only be seen as an approximation of inwards and outwards-oriented mobilization — especially as both metrics can entail overlaps and may influence each other. If many followers, for instance, like a video, it becomes more likely that the content is prioritized by the algorithm, leading it to be distributed to an increased amount of others via the FYP and aiding the recruitment of new followers. Conclusions about the exact relationship of internal and external engagement as well as the functioning and role of the recommendation algorithm is beyond the scope of this exploratory study. We hope to inspire future research to further explore these relationship.

Nevertheless, a lesson that can be learned from this study for policymakers and researchers is that far-right monitoring on TikTok needs to be institutionalized, as the platform evolves into one of the most used platforms of the far right, at least in terms of how much attention they are able to generate for

internal, but also external mobilization. The study's methodological approach was conducted with such a monitoring approach in mind and, hence, can be used to establish longitudinal monitoring of far-right TikTok by using the code provided in the supplement. Further research embedded in a more controlled setting is required to gain more insights into how and when adaption of such content occurs on an individual level (e.g., eye-tracking experiments to analyze which far-right visual elements generate attention; Schmid et al., 2022).

6. Conclusion

The rise of the far right on TikTok is a worrisome trend. Our analysis has shown that nationalist and conspiratorial content is thriving on the platform, having the highest popularity and most variety in content. The success of far-right TikTok reflects not only the political climate but also TikTok's algorithmic architecture. The platform's algorithm potentially promotes content that generates broad engagement and popularity by also favoring new and emerging content, regardless of its far-right nature. The study also contributes to the theoretical discussion about far-right online communication by displaying the variability, content, and engagement in and toward far-right visuals. While conspiratorial content generated less external engagement, its popularity and internal engagement are standing out. It, thus, confirms recent research that highlights *Conspiracists* as emerging within the far right. In contrast, far-right protest in our sample was the most publicly connectable group generating the highest external engagement.

Methodologically, this study is the first to combine visual content on TikTok in the field of radicalization and extremism research with manual annotation data to generate and retrieve meaning from image labels. The study is able to show a possible pathway for future research on how to use TikTok data and unsupervised image classification as the platform evolves into one of the most essential digital environments for the far right.

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JDSR 6(1) (2024) 31–49

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The contingent macro

The ephemerality of memes as discursive devices

Giulia Giorgi[1], Ilir Rama[1]

[1] University of Milan, Italy.

✉ ilir.rama@unimi.it

Abstract

This paper investigates how internet memes are complex and stratified objects, going beyond the standardized definition of 'image macro' habitually employed by scholars. To this end, we take the 2019 Italian government crisis as a case study and analyze a dataset of related 1.269 memes using a combination of computational and qualitative methodologies. Our analysis shows the emergence, proliferation, and fading of popular templates, which remix images and text from the political crisis and occasionally serve as frames for other events: the Contingent Macro. Together with less standardized memetic instances, we found that Contingent Macros concur to create metaphoric narratives, which develop as the event unfolds. Besides formalizing the concept of Contingent Macro, this work provides scholars with a methodological toolkit for the analysis of event-related meme production, which can capture the fluidity of memes. Overall, the article concurs to underline the need for a clear, context-specific definition of memes, tailored to specific social, cultural, and research contexts.

Keywords: Memes; Contingent Macro; Automated visual analysis; Content Analysis; Instagram

1. Introduction

The relevance of internet memes (henceforth referred to as just memes) in contemporary digital society is apparent. Besides being an integral part of users' online interactions, memes have carved out a significant role in public discourse as well: among other things, their ability to spread ideas and influence debates has been demonstrated during protests and social movements (Milner, 2013). Memes occupy an important space within politics, too: they are employed by users to react to political events in real-time, to challenge mainstream media narratives with alternative viewpoints, and to criticize or support political actors (Burroughs, 2016; Heiskanen, 2017).

However, despite comprehensive definitions of memes (Shifman, 2014), A considerable part of existing empirical research has focused so far on standardized formats, or *image macros* (Milner, 2013; Milner, 2016; Vickery, 2014; Mazzoleni and Bracciale, 2019). This perspective appears to be problematic and severely limiting in many ways. For one thing, the definition of *image macro* rests mostly with the wisdom of the crowd: while one may rely on crowdsourced archives like Know Your Meme, considered the most well-known meme repository, to discern conventionalized formats, it is also true that these tools

may be limited by context and cultural specificities (Rogers and Giorgi, 2023). Thus, considering memes as standardized macros obfuscates a sizable portion of the production of memes, especially relevant in fast interconnected environments, such as in the context of political commentaries and protests (Smith and Copland, 2021). Additionally, this approach overlooks how potential negotiations of meaning and discursive reframing are embedded into a macro's rise to prominence or into its disappearance.

To account for this phenomenon, we introduce the notion of Contingent Macro. With this term, we refer to layouts that emerge, quickly rise in popularity, and (usually) decline just as quickly. These formats sprout from highly mediatized events (e.g., protests, electoral campaigns, and so on) using an iconic image, yet their framing power transcends their contingency, as they are appropriated and manipulated by users to fit with their cultural context.

Contingent macros can somehow be considered potential macro templates: far less popular and context-bound than conventional macros, their meaning and use in context have yet to become fully crystallized. Our intent in introducing this concept is not to capture an ephemeral moment in the genesis of 'real' macros. If anything, by demonstrating how most meme templates fall under the category of contingent macros, our work aims at deconstructing the monolithic approach to the concept of macro in favour of a more nuanced, context-specific, and multidirectional understanding that best accounts for the intricate existence of these digital objects.

In this article, we formalize the definition of Contingent Macro and we propose methodological strategies to approach the study of visual politics through memes. To this end, we explore how memes have been employed to frame the 2019 Italian government crisis on Instagram. First, we extracted all images indexed with the most popular hashtag discussing the government crisis (#crisidigoverno) and identified 5.686 images about the event. We then isolated all memes around the event, based on two inclusive criteria: individual reinterpretation (Shifman, 2013, 2014), and intertextuality (Chagas et al., 2019; Shifman, 2013; Laineste and Voolaid, 2016). The resulting memetic dataset has then been investigated through a combination of automated image clustering (Duhaime, 2021) and qualitative content analysis (Rose, 2016).

Our contribution is threefold: firstly, we propose a definition of Contingent Macros as short-lived memetic layouts that are not able to establish themselves in the visual vernacular of digital cultures; secondly, we propose a series of methodological strategies leaning on a combination of automated and qualitative techniques to identify such macros. Finally, we present a case study revolving around the Italian government crisis, illustrating how a considerable portion of the visual production around the issues is composed of Contingent Macros that would not have been considered based on stricter understandings of memes. While our empirical focus is on visual memes, we attempt to outline a broader methodological approach considering Continent Macros across a variety of formats.

2. Theoretical Framework

2.1 Evolution of the concept of meme

First introduced by Dawkins in 1976 to indicate the counterpart of genes, the notion of memes has long lost its 'biological' flair to be conceptualized as a fully cultural phenomenon, embedded and regulated by specific social rules (De Seta, 2016; Nissenaum and Shifman, 2018).

After a long and problematic incubation within the research area of memetics (Blackmore, 1999), media studies scholars resized the importance of diffusion in favor of users' creativity as the central asset of the memetic phenomenon (Shifman, 2014). In this sense, memes can be discerned from other cultural objects, such as the 'virals', which are understood as digital objects (e.g. videos, sounds, images, or combinations of them) circulating unchanged on the web (Shifman, 2014). As opposed to virals, the peculiarity of memes is the stratified message built through several rounds of reappropriation and creative manipulation. As a result, to thoroughly understand memes, users may require an in-depth knowledge of

10.33621/jdsr.v6i1.202

contextual, and sometimes carefully gatekept, in-jokes and cultural references (Milner, 2016; Laineste and Voolaid, 2016).

While users' creativity and intertextual connections have gained pivotal relevance in the definition of memetic objects, other characteristics are now regarded as less essential to the phenomenon. For instance, although irony is still considered an identifying feature of memes (Davison, 2012; Dynel, 2019),several studies have underlined the presence of humorless memetic trends, such as the video memes backboning the LGBTQ campaign "It Gets Better" studied by Gal et al. (2016).

Condensing more than a decade of studies on this pervasive digital phenomenon, the currently shared definition of memes understands them as collections of multimodal cultural artifacts, that created, remixed, and circulated by users across various digital platforms (Shifman, 2014; Milner, 2016; Davison, 2012).

The diffusion of memes across various digital environments, where they have gradually become the "foundational digital practice" (Miltner, 2018), has resulted in a proliferation of different formats. The fragmentation of formats indicates the limitations of a definition of memes, which looks at them as images or videos. As a result, authors like Zulli and Zulli (2020), have extended this conceptualization, shifting the focus from the products to the platform's infrastructure and describing the architecture of the popular platform TikTok as inherently memetic. According to the authors, technical features of TikTok, such as the possibility to use sounds and to create stitches and duets, foster content imitation and give rise to mimetic (and memetic) forms of sociality - as encapsulated in the concept of 'imitation public'.

Inspired by Zulli and Zulli's analysis, Rogers and Giorgi (2023) propose to look at memes as collections of technical objects, that take peculiar realizations depending on the specificities of the environments hosting them. Adopting a cross-platform approach, the authors identify different understandings of the memes, resulting from the interaction of users with the logics and the affordances of different digital spaces. From an epistemological point of view, the paper identifies different typologies of meme collections, resulting from the combination of distinctive ecological configurations. In turn, this conceptualization has direct implications for meme research: as the authors put it, scholars should be aware of the impact that the selection of one digital space over another may have on the quality of the meme corpus that they can extract. Thus, the identification of the most suitable environment to source memes should depend on the question(s) and the academic intent guiding the research. However, as the next section will show, meme scholars have historically preferred one-size-fits-all to nuanced approaches to meme conceptualization and data collection.

Contingent macros can somehow be considered potential macro templates: far less popular and context-bound than conventional macros, their meaning and use in context have yet to become fully crystallized. Our intent in introducing this concept is not to capture an ephemeral moment in the genesis of 'real' macros. If anything, by demonstrating how most meme templates fall under the category of contingent macros, our work aims at deconstructing the monolithic approach to the concept of macro in favor of a more nuanced, context-specific, and multidirectional understanding that best accounts for the intricate existence of these digital objects.

2.2 Meme research: a standardized approach

The ontological complexity of the meme is hardly represented in empirical research. While recent studies have acknowledged that memes as a unit of analysis has always been "murky" (Zulli and Zulli, 2020), attempts to include context-dependent conceptualizations are still scarce (Rogers and Giorgi, 2023).

As opposed to this, researchers usually adopt a clear-cut definition of the object "meme": in particular, when faced with the necessity to gather relevant data, some opted for inductive natively-emerging methods of identification. Such is the case of studies like those by de Saint Laurent et al. (2021), who sourced memes from the subreddit r/CoronavirusMemes; Moreno-Almeida (2021), who collected them from memetic pages; or MacDonald (2021), who assembled the corpus by querying for "COVID-19

memes" on a search engine. Works like these rely on user classification through "native digital objects" (Rogers, 2013) like hashtags and dedicated accounts, to collect and classify memes in their datasets.

Other studies have instead preferred deductive, criteria-based definitions to discern memes from other types of content. Giorgi (2021), following an assessment of the literature on memes, proposes to identify memes based on three features: irony, manipulation, and intertextuality. Research on memes also witnessed a rising trend in studies employing computational techniques for the automated recognition and classification of memetic instances (Miliani et al., 2020; Bucur et al., 2022; Theisen et al., 2021). Here, too, memes are identified and sorted depending on the presence of characteristics, like multimodality or recurrent layouts.

To date, scholars consider memes as such once they have reached a certain degree of diffusion and popularity (cfr. Zulli and Zulli, 2020). Memes are oftentimes associated with standardized formats with culturally consolidated interpretations. In this context, the widespread popularity and use of 'macro' memes in scholarly research deserve special attention.

The term 'macro' has a longstanding tradition within meme culture, as it is commonly employed to refer to captioned popular image-based templates with a fixed interpretation (Lankshear and Knobel, 2019). Macro memes resulting from captioning these images are tightly intertwined with specific digital environments with a strong subcultural footprint, such as 4chan and Reddit, whereby some of the first widely popular macros (e.g. Advice Animals, LOLCats, Rage Comics), surfaced and gained popularity (Phillips, 2015). It is therefore no surprise that a large body of literature on memes in the early years was centered on the analysis of these standardized formats (Vickery, 2014; Brideau and Berrett, 2014; Rintel, 2013), a trend which seems to persist to the present day (Yus, 2018; Ross and Rivers, 2019).

In our view, reducing the study of memes to macro formats appears limiting from both an ontological and epistemological perspective. First, the proliferation of memes across the web led to the emergence of a sheer variety of meme templates that cannot be labeled as 'macros' (cfr. Miltner, 2018). In this respect, less standardized formats or, as Wiggins and Bowers (2015) call them, 'emergent' memes demand equal analytical attention as more fixed formats. Empirically, there is no objective benchmark to distinguish 'macro' memes from other types of memes: most of the time, the fitness of the label appears to rest with the wisdom of the crowd or, in some cases, with geographically and culturally biased archives (e.g. the US-based *Know Your Meme* web database). Finally, the concept gives little indication on the temporality and the ephemerality of the phenomenon (Blank, 2018): in our fast-paced digital information economy, where any major event results in a daily mass-production of memes (Shifman, 2014), only a small percentage of templates rises to popularity, and even so their fame is oftentimes short-lived. In this sense, template-based studies fail to adequately capture not only the rich variety of memetic production but also completely overlook its evolution over time.

To consider the fluidity and ephemerality of memetic production we propose the term Contingent Macro. We intend Contingent Macros as short-lived memetic layouts that might be related to current events or issues that quickly gain a clear, monosemic, interpretation by users. Contingent Macros differ from more standardized layouts due to their social and cultural embeddedness, which concurs to limit their widespread adoption and leads to their rapid fall into disuse.

To date, existing research has barely begun to consider the memetic phenomenon in its fluid diachronic perspective (see Smith and Copland, 2021). The present work seeks to contribute to this debate by analyzing the production of memes connected to a highly mediatized event, the 2019 Italian government crisis, observed in its unfolding. In doing so, we aim to capture the fluidity and ephemerality of memetic production and the popularization of templates.

10.33621/jdsr.v6i1.202

3. Methodology

To conduct our research, we have analyzed a dataset of digital data using a combination of automated techniques and qualitative content analysis. In the following, we illustrate how Contingent Macros can be collected and analyzed, by drawing on the case of the 2019 Italian government crisis. After illustrating our data collection process, we focus on how we identified and analyzed the Contingent Macros. While detailing the steps leading to our results, we offer insights on how such an analysis can be applied to other contexts, and how Contingent Macros interact with the broader ecology of memes surrounding a digital conversation.

3.1 Identifying a case: the 2019 Italian government crisis

The government crisis refers to the political events taking place in August and September 2019 in Italy. The crisis sprouted from the revocation of political support to the cabinet - led by Giuseppe Conte - by the Lega party and its leader, Matteo Salvini, on the 8th of August. This led to the disruption of the alliance on which the government was formed, between Lega and Movimento 5 Stelle, led by Luigi Di Maio. On the 20th of August Conte resigned from its post, subsequently starting the consultations by then-President Sergio Mattarella to form a new cabinet. As a result, on the 9th of September, a new government led by Conte and counting on the support of Movimento 5 Stelle and that of Partito Democratico, led by Nicola Zingaretti, took charge.

The selection of our case hinged on three main considerations: time, production, and knowledge. These criteria are aimed at providing a case that can be fruitfully analyzed using a combination of qualitative and quantitative techniques. Our case, the government crisis, responded to all three criteria: it is an event unfolding during a limited *time*, allowing us to fully follow the memetic production surrounding it; it has been covered by social and mainstream media, which contributed to a consistent *production* of memes during such a time frame. Finally, it is a public and popular event: this provides *knowledge* fuelling the bottom-up and distributed construction of a cultural context through memes.

3.2 Field and data collection

Despite the fragmentation of memes in many formats, including audio, videos, and texts, here we chose to focus our attention on static images, still consideredthe most popular format associated with memes (Ross and Rivers, 2017). Following this consideration, we focused on a fitting field (Airoldi, 2018; Caliandro, 2018): Instagram, as users habitually use the platform to comment on major news events (Al Nashmi, 2018), such as a political crisis. Following a brief exploratory analysis using a snowball sampling of hashtags, we collected data indexed through #crisidigoverno (government crisis) based on the digital methods paradigm (Caliandro and Gandini, 2016). Aside from indexing the most substantial production among the hashtags tested, we focused on the identification of a marker that is language-specific and neutral (i.e., not slanted or polarizing).

The dataset has been assembled using an *ad-hoc* Python script. Despite being contested and opposed by platforms (Bruns, 2019), scraping as an approach to data collection is necessary for a post-API research, oftentimes representing the only viable option to access data. Scholars advocating for this practice also maintain that through scraping, researchers are encouraged to critically reflect on platforms' infrastructures and gatekeeping policies (Venturini and Rogers, 2019).

The starting dataset features a total of 5.686 images. Of those, as will be shown, 1.269 have been manually identified as memes and analyzed through content analysis. The time frame selected ranges from the 8th of August 2019 to the 6th of September 2019, identified by the coverage of the crisis by external sources such as mainstream media, marking the boundaries of the government crisis. Additionally, this has been triangulated with the sheer daily occurrences in our dataset. Notably, data was

collected a month after the end of the political crisis, to avoid relevant fluctuations in metadata such as comments and likes.

It is relevant to consider the specificities of the platform(s) from which data is collected, both at a methodological and ontological level. In our case, we attempted to consider the socio-technical characteristics of the chosen platform, and the unique possibilities of action those can engender (Marres, 2017). We thus considered Instagram due to its capabilities of structuring political movements and providing commentaries on current events through visual language (Al Nashmi, 2018). However, some platforms might warrant more focus on how broader platform dynamics can affect the distribution and creation of content (Zulli and Zulli, 2020), or on different understandings of memes, such as textual-based memes, and how these are translated at the junction of platform dynamics and culture (Tuters and Hagen, 2020).

3.3 Identifying and exploring memes: content and visual analysis

Following broader data collection, we needed to extract memes from our complete dataset. To do so we started with a clear-cut definition, understanding visual memes as digital artifacts, often consisting of a combination of varying degrees of visual and written content, and focusing on reinterpretation and intertextual references (see Giorgi, 2021; Chagas et al., 2019). Such a definition mirrors the centrality of creative elaboration and intertextuality to the identification of memes (Shifman, 2013; Laineste and Voolaid, 2016). Also, it purposefully sidesteps the role of macros in determining the memetic nature of images and allows us to consider new, emerging and fast-lived configurations: Contingent Macros. From an empirical point of view, memes have been identified as static images featuring signs of manipulation (i.e. captioned text and/or other visual collages). Figures 1 and 2 show, respectively, an example of a post that we identified as a meme and a post that was not considered a meme. Our data collection procedure featured hashtags as an entry point, thus already acting as a filter; different cases, fields, or formats, might require additional work to restrict considered content to the phenomenon considered.

Figure 1.

Example of meme

Figure 2.

Example of non-memetic content

Following this definition, memes have been extracted from the dataset through manual content analysis. Before doing so manually, we attempted to isolate memes using automated approaches based on image similarity (e.g., Miliani et al., 2020). However, results were limited due to the similarity between general images and Contingent Macros: since in this case, new macros sprouted from iconic images, automated clustering struggled to separate newly emerging layouts and the set of images that propelled it, which widely circulated in more traditional (i.e., non-memetic) formats and media outlets. Conversely, the adoption of automated categorizations based on external repositories has been limited as well, as those often rely on established templates and formats (Rogers and Giorgi, 2023). However, different cases might be able to rely more strongly on automated meme detection at this stage.

These downfalls and the limited size of our dataset led us to adopt a more hands-on approach. The content analysis we performed follows the Ethnographic Content Analysis paradigm (Altheide, 1987; Caliandro and Gandini, 2016), which rejects the idea of a fixed, *a priori* defined codebook in favor of a more flexible approach, where categories and values emerge deductively from data and the context of the study. This allowed us to maintain a certain degree of flexibility in what we considered a meme, embedding some context-specific reflections that might have escaped standardized categorizations. Notably, different cases might have more to gain by incorporating automated approaches to detect memes, as is the case for textual memes (Tuters and Hagen, 2020) or aptly segmented fields (such as #okboomer, see Zeng and Abidin, 2021).

The final codebook consisted of the following categories:

1. *Macro* refers to the relation of the meme templates to widespread, conventionalized formats. They were identified relying on both the authors' meme literacy and their presence on online databases like Know Your Meme and Memebase.
2. *Manipulation* entails the degree of visual modification of images. We considered as instances of manipulation the presence of text lines and certain types of visual digital alteration of the images, i.e. collages and montages.
3. *Actors*: the political actors portrayed in the pictures. Including politicians, relevant related figures, and political parties, and is distinguished between a visual level (pictures, logos, representations) and a textual level (the name is mentioned in the text).

The codebook focused on categories that allowed the separation of memetic and non-memetic instances of content, as well as to contribute to the analysis of narratives.

After manually obtaining a dataset of memes, we turned to automated visual analysis. The goal was to identify recurrent formats of memes within our dataset, with regard to the presence of macro and Contingent Macro templates. To conduct this analysis, we relied on the Python library PixPlot, developed by the Yale Digital Humanities Lab, which creates visual maps of images, clusterized based on pixel similarity (Duhaime, 2021). After identifying memetic instances in our dataset, we explored the resulting dataset with PixPlot, to identify clusters of similarly looking memes and evaluating the presence of standardized macros vis-a-vis other, newly emerged yet pervasive, templates. To distinguish standardized macros from other templates, we integrated the automated sorting with a qualitative exploration of the clusters to identify popular and prolific templates emerging from the memetic production around the event. To this end, we introduced another variable to our analysis: time. This allowed us to visualize the rise and fall of standardized formats during the event, empowering a qualitative analysis of macros and linking it to the unfolding of the issue.

3.4 Analyzing narratives

At this step, we have identified all memes included in our dataset using a combination of manual and automated analysis. This includes memes that leverage on established or rising formats (standardized and Contingent Macros), as well as memes that have not been identified as belonging to any particular cluster. Subsequently, memes have been analyzed qualitatively using insights coming from the content analysis,

to unveil the narratives connected to the government crisis as well as their development through time. To this end, we divided our datasets into several sub-events, based on a combination of inductive reasoning (i.e. occurrences per day, see Figure 3) and external sources, such as media coverage.

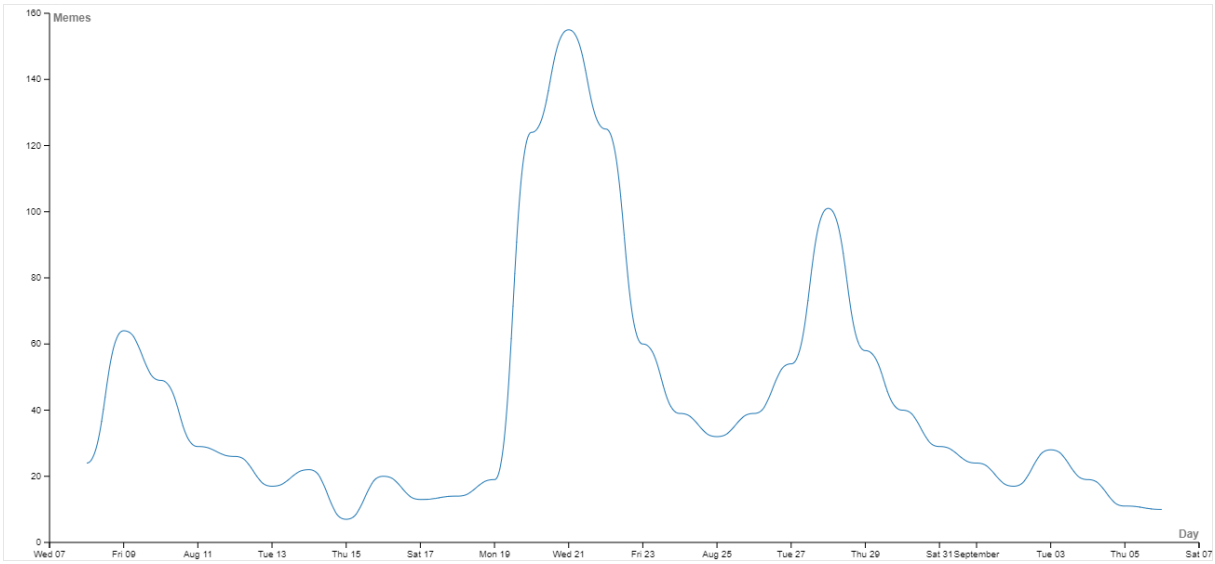

Figure 3.

Memetic occurrences in the timeframe

This led us to four major sub-events: (1) the beginning of the crisis, peaking on the 9th of August with the announcement of a vote of no confidence against Conte's cabinet; (2) the 21st of August: the beginning of consultations involving the political parties and the President, Sergio Mattarella, to find a new majority in the Chambers. This followed a harsh resignation speech held by the then Prime Minister Giuseppe Conte in the Senate, criticizing Matteo Salvini; (3) 28th of August: Giuseppe Conte is called by the President to form a new government: similarly to the first government, he takes on a *super partes* role, mediating between two different parties: 5 Star Movement and Democratic Party. As customary, he accepted with reserve; (4) 3rd of September: the 5SM holds a vote on his direct democracy platform, Rousseau; the voting members of the party will bless the new government, which will be sworn in two days later, on the 5th of September, ending the 2019 Italian government crisis. Time ranges and number of occurrences per sub-event are visible in Table 1. This division guided us analytically but did not compartmentalize our analysis. Rather, it allowed us to consider the narrative at large while incorporating specific events into a broader negotiation of meaning. This is particularly relevant in this case, as discrete sub-events are, in this case, the driving force behind the rise of contingent macros.

Table 1.

Subsets, occurrences (memes), peaks

Sub-event	Peak day	Sub-event begins	Sub-event ends	n
1	8th August	9th August	11th August	166

2	21th August	19th August	23th August	483
3	28th August	26th August	30th August	292
4	3rd September	1st September	5th September	99

4. Findings

Before delving deeper into the analysis of Contingent Macros, it is worth paying attention to the proportion of memes in the dataset. As shown in Figure 4, memes are 22% of the items considered: 1.269 memes out of 5.686 images. Of the remaining images not included in our final meme dataset, some (31%) were not related to the government crisis at all, most likely gaining visibility by exploiting a popular hashtag; a minor proportion of images (22%) referred to the crisis using media posts, charts, opinions and, in general, without deploying memes. As a preliminary consideration, then, most of the visual material related to the government crisis in our sample does not frame the issue using memes.

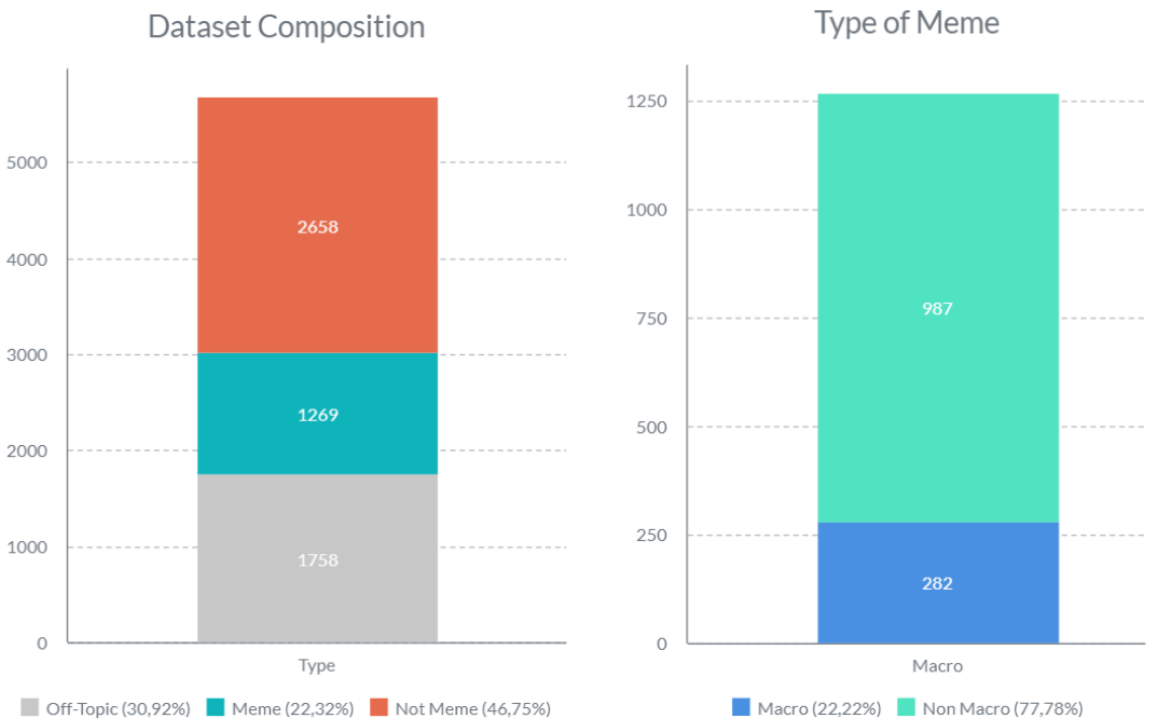

Figure 4.

The composition of the dataset, type of image and type of meme respectively

4.1 Memes temporality and ephemerality: standard and Contingent Macros

The visualization obtained with Pixplot (Figure 5) allows us to draw some inferences regarding the development and the temporality of the memetic production surrounding the political crisis. The vast central area of the graph, including the majority of memes of our dataset, is composed of pictures with

captions and/or digitally edited images. The templates are not amenable to established macros, certified both inductively, as they are not clustered based on similarity, and qualitatively.

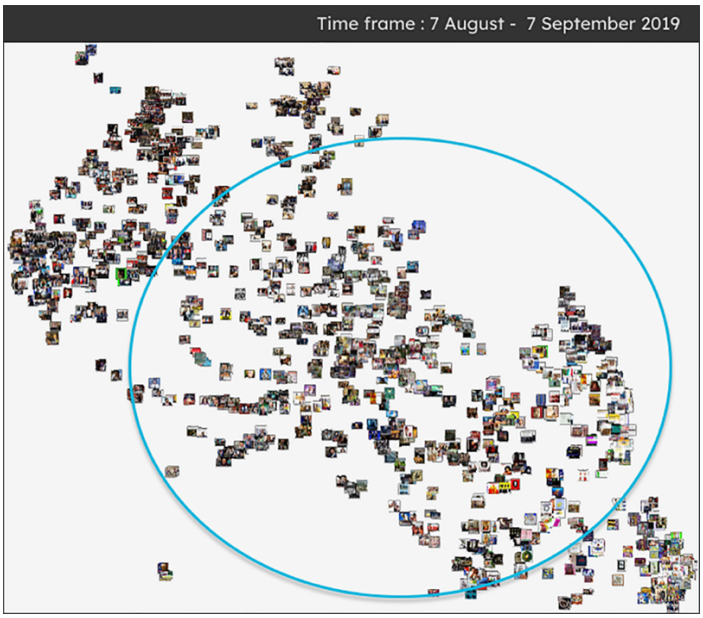

Figure 5.

Visual map of the memes outputted by Pixplot, focusing on unclustered memes

These memes are usually assembled by creatively editing the faces of political leaders on pictures taken from internationally popular cultural texts. Such is the case of the meme in Figure 6, which depicts Lega leader Salvini on the throne of the TV series *Game of Thrones*. As we can see, the caption contains a pun playing on the similarity of the English word 'throne' and the Italian *'poltrone'* (seats), hinting at the political game enacted by politicians to preserve their seat at the government. Still about this group, we find several memes specifically referencing Italian popular culture: in Figure 7, for example, the face of Italian President Sergio Mattarella is edited on the body of Italian actor Giovanni of the comic trio 'Aldo, Giovanni e Giacomo'. The frame used for the meme is taken from a movie scene where one of the characters is taken hostage by a criminal and tries to escape by writing "help" on his hands. The ironic message is here created by drawing a parallelism with Sergio Mattarella, serving President, unwillingly caught in the middle of the government crisis.

Figure 6.

Example of unclustered meme

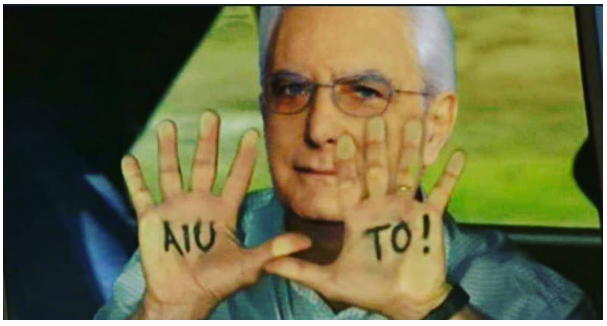

Figure 7.

Example of unclustered meme

After considering unclustered memes, we moved to the three well-defined and identifiable groups of memes. We considered clusters based on image similarity, represented by spatiality, and their distribution over time. This led us to three main clusters (see Figure 8), two of which we identified as Contingent Macros and one composed of all memes sharing the same visual style (cartoon-based templates).

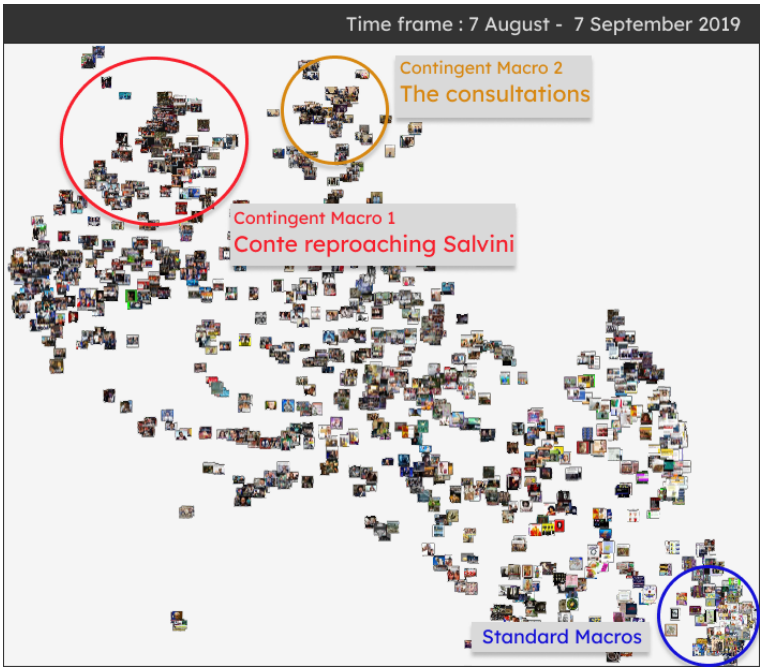

Figure 8.

Visual map of the memes, focus on clusters of Contingent Macros and standard macros

3.3.1 Contingent Macros

PixPlot is useful to identify what we have defined as Contingent Macros: memes employing templates related to current events (e.g. a picture depicting, narrating or derived from it) that quickly gained a clear, monosemic, interpretation by users, and were reappropriated as they spread virally. In the visualization created through PixPlot, two main clusters related to distinctive Contingent Macros can be recognized:

Contingent Macro 1 - Conte Reproaching Salvini

The first Contingent Macro, in the red circle, is labeled *Conte Reaproaching Salvini* (Figure 9). The template stems from a precise moment during Conte's speech before the Senate on the 20th of August, in which Conte harshly criticized Salvini and the political stance of his party. Starting from this date, the frame began circulating as a meme template, reaching its productivity peak in the following days. It is worth noting that the productivity of this macro extinguished around ten days later: starting from August 30, no new occurrences of the meme were produced, meaning that the template ceased to be prolific around that time. While several variations exist, the most employed frame depicts the Prime Minister standing and talking while holding his notes, resting one hand on Salvini's shoulder, while he reacts to Conte's speech with a thoughtful side glance.

The meme is used to represent the mismatch of power or authority between Conte and Salvini, with the former having the upper hand and Salvini in the role of the underdog. The analyzed versions of this meme also feature elements taken from pop culture (e.g. Pokémon, Star Wars), shared subcultural knowledge (e.g. memes from specific university students' pages), and dialectal jokes. At a certain point,

we note that the macro transcends the contextual political event and starts to be used to represent power mismatches in a variety of contexts: in this macro Conte gains the high ground, drawing from the memetically evergreen Star Wars, or becomes the professor about to ask a question to an unprepared student (Figure 10).

Figure 9.

Close-up of the cluster 'Conte reproaching Salvini'

Figure 10.

Example of Conte reproaching Salvini

Contingent Macro 2 - The Consultations

The second Contingent Macro that we found is *The Consultations* (circled in orange). The frame used by these memes depicts Sergio Mattarella's oversight of the consultations to form the new government. Sitting before him, a variety of weird personas contribute to the construction of the humoristic undertone: among them, Italian TV presenter Maria de Filippi, the comedian Antonio Albanese, and The Teletubbies (Figure 12). The meme wants to convey the idea that, due to the unexpected and rushed nature of the consultations, Mattarella is forced to take into consideration the most improbable candidates. As the consultations started on the 21st of August (see division in sub-events in the methodological section), memes using this template started to spread around the same time as those using the *Conte Reaproaching Salvini* template. This Contingent Macro appears to be slightly more durable than the previous one, as memes using the template are still found up until the end of the dataset.

Figure 11.

Close-up of the cluster 'The Consultations'

Figure 12.

Example of Consultations macro

3.3.2 Cartoon-based Macros

The fourth and last identifiable cluster circled in blue in Figure 8, includes memes using cartoon-based templates. The majority of templates contained in this cluster, which counts a total of 94 memes, are amenable to the definition of established macros. We considered as standard or established macros the templates that are cataloged in the web archive *Know Your Meme* (Rogers and Giorgi, 2023). Among the most popular meme characters, we find templates connected to SpongeBob SquarePants, Scooby-Doo, and various other contexts (Figure 13). This concurs to underline the iterative nature of the process: clusters need qualitative validation, considering the contexts in which the conversation is nested. In this case, the explaining power of the cluster is limited, but it concurs to underline how clustering by image similarity can assist in identifying broader clusters, in this case based on format.

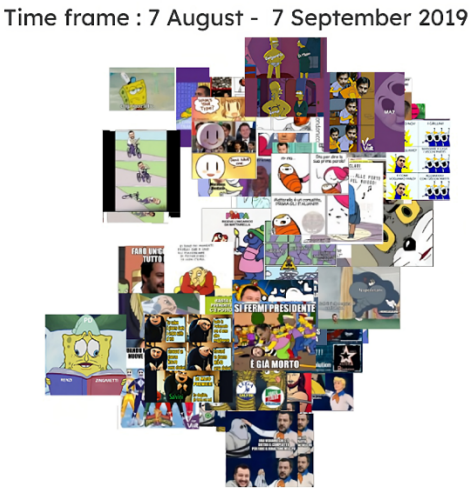

Figure 13.

Close-up of the cluster with cartoon-based macros

4.1 Memes temporality and ephemerality: standard and Contingent Macros

The insights from the content and visual analysis contribute to our understanding of how memes have been used to comment on the event. We found that, if observed in its unfolding through time, memes create a narrative that employs metaphors to represent power relations, political alliances, rivalries, and positioning among the political spectrum. Also, the narrative surrounding the government crisis shifts over time: while the political actors depicted remain somewhat constant, their framing changes significantly.

At the onset of the crisis, the pervasive narrative is that of a changing bond between the two co-governing leaders, Di Maio and Salvini. In this context, the working alliance connecting the two politicians is transformed into a romantic one, where the possible double-meaning of words like “trust” and “betrayal” are played upon to apply to the semantic domain of personal relationships. Both leaders are thus represented as a couple in a troubled relationship, trying to solve their quarrels in a setting derived from a reality show, *Temptation Island* (Figure 14). While the aforementioned memes focus mostly on possible reconciliation between the parts, that is not always the case; the government is also perceived as already over, despite being only hours into a potential crisis: Di Maio and Salvini are depicted with a popular cartoon outline (“That’s all folks”) signaling the end of their (mis)adventures (Figure 15).

Figure 14.
Example of meme portraying Salvini and Di Maio as a couple

Figure 15.
Example of meme portraying Salvini and Di Maio as a comic duo

Matteo Salvini is portrayed as a dominant figure, especially when compared to the co-governing party and its leader, Luigi Di Maio. This predominance is, however, bound to change coinciding with Conte's harsh speech in front of the Senate on the 20th of August: from here on his position intertwines with that of Giuseppe Conte to form the narration of a troubled Salvini, in a subordinated position when compared to that of the then Prime Minister. The discourse depicting Salvini as troubled is perhaps aptly summarized by the numerous memes sprouted by the already presented Contingent Macro *Conte Reproaching Salvini*, which emerges and gains a foothold during this phase. As seen, the narrative conveyed is that of a clash going on between the two politicians, in which Conte is getting the upper hand: in this context, we find memes in which the Prime Minister is represented as the good facing the villain, like the one with Obi-Wan's quote to Anakin: "I have the higher ground" (Figure 17). The relationship between Salvini and Di Maio changes as well, as depicted in Figure 18, where they are represented as a couple - as widely shown previously - but their power relation is inverted, with Salvini shown as trying to get closer to a cold and rejective Di Maio.

Figure 17.

Example of meme using the contingent macro 'Conte reproaching Salvini'

Figure 18.

Example of meme portraying Salvini and Di Maio as a couple

On the 21st of August, the consultations start: President Sergio Mattarella is the absolute protagonist of this phase, with the emergence of the Contingent Macro *The Consultations*. The memes relying on this layout introduce the figure of Mattarella into the debate, contextualizing it into the broader context of the political crisis; the political negotiations here are understood as fragmented and complex, which is visually depicted by the President having talks with a variety of improbable characters (Figure 11, above).

Finally, Conte is called to form a new government, and the final coalition will be between the 5 Star Movement and the Democratic Party. Here, the narrative of a defeated Salvini is reiterated and extended, as he is represented in a subordinated position not only to Di Maio but to Conte and Mattarella as well. In one instance Conte whispers to his ear a quote from the popular TV show *Game of Thrones* (Figure 19).

Figure 19.

Example of meme portraying Salvini in a subordinated position

Figure 20.

Example of meme portraying Conte in a subordinated position

While both Conte and Salvini look content, the quote is a widely diffused meme template that is rather unequivocal: those who whisper such a quote - Conte in this case - have just gained a sound victory against their rivals - Salvini. Other memes focus on the newly formed coalition, highlighting the uneven power among the political actors involved. Interestingly, Zingaretti and Di Maio are represented as a couple of lovers, in which Di Maio takes the female role. Conte, on the other hand, seems to submit to the newfound government, as he is depicted carrying the cart on which Zingaretti and Di Maio take solace - yet, another possible interpretation may perceive Conte as the one who is doing all the work. Nonetheless, it is relevant to notice how Conte's depiction shifts from one of power to one of submission as Salvini is replaced by Zingaretti (Figure 20).

4. Conclusions

To date, research on memetic visual cultures has given particular weight to macro formats, often ontologically conflating standardized layouts and memes as a whole (Milner 2016; Grundlingh 2018; Mazzoleni e Bracciale 2019; Vásquez and Aslan, 2021). As we demonstrate, the concept of Contingent Macro crucially differs from long-standing traditional macros: Contingent Macros can emerge in the context of an event and abruptly disappear after a, more or less brief, moment of glory. While we believe most Contingent Macros are short-lived, it is not excluded that some of them may resurface the memetic

scene in the future and eventually rise to the status of established macro templates. However, we argue, their popularization ultimately does not matter. The conceptual relevance of the Contingent Macro is that it allows us to analytically consider formats that cannot break through and become popular enough to achieve widespread diffusion but, regardless, provide a rich and often untapped source of data to analyze issues, events, and platform dynamics.

By following how the 2019 Italian government crisis was framed through memes, we have observed how meme production is skewed toward the proliferation of new layouts, which significantly outnumber established macros. To account for this, we introduced the notion of Contingent Macro, which refers to layouts that emerge in response to socially, politically, or culturally relevant events (e.g. protests, electoral campaigns, social movements, and so on), quickly rise in popularity, spawn a sheer variety of derivatives, and then fall into disuse. Aside from commenting on the event specifically, their framing power may transcend their contingency, as they are appropriated and manipulated by users to fit with theircultural context.

In our case, two different events - Conte's Speech before the Senate and the beginning of the consultations to form a new coalition - generated two different short-lived macros: *Conte Reproaching Salvini* and *The Consultations*. The templates are built by taking and creatively remixing a specific frame from the events, which was originally spread by traditional media outlets, such as television broadcasts or newspapers. Through our diachronic exploration, we demonstrated that these macros quickly gained a shared univocal interpretation – e.g. a visual depiction of power mismatch – and experienced a viral and explosive popularity in the days or weeks following the triggering event. During this period, *Conte Reproaching Salvini* was also employed to frame events outside of the political sphere, while *The Consultations* never became a frame for other events. Finally, our work showed that these Contingent Macros extinguished their creative potential in a short time and just as quickly faded to oblivion.

Our work has several ontological and epistemological implications for meme culture and its study. First, the notion of Contingent Macro is a useful heuristic to delve deeper into the nuances of meme as a stratified and fluid cultural object. At a broader level, this enables a more in-depth exploration of the phenomenon of meme standardization and its relevance to the definition of memes. While templatability is an important asset of meme theory (Rintel, 2013; Lou, 2017; Dancigyer and Vandelanotte, 2017), our study deconstructs the previously clear-cut-idea of meme (and template) standardization tracing its evolving and multidirectional path. In doing so, we contribute to the already established argument that memes are but one realization of a spectrum of digital objects, together with viral content and spreadable media (Shifman, 2014; Jenkins et al., 2013). In all, the notion of Contingent Macro provides more analytical and contextual depth to the concept of 'emergent meme' proposed by Wiggins and Bower (2014): with this term, the authors refer to instances of culture jamming and altered (*aka* remixed) digital content, which – unlike memes – is "not iterated and remixed further as separate contributions" (p. 1898). Our intention here is neither to undermine the validity of prior categorizations nor to add yet another label to already existing taxonomies. Rather, our contribution is empirical: through the analytical process and the heuristic of Contingent Macro, the study provides empirical insights into the genesis and evolution of memes, considering the broader digital and cultural environment of meme production and circulation.

Our study has methodological implications as well. Firstly, we want to provide meme scholars with a toolkit to identify and analyze memes in datasets connected to mediatized events. Traditional approaches to meme study are often unable to capture the hyper-memetic logic fuelling our contemporary society (Shifman, 2014): in particular, we believe that macro-based research is oftentimes too tied to subcultural, niche digital environments to adequately account for a society where memes are pervasive and take a multitude of forms. We argue that the concept of meme goes beyond conventionalized templates; its popularity emerges from the combination of several aspects, including the contingency (the nature of the triggering event), the technical and the cultural ecology of the platforms (e.g. affordances, user base demographics) and so on. Given this, we maintain that a methodologically (and culturally) sound approach to meme research should attempt to embrace the complexity of the memetic phenomenon,

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instead of relying on ready-made concepts like that of macro, contextually challenging the methodological hegemony of culturally situated repositories in favor of more inductive approaches. Moreover, although comprehensive definitions of memes are found, there are hardly any indications of how to translate them into empirical research. Our work provides replicable methodological steps for meme research, involving: (1) a theoretically grounded analytical definition of memes, to identify memetic instances in miscellaneous datasets; (2) a part of automatic-driven visual analysis of the memetic formats, which provides insights on recurring templates and their evolution over time; this was complemented by (3) a phase of qualitative analysis of content, which integrates the meme instances into a coherent narrative flows, which runs parallel to the case considered.. The combination of automated and qualitative methodological approaches allows less formalized memetic instances, such as contingent macros, to emerge deductively from the dataset.

Finally, we want to address several structural and methodological limitations, which may have variously affected the present work. While it was necessary to select a case study to illustrate our methodological process, we believe it may have had an impact on the generalizability of the results, especially given the specificity of our case. As memes are cultural objects and, thus, deeply embedded into a social, cultural, and, in this case, political context, further research might want to test such an approach on a variety of cases. This extends to how we defined memes as well. We underlined the importance of specific, case-tailored definitions of memes. However, in doing so, some details are necessarily lost: while our work focuses on static images, which remain the most pervasive format, video memes are also studied (Shifman, 2012) and have come back to the scene thanks to TikTok (Zulli and Zulli, 2020). Similarly, broader definitions extend to include formats such as written text (Tuters and Hagen, 2020). This translates and extends to our choice of platform as well. Instagram affected the typology of memes we retrieved, both in format and content; more comprehensive approaches could aim at cross-platform or transmedial approaches.

As is the case for the evolving ontological boundaries of memes, the concept of contingent macro advances the conversation on the methodological pitfalls of studying memes and macros. However, focusing on visual content heavily affected the methodological steps detailed in the article. While the conceptual definition of contingent macro is flexible enough to be applied to a variety of objects and contexts, formats can heavily impact and stretch the conceptual boundaries of what a contingent macro can be. The contingent macro we identified in our case sprouted from an image that originally circulated on traditional media. Other memetic formats, such as audio or video, might instead draw less from easily identifiable similarities, and more on abstract or harder-to-detect cultural patterns. While we clustered images using PixPlot, for example, grouping the same type of dance on TikTok through computational means is considerably harder; this might be however mitigated by platform affordances such as the indexing of content through audio (Vizcaíno-Verdú and Abidin, 2022).

The complexities of memetic content require consideration of a combination of social and cultural contexts, platform affordances, vernaculars, and ecologies, as well as physical and digital circulations. This requires flexible definitions and methodological steps that, as in this case, are deeply intertwined with one another and strongly benefit from comprehensive approaches that can hold both dimensions together.

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Quali-quanti visual methods and political bots

A cross-platform study of pro- & anti-bolsobots

Janna Joceli Omena[1,2], Thais Lobo[3], Giulia Tucci[4], Elias Bitencourt[5], Emillie de Keulenaar[6], Francisco W. Kerche[7], Jason Chao[8], Marius Liedtke[9], Mengying Li[10], Maria Luiza Paschoal[11], and Ilya Lavrov[6,12]

[1] University of Warwick, United Kingdom.
[2] Universidade Nova de Lisboa, Portugal.
[3] King's College London, United Kingdom.
[4] Federal University of Rio de Janeiro, Brazil.
[5] Universidade do Estado da Bahia, Brazil.
[6] University of Groningen, Netherlands.
[7] University of São Paulo, Brazil.
[8] Universität Siegen, Germany.
[9] University of Salzburg, Austria.
[10] Fudan University, China.
[11] University of Trento, Italy.
[12] University College Dublin, Ireland.

✉ janna-joceli.omena@warwick.ac.uk

Abstract

Computational social science research on automated social media accounts, colloquially dubbed "bots", has tended to rely on binary verification methods to detect bot operations on social media. Typically focused on textual data from Twitter (now rebranded as "X"), these inference-based methods are prone to finding false positives and failing to understand the subtler ways in which bots operate over time, through visual content and in particular contexts. This research brings methodological contributions to such studies, focusing on what it calls "bolsobots" in Brazilian social media. Named after former Brazilian President Jair Bolsonaro, the *bolsobots* refer to the extensive and skilful usage of partial or fully automated accounts by marketing teams, hackers, activists or campaign supporters. These accounts leverage online political culture to sway public opinion for or against public policies, opposition figures, or Bolsonaro himself. Drawing on empirical case studies, this paper implements quali-quanti visual methods to operationalise specific techniques for interpreting bot-associated image collections and textual content across Instagram, TikTok and Twitter/X. To unveil the modus operandi of *bolsobots*, we map the networks of users they follow ("following networks"), explore the visual-textual content they post, and observe the strategies they deploy to adapt to platform content moderation. Such analyses tackle methodological

challenges inherent in bot studies by employing three key strategies: 1) designing context-sensitive queries and curating datasets with platforms' interfaces and search engines to mitigate the limitations of bot scoring detectors, 2) engaging qualitatively with data visualisations to understand the vernaculars of bots, and 3) adopting a non-binary analysis framework that contextualises bots within their socio-technical environments. By acknowledging the intricate interplay between bots, user and platform cultures, this paper contributes to method innovation on bot studies and emerging quali-quanti visual methods literature.

Keywords: Digital methods, political bots, coordinated inauthentic behaviour, cross-platform, quali-quanti methods, visual methodologies

1. Introduction

This article addresses the methodological challenges of understanding the "*Bolsobots*" phenomenon, an extensive and skilful usage of automated accounts that swarm social media environments to successfully sway public opinion (Messenberg 2019; Pereira 2022). This phenomenon has been engendered by the convergence of a polarised political landscape and a unique social media culture, which features extensive online engagement, multi-platform usage, influencer culture, and paid traffic reachability. *Bolsobots*, as defined here, are social media accounts — partially or fully automated — that promote (or demote) Jair Bolsonaro and his political agenda, allies and opponents, on behalf of specialised marketing teams, hackers/activists, campaign supporters or paid workers.

Despite efforts to curb their agency in the aftermath of coordinated disinformation campaigns in the 2018 general elections, reports show that *bolsobots* continue to play an increasingly blurred yet omniscient role in the Brazilian online infospheres (Ribeiro and Lobato 2022). If, on the one hand, the boundaries between "bots" and "authentic users" become ambiguous in Brazil's divisive online political militantism; on the other, overlays between automation, authenticity and partisanship pose methodological challenges to any research seeking to identity, follow, profile, measure and, most importantly, *account* for the practices and influence of bots.

Detection techniques used to capture bots and bot networks most commonly hinge on computational methods that look for suspicious account patterns. They are predominantly developed for text-based datasets extracted through Twitter's — now rebranded "X" — increasingly inaccessible APIs.[1] In spite of their widespread usage, recent debates point out that quantitative and textual analysis of profile metrics cannot capture click farms and other bot-coordinated actions increasingly attuned to particular political debates, platform moderation and or emerging social media platforms, such as TikTok.

In response, we argue that visual and other methods can provide a nuanced perspective that quantitative analysis alone might not capture. They provide means that not only deal with the imagery of increasingly visually-driven social media platforms but, more importantly, make sense of the relations between visual and textual content. Crucial in implementing visual methods is the role of visual models (Colombo, Bounegru and Gray 2023), such as network grids and image walls. These devices demand a navigational

[1] Since Elon Musk's Twitter takeover in 2022, the rebranded X has deprecated its Academic API and rendered its Standard API much more expensive and limited in data collection. The scenario in which we collected data was more permissive; the Academic API allowed the collection of 10 million Tweets per month, at no cost. At present, researchers have opted for scrapers, which sometimes suffer from X's attempts at halting violations of its Terms of Use.

procedure that considers the environment where data comes from, the capabilities of the research software in use, and how visualised data is organised, be it spreadsheets, image folders, JSON files or others. Moreover, visual methods invite researchers to reflect on the steps leading to what is represented in the visualisation, considering *what is at stake, what to interpret and what to omit*.

This research proposes qualitative-quantitative (quali-quanti) visual methods for bot detection, dataset curation and analysis from cross-platform case studies of pro- and anti- *bolsobots*. Using network, visual and textual analysis, this article discusses three methodological challenges to capture and analyse *bolsobots* across Instagram, TikTok and Twitter/X. First, we argue that list-making and dataset-building approaches can be based on bot characteristics and following networks. Second, we explore the challenge of making sense of *bolsobots* traits through quali-quanti visual methods using a navigational procedure for exploring data and image visualisations as crucial analytical tools. Third, we discuss the insights that can be derived from refraining from distinguishing bots from non-bots, opting for a non-binary perspective on what constitutes an authentic user account.

In the following sections, we revisit the literature on bot studies, formulate a critique of existing bot detection methods, and discuss how quali-quantitative methods may facilitate or innovate such approaches. Next, we introduce and operationalise bot-following network-oriented analysis of Instagram bots, and compare image profiles with account names of TikTok bots. We also present a qualitative approach for analysing Twitter bots, expanding and questioning the effectiveness of automated research practices. Finally, we reflect upon our methodological challenges and the blurred distinctions between bots and non-bots as “automated” or “authentic”.

In sum, we argue that studying bots and their visual traits demands constant “quali-quanti readings” (Venturini, Cardon, & Cointet 2015) of the relational nature of platform data and usage cultures while also paying attention to the technicity-of-the-mediums (Omena, 2021). This methodological contribution is grounded in a comprehensive empirical endeavour that tests methods iteratively, acknowledging errors and going through substantial descriptive and reflexive undertakings. Selected case studies underpin a bot methodology that integrates cross-platform, multimodal, and cultural approaches. Rather than prioritising extensive interpretations of case studies documented in previous works, this paper emphasises an in-depth discussion of the methodological underpinnings stemming from our empirical work and findings.

2. Literature Review

2.1 A retrospective of bot studies

Social or political bots are (semi)automated social media accounts that rely on web-based applications to act on their behalf while adhering to the platform’s terms of use. They can be programmed to (un)follow, like posts with specific hashtags, provide comments based on keywords, accounts or mentions, and produce or share content, offering "real engagement and users" at different quality levels. They also have been proven to manipulate public opinion, (re)direct attention, generate value, support large-scale advertising strategies, and spread (dis)information in electoral contexts (Howard, Woolley and Calo 2018; Shao et al. 2018; Murthy et al. 2016).

Scholars have employed various quantitative and qualitative methods to study social media bots and measure their impact on information flows. To detect bots, researchers utilise platform grammar and machine learning (ML) techniques, such as neural networks and vector machines, supported by classification algorithms (Akyon and Kalfaoglu 2019). In these studies, models are trained on features like number of likes and posts, following/follower ratios, account privacy settings, username patterns and the length of profile descriptions. Other methods include interviewing bot creators, ethnographic

observations, mapping bot automation and purchasing services, i.e. acquiring engagement metrics and followers to capture and study bots (Lindquist 2022; Omena et al. 2019; Assenmacher et al. 2020).

In recent years, there has been growing criticism of the limitations of predominant methodological approaches to social bot studies. The widespread reliance on bot studies and tools on Twitter/X data has been said to hinder the understanding of bot dynamics across increasingly connected social media platforms. Bot detection algorithms may also be unsuitable for capturing the influence and reach of bots in broader networks and specific datasets (Cresci et al. 2023; Gallwitz and Kreil 2022; Gorwa and Guilbeault 2020; Martini et al. 2021; Grimme, Assenmacher and Adam 2018; Rauchfleisch and Kaiser 2020).

Botometer (Yang, Ferrara and Menczer 2022) is worth scrutinising in this context. It is a ML tool that uses a combination of features to assign Twitter/X accounts a statistical likelihood of being bots or humans. One analyses account metadata (e.g., account age, number of followers), content-based features (e.g., use of hashtags, frequency of tweets), and network-based features (e.g., centrality in the Twitter/X network). However, as critics point out, such methods are not entirely accurate because, among other reasons, they fail to classify “borderline” or "hybrid" accounts that are operated by both humans and automation. Rauchfleisch and Kaiser (2020) and our study found that Botometer’s thresholds, even when used very conservatively, can return false negatives (i.e., bots being classified as humans) or false positives (i.e., humans being classified as bots). Additionally, the accuracy of Botometer may vary depending on context, as its scores are particularly imprecise in languages other than English. Most importantly, the tool's output may be difficult to interpret, as the underlying ML algorithm lacks transparency (Martini et al. 2021).

To mitigate these shortcomings, a combination of methods has been suggested. These may include manual content analysis, which examines indicative patterns of bot activity in social media posts, and network analysis, which explores coordinated efforts that involve multiple accounts (automated, semi-automated and human-operated). In this regard, Grimme, Assenmacher and Adam (2018) plead for social bot research to move away from inference-based approaches that focus on identifying individual accounts, as they may not be a necessary condition for the overarching goal of identifying harmful, strategic attacks on public opinion.

Accordingly, this paper abandons a binary perspective on what “bots” and “non-bots” are and aims instead to understand the agency and strategies of bots within the specific environments in which they act and exist. To achieve this goal, we argue that quali-quanti visual methods can offer alternative solutions to address the *modus operandi* of bots, as they enable the exploration of complex relationships and patterns in large datasets that may not be apparent with traditional bot detection methods.

2.2 A grasp of quali-quanti methods

Emerging from Science and Technology Studies, quali-quanti methods have been implemented under the Digital Sociology and Digital Methods schools of thought. These methods, coined by Venturini et. al (2015), challenge social theorists’ and practitioners’ understanding of quantification as they embrace and affirm the integration of qualitative and quantitative approaches as a whole rather than separating them (Latour et al. 2012; Venturini, Cardon and Cointet 2015). Quali-quantitative methods encompass the notion of *navigation* as a crucial practice. This involves *navigating through platform and software interfaces and data points using a provisional visualization that facilitates the analysis of individual data aspects, extending to aggregates and back* (see Latour, 2010). Consequently, these methods require tremendous effort from researchers who must, in this sense, face the challenge of "gaining in quantity without losing in quality" (Venturini, Cardon, & Cointet 2015).

Practical questions arise. How can one bridge the broader patterns that quantitative analysis analyses, with the minutest details of qualitative examination? How can method design and implementation ensure

that one captures and represents all significant aspects in between? Recent digital methods literature has provided some concrete answers to these questions, for example, network visual explorations, participatory lexicon creation to navigate big textual datasets, and visual models to make sense of image collections (Marres 2020; Venturini, Jacomy and Jensen 2021; Colombo, Bounegru and Gray 2023; Rabello et al. 2022; Moats and Borra 2018). First, one uses data visualisation as a method – not an end – to explore, describe, and analyse digital data's relational and contextual nature. Second, one implements navigational procedures for datasets while accounting for the inherent layers of technical mediation of research software. Finally, researchers are invited to engage with digital fieldwork and study the Web from a methodological standpoint, i.e. understanding platforms' grammatisation and (sub)cultures of use and how these relate with the computational media required to implement methods (Omena 2021).

This paper adopts and expands the implementation of quali-quanti methods, operationalising specific techniques for interpreting bot-associated image collections and textual content. Such methods may offer a valuable approach to bot studies to acknowledge the situational and relational contexts in which (semi)automated accounts exist. Moreover, as we argue and discuss in the next section, these methods can facilitate innovation in the ways we study and understand bots.

3. Conceptual and Analytical Framework

This section situates our proposed methodology within a conceptual framework of method-making and focuses on the challenge of understanding the *bolsobots* phenomenon and visual vernaculars. Rooted in the digital methods scholarship, this perspective emphasises that methods emerge from an iterative and thorough process of evidence testing rather than being a standalone instrument for empirical research.

3.1 Reimagining bot studies with digital methods

Aiming to inform the current state of affairs and modes of agency of *bolsobots*, the research presented here follows a cross-platform approach (i.e., Instagram, TikTok, and Twitter/X) attuned to the specificities of each platform. This approach is grounded in four principles of bot studies, reimagined through the lens of digital methods scholarship. The first principle involves analysing **bot profile characteristics**, including the use of digit patterns or similar names in usernames, the use of default platform pictures as profile images (e.g., Instagram's human silhouette or Twitter/X's "egg"), discrepancies in the following-followers ratio, the number or absence of posts, the lack of original posts, among others (see Confessore et al. 2018; Shu et al. 2020; Akyon and Kalfaoglu 2019). The characteristics of *bolsobots* are taken as an entry point to designing queries and curating bot datasets.

The second principle is that **bots follow bots**, as scientific and journalistic literature has ascertained by examining the follower-following ratio and automation market services (Akyon and Kalfaoglu 2019; Colombo and Gaetano 2020; Lindquist 2022, 2021). *Bolsobot*'s following networks are analysed to consider the socio-technical environment in which they operate, including the visual-textual content associated with them and the profiles of other actors that participate in this assemblage.

The third principle, supported by empirical evidence, suggests that **default social media image profiles are a tell-tale sign of bots**. Studies of profile images, led by one of the authors - Omena, found that these accounts can be identified by the unique identifier (ID) number of the default profile picture in its URL or by grouping profile images by colour patterns in visualisation software. For example, Instagram's default image ID is 44884218_345707102882519_2446069589734326272_n. Bots with default profile pictures are so-called *ghost accounts*, which do not require sophisticated profile presentation and operate in unobtrusive modes (Omena et al. 2019; Omena et al. 2021a,b). Finally, the fourth principle of bot studies is the premise that **bots change constantly**, adopting increasingly human-like characteristics that hinder their identification through recognisable patterns on detection algorithms.

This change is not just superficial, involving alterations on profile pictures or descriptions, but is at the core of their behaviour and communication patterns (Ruediger 2018a; Varol et al. 2017; Cresci et al. 2017; Freitas et al. 2015; Cai et al. 2022). To demonstrate the latter principle, we propose a qualitative research approach to trace changes in discourses, behaviour and strategies on Twitter/X bots identified with Botometer. In so doing, we argue that the core challenge is not just distinguishing them from "human" counterparts but tackling their continuously evolving features in response to the automation market, API changes, platform policies, social trends, and, most importantly, changing conceptions of automation.

3.2 Why study Bolsobots?

During the 2018 and 2022 presidential campaigns, pro-Bolsonaro bot accounts employed specific strategies to advance their political agenda, such as astroturfing tactics and divisive narrative propagation (Machado et al. 2018; Lobo and Carvalho 2018; Recuero, Soares and Gruzd 2020). Moreover, by tailoring messages to specific voter profiles and pretesting certain narratives, *bolsobots* networks harnessed the power of technology to mobilise support and shape public opinion; their strategic alliance with evangelical broadcasting media and emphasis on moral and nationalist issues is said to have further consolidated Bolsonaro's base (Santini, Salles and Tucci 2021). Though limited in their reach, anti-Bolsonaro bot accounts also employed tactics of spreading rumours and memes to promote their agendas. They propagated claims that Bolsonaro's knife attack was "simulated" to conceal a cancer surgery by consistently sharing a satirical article portraying him as the most (dis)honest politician in the world (Ruediger 2018b).

Brazil's distinctive social media culture provides an ideal backdrop for studying the complexities of automated political behaviour. Brazilian users exhibit high levels of online engagement, spending a monthly average of 15.6 hours on Instagram and 20.2 hours on TikTok (Kemp 2022). A multimodal digital landscape, with users accessing an average of 8.7 different platforms monthly, also provides a fertile ground for automated political communication. Additionally, the country boasts a thriving influencer marketing industry, coupled with the prevalence of automated accounts, creating an environment conducive to the widespread dissemination of political content (Grohmann et al. 2022). Lastly, the high reachability of paid traffic –Brazil ranks third globally in paid reachability on Instagram (67.4%) and TikTok (45.7%), and fourth on Twitter/X (10.8%) — highlights the potential effectiveness of bots reaching a sizable audience (Kemp 2022).

3.3 Bolsobots' visual vernaculars

From (memetic) profile pictures to (slogan) account names, *bolsobots* portray Bolsonaro in either a favourable or unfavourable light and often incorporate socio-political symbols (*Figure 1*). Despite the efforts of social media platforms to restrict their more or less coordinated activities (Euronews, 2021) – including by messaging apps such as WhatsApp and Telegram – *bolsobots* still endure and actively adapt to online cultures and platform mechanisms.

Our research identified that *bolsobots* adopt similar political symbols in profile pictures and repetitive usernames (Fig. 1) as a powerful tool for creating echo chambers that strengthen political ideas within a network (Sunstein 2017, p. 73). In their account usernames, Bolsonaro's name is coupled with slogans related to patriotism, family and religious values and the LGBT community. In profile pictures, avatars of the former president as a memetic persona sideline Brazilian flags and more extreme political stances (Omena et al. 2021a,b). The analysis of bot profile images yields insights into digital practices and unveils the concealed structures, underlying cultural codes, and prevailing meanings within these tactics and strategies (see Aiello 2021).

In light of this, it is crucial to consider the visual role of bot accounts since they employ strategies to amplify messages and ideas artificially (Ferrara et al. 2016). When Joice Hasselmann, a deputy ally-turned-foe of Bolsonaro, testified in the Senate about government actors utilising "troll farms" to promote favourable political campaigns, it raised questions about the authenticity of Bolsonaro's online popularity (Barbiéri, Calgaro and Clavery 2019; Militão and Rebello 2019). However, as we propose in this paper, it is essential to recognise that these accounts are not merely fabricated entities. As empirical evidence suggests, they may act as vessels for authentic beliefs, mimicking user behaviour characterised by hyper-partisanship and antagonism (Omena et al. 2019, 2021a).

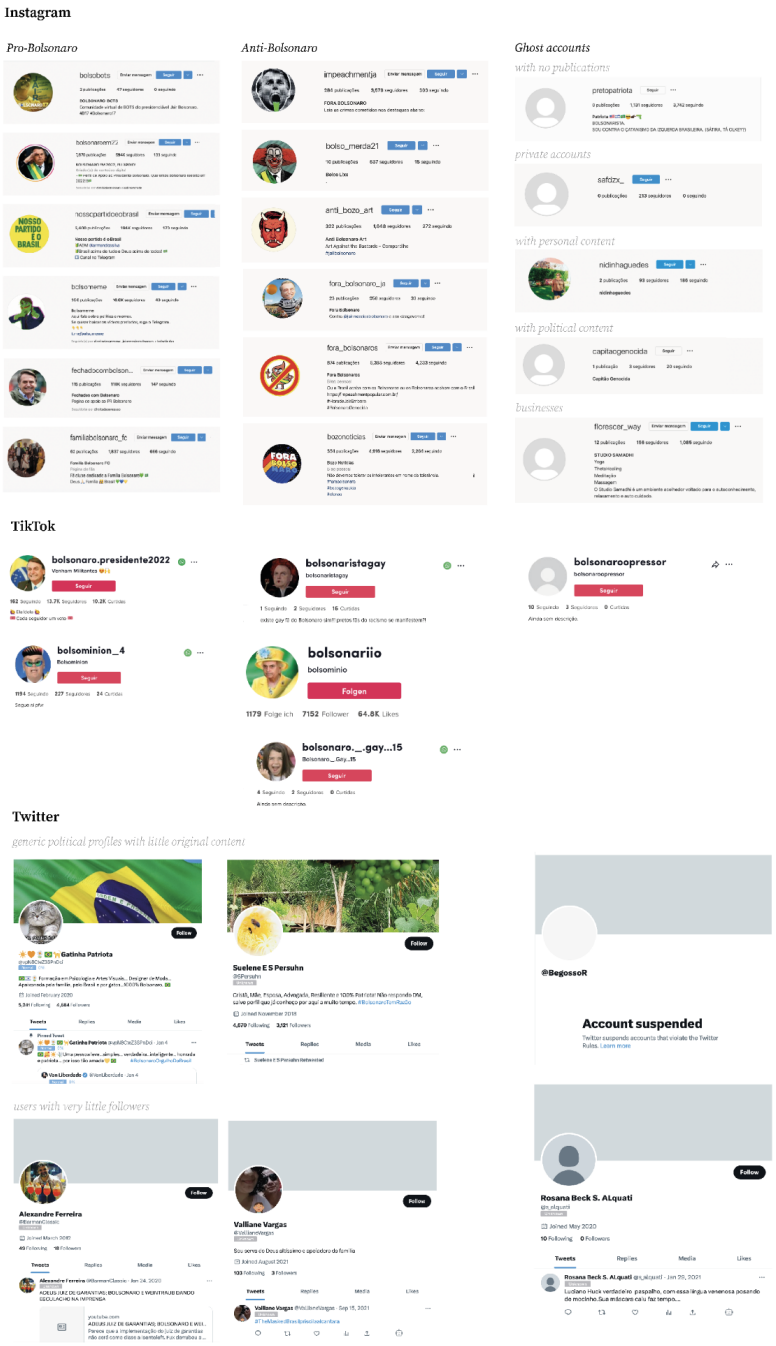

Figure 1.

What do bolsobots look like? Examples of accounts on Instagram, TikTok and Twitter/X.

4. Data and Methods

In what follows, we assume a cross-platform study to analyse data collected from various platforms, each treated as a distinct entity. While the primary study focus and query design strategies share the same topic (i.e., pro- and anti- *bolsobots*), the methods applied are tailored to accommodate the specificity of each platform, (sub)cultures of use, and distinct forms of appropriation of digital objects. The methodological protocol (*Figure 2*) shows how case studies were developed with digital methods, illustrating the process of curating, visualising and analysing cross-platform *bolsobots* datasets.[2] The protocol promotes transparent data practices by appreciating the complexity of implementing methods, i.e. the combination of various software and technical practices.

The datasets were compiled with a two-step process involving qualitative and quantitative data collection phases. We employed an active, iterative, and interventionist method in the first step when designing cross-platform queries. The query design was informed by background knowledge of the Brazilian socio-political landscape and digital culture, including bot social cues, platform use, and technological grammar. This process involved active engagement in trying and testing different keywords in each platform to identify meaningful keywords and iteratively incorporate new terms based on a platform's recommended list of existing accounts.

On Instagram, we searched for underspecified pro-Bolsonaro and specified anti-Bolsonaro keywords to return likely bot accounts (see Figure 2). Leveraging preliminary findings (Omena et al. 2021a), we tailored specific query categories on TikTok based on their resonance in the platform. We made a final selection of "seed" bot accounts by verifying bot profile characteristics. For Twitter/X, we collected tweets using a list of pro-Bolsonaro hashtags as queries from January 2019 to July 2022, using the (now defunct) Twitter/X Academic API v. 2. This list contained the same queries as those used on TikTok and Instagram.

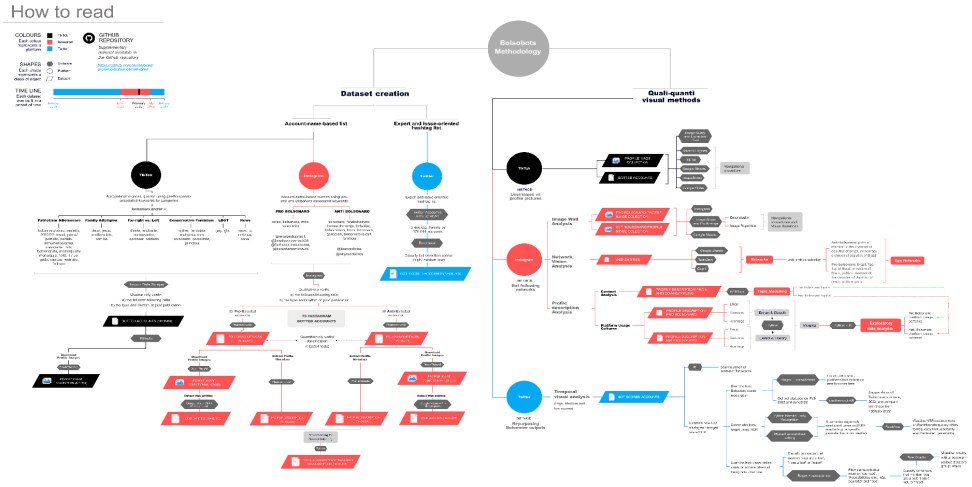

Figure 2

Methodological protocol for capturing, visualising and analysing political bots.[3]

[2] Data and complementary material are available at the project's GitHub repository. https://github.com/jannajoceli/profiling-bolsobot-networks
[3] For optimal reading and navigation, access the high-resolution version available at the link: https://github.com/jannajoceli/profiling-bolsobot-networks/blob/main/data_viz/Protocolo_full.pdf

The second step in the process of dataset building proceeded as follows. The datasets include only publicly available information and no sensitive information about individuals. TikTok's dataset was created using Instant Data Scraper (Web Robots, n.d.), resulting in a CSV file of 1,966 bot-like accounts that included information on profile descriptions, number of followers, usernames, and profile image URLs. We obtained all profile images using DownThemAll (Parodi and Verna 2019). Building the Instagram and Twitter/X datasets involved additional steps. On Twitter/X, a list of 40 pro-Bolsonaro keywords was used to retrieve 3,486,622 Tweets by 170,044 accounts through the Academic API. Subsequently, we used Botometer (Yang, Ferrara and Menczer 2022) to generate "bot scores", retaining 98,760 unique users. "Bot scores" indicate the likelihood that a user is a bot based on their post history, profile image, number of followers and followers, and number of retweets. On Instagram, 70 bot "seed" accounts were used as entry points to collect information on the accounts they follow using PhanthomBuster. The resulting dataset includes more than 60,000 accounts that belong to pro- and anti-*bolsobots* following networks. Finally, using the Instagram bot following network metadata (i.e., account ID and image URLs), we created additional datasets for profile descriptions, image profiles and associated web entities detected with Vision AI (Google Cloud, n.d.) via Memespector (Chao 2021).

An additional step was taken to verify probable bot accounts in the following network datasets. Although it is well-established in bot studies that bots follow bots, statistical tests were conducted to validate the presence of such accounts. Using t-test and f-test, we analysed follower-following ratios of profiles grouped according to two rules: use of numeric usernames and default profile pictures. Accounts matching at least one criterion were classified as "suspected bots", while those matching neither were labelled as "not suspected bots". Both results confirmed a substantial presence of probable bot accounts in the network with a statistically significant difference in the mean follower-following ratios between groups (4.18 vs. 1.93, respectively) (*Table 1*).

Table 1

*Descriptives of number of followers, number of following and follow-follower rations of accounts suspected as bots and not suspected as bots using f-test and t-test. *** denotes p-value < 0.001*

	Instagram accounts suspected as bots (N=11735)		Instagram accounts not suspected as bots (N=34923)		Tests & results
	Mean	SD	Mean	SD	
Number of followers	919.18	1053.09	1288.23	1317.46	f-test (one-tailed): 758.07***
Number of following	1705.19	1888.41	1682.08	1761.91	f-test (one-tailed): 1.46
Following-follower ratio	4.18	25.06	1.93	5.59	t-test (independent): 15.60***

Following the dataset building steps, quali-quanti visual methods were tailored for each platform and curated datasets. Instead of treating data as a vague unit, we consider its relational aspects and navigate them through the lens of technical practices, i.e., the usage culture of each platform and the technicity of the research software in use.

For Twitter/X, we repurposed Botometer outputs (Yang, Ferrara and Menczer 2022) with a qualitative approach, using statistical results not as the final but as a starting point. We grouped likely bots and non-

bots to analyse changes in how they define themselves as bots or not, filtering tweets that mentioned phrases such as “you are a bot” (“você é robô”), “I am not a bot” (“eu sou robô”), “I am a bot” (“eu sou robô”) and similar expressions found throughout the dataset. To examine how bot strategies have evolved, we looked at the frequency and originality of hashtags they propagated over time, and how they countered platform moderation on Twitter/X and Instagram. While the former task was done by counting (unique) hashtags over time, the latter was done by comparing user statuses obtained in February 2022 and in July 2022.

For TikTok, we adopted a navigational procedure[4] to interpret the (non) associations of profile images and usernames. Analysis was facilitated by RStudio (RStudio Team 2020), Image Query and Extraction Tool (Chao and Omena 2021), ImageSorter (Visual Computing Group 2018), Google Sheets (Google Docs Editors n.d.), Google Slides (Google Docs Editors n.d.) and the TikTok search engine.

For Instagram, we conducted three interconnected levels of analysis by critically exploring and interpreting profile image collections (1) content and (2) context, and (3) profile description of publicly available information. To visualise and analyse image collections, we used ImageSorter (Visual Computing Group 2018), Memespector GUI (Chao 2021), Google Cloud Vision API's web detection methods (Google Cloud), Google Sheets (Google Docs Editors n.d.), Table2Net (Jacomy et al. 2021) and Gephi (Bastian, Heymann and Jacomy 2009) as described in Colombo, Bounegru and Gray (2023) and Omena et al. (2021a). Aligning with Aiello’s (2020) visual semiotics, we zoomed in and out of pro- and anti- *bolsobots* image walls to explore colour clusters and image repetitions. Following Omena et al. (2021b), we also conducted a network vision analysis examining selected web entities and associated images. Within these networks, images can be grouped together if they are associated with the same web entities. As web entities are offline and online references, they provide profile images with a political and contextual background grounded in trustworthy or authoritative web pages (see Li et al. 2018; Sullivan 2020; Google User Content 2022).

As for profile description analysis, we used BERTopic modelling (Grootendorst 2022) to identify themes, agendas, and ideological views and performed exploratory analyses examining platform appropriation.[5] To tackle dataset imbalance, we sampled the larger anti-*bolsobots* dataset to match the pro-*bolsobots* dataset, totalling 25,358 profiles. We then trained the BERTopic model on this new dataset. Employing a supervised approach, we identified 46 topics that would most characterise pro- and anti-*bolsobots* by examining topic distances and representative words through interactive visualisations. The textual analysis identified themes and political agendas for each group, while exploratory data analysis mapped accounts' usage of emojis, hashtags, profile mentions, and other textual patterns.

5. Findings

This section empirically illustrates how the proposed methodology offers pathways to study bots in context. This includes understanding how they operate within broader networks, how they mould themselves to correspond with online political identity and identification cultures, how they reprocess elements of online political culture, such as memes, political insignia and other tropes; and, finally, how they regain agency from increasing public scrutiny and platform content moderation. While the methods presented here originate from the *bolsobots* phenomenon, they can serve as "recipes" for uncovering bots' activities and visual patterns in other research endeavours.

[4] A reiterative process of interpretation that relies on what is provided by the visualisation software while considering datasets file formats, metadata and the environment data comes from.

[5] It was trained using UMAP dimensionality reduction and a MiniLM-L12-v2 multilingual model. See: https://maartengr.github.io/BERTopic/index.html

5.1 Username vs. Profile Picture Method to Unpack Bot Strategies

This visual method unveils bot strategies by assessing the (non) associations between profile images and usernames. The adoption of navigational procedures in the analysis combines visual models (i.e., image treemaps) with the TikTok interface and spreadsheet consultations. Initial findings of the bot profile image treemaps — where images were scaled by follower count and networks of ghost accounts, guided a compositional image mapping creation (*Figure 3*), which elucidates the method's findings, detailed below.

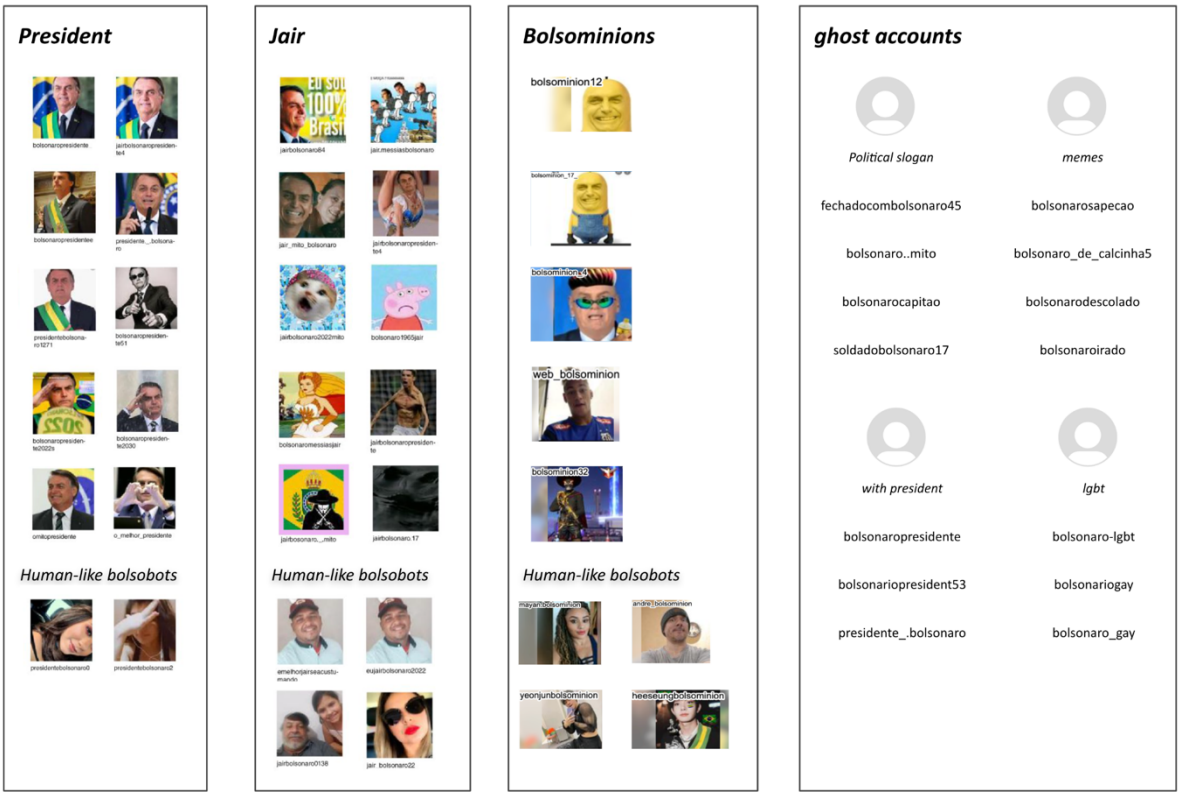

Figure 3.

Example of bolsobots' methods: combining strategic usernames with presidential, memetic, human-like and ghost accounts (default images) profile images. Compositional image mapping created by querying the bot profile image folder (using the Image Query and Extraction Tool) with specific keywords, such as president, Jair and image ID identifying ghost accounts

TikTok *bolsobots* rely on relational frameworks — the platform's memetic culture and bot social cues — and a situational context — the presidential election and related political debates — to generate repetitive slogan usernames and profile pictures featuring Bolsonaro-related themes. As a result, *bolsobots* can simultaneously cultivate a positive image of the candidate and appeal to young and digitally native audiences who are more likely to consume humorous content.

While profile pictures portray Bolsonaro as a respected figure and a laughable character, usernames follow a repetitive logic, including digits or characters or an array of Bolsonaro-related campaign slogans covering topics such as patriotism, family, and LGBT rights (*Figure 3*).

In a memetic vein, pro-*bolsobots* rely heavily on the term “bolsominion” in their TikTok usernames. The term combines the Bolsonaro name with the word “minion”, a synonym for “follower”, and a

reference to the yellow army of replaceable servants in an animated movie franchise. Originally used to mock sycophantic Bolsonaro supporters, the term "bolsominion" was reappropriated by Bolsonaro supporters as an endearment of their loyalty to him (Oliveira 2020). We find accounts with human profile pictures and account names, including a person's first name followed by "bolsominion". This naming pattern suggests a shift from using usernames as a personal signifier to a generic group identity that signals loyalty to a political leader.

We also found an overrepresentation of TikTok accounts with a default profile image. Known as "ghost accounts", these profiles are frequently used to impose a presence in pro-*bolsobots* networks while avoiding scrutiny from users and platform moderation. It is important to note that unobtrusive bot accounts may change their profile pictures over time. They might initially feature a bolsominion picture but then switch to a Bolsonaro or human profile before eventually reverting to a default image.

Additionally, a portion of accounts present TikTok feeds with non-political videos, with some including anti-Bolsonaro hashtags. The mismatch between content and username may point to deliberate tactics to attract engagement through buzzwords. At a small scale, these findings show how *bolsobots'* strategies instrumentalise visual (profile image) and textual (username) online presence.

5.2 Bot following network method: Image Walls and the value of image repetition

Image walls reveal the significance of the dominant profile images of bots and their followee accounts clustered by colours and repetition. They also uncover the visual tactics of bot following networks (*Figure 4*), supported by a visual semiotic analysis and a navigational procedure. Here, image repetition indicates the presence of multiple accounts using similar profile pictures or one account being followed by many others. Whether they are "stolen" or AI-generated, these images have the potential for a close examination of individual visual elements, such as colour and style, to identify networked strategies of bot accounts, with crucial implications for understanding their presence on online visual culture.

First, in the case of *bolsobots* following networks, the use of colour symbolism and repetitive visual elements on profiles act not only as expressions of partisanship but also as cues of the bot-market attunement to evolving discursive disputes between both sides of the political spectrum. Second, the reliance of bot accounts on human-like images exemplifies an attempt to blend in and interact with regular users while conveying a sense of authenticity in the attention economy of social media.

Upon an initial overview of the image walls, it is unsurprising to observe that dominant colour clusters reflect Brazilian political polarisation. Each following network assigns ideologies, identities, and meanings to their respective colour associations. Pro-*bolsobots* are clustered in green, which synthesises Bolsonaro's conservative agenda and praise for the national flag. Conversely, anti-*bolsobots* cluster around red, historically associated with leftist parties and, in Brazil, Lula's Workers' Party (PT).

Nevertheless, a closer reading of colour clusters reveals that symbols are also subject to (re)signification strategies. Similar to hashtag wars, where a trending tag is reappropriated into its opposite meaning,[6] profile pictures have been used to empty or reclaim ownership of certain symbols. Associated since the 2018 election race with Bolsonaro's campaign, the Brazilian flag has been progressively reclaimed by the president's opponents (Soares 2020). Anti-*bolsobots* following networks also follow this trend, adopting the Brazilian flag with specific features to express their political stance. Symbols appear covered in blood and marked with the words "democracy" and "mourning". Moreover, Bolsonaro's figure is "memefied" as an evil clown but portrayed as a hero and emperor in his supporting bot following network.

[6] In the 2018 presidential election, critics and supporters of Jair Bolsonaro battled on Twitter/X using the hashtags #elenão and #elesim (Observa 2018)

Likewise, the Antifa symbol appears on the red cluster aligned with its antifascist original intent, and on the green resignified as an identifier of anti-leftists, accompanied by slogans such as conservative, anti-leftist, and anti-terrorist. Traffic signs – another repetitive imagery pattern – also point in both political directions. There is constant symbolic feedback between opposition groups from the right-wing "turn right" sign, to the countering "turn left" and the *counter*-countering "do not turn left".

The analysis of human clusters reveals photos sharing a consistent visual "style" (Manovich 2016) featuring close-up headshots of an individual against a white background. This image usage allows bot accounts to maintain the illusion of being human even when displayed in small sizes, such as in Instagram comment sections. Moreover, duplicates of political figures in the human cluster may serve as important visual symbols to express and attract users from pro- and anti- *bolsobots* camps. It is important to note that the significance of image repetition in the following network datasets indicates the presence of multiple accounts using similar profile pictures or one account being followed by many others.

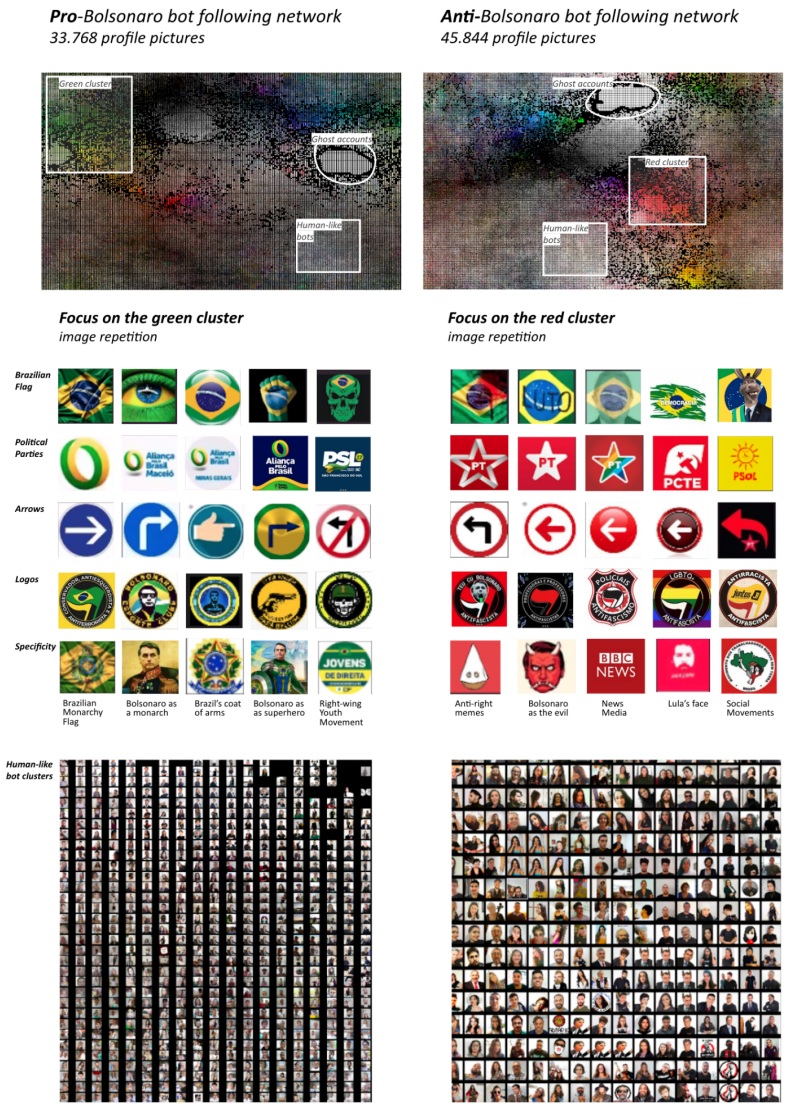

Figure 4

Bolsobots visual vernaculars on Instagram: profile pictures of bots and their followees

5.3 Network vision analysis for capturing web references of bots' visual repertoires

Network vision analysis (*Figure 5*) reveals the relationship between pro- and anti-*bolsobots* profile pictures and their broader web ecosystem, encompassing political, ideological, and cultural dimensions. Instead of solely focusing on the visual representation and aesthetics of the images, as in image wall analysis, this type of investigation provides a more comprehensive understanding of the context in which the images are shared, disseminated, and interpreted online. The results offer insights into pro- and anti-*bolsobots* visual repertoires through the lens of web entities — both conceptual (e.g., politics, political party, democracy) or descriptive of real-world individuals, institutions and objects (e.g., member of the Chamber of Deputies of Brazil, president of Brazil, flag of Brazil).

A first look at the network node colours exemplifies how web entities, such as politics, Brazil, democracy and Brazilian flags, reflect offline and online political topics. For example, among pro-*bolsobots* profile images (in yellow), we notice a recurrent symbolic association in real-life rallies and web engagement: the dominant presence of the Brazilian flag. Also stemming from this principle is the complete dissociation of the entity "democracy" with pro-*bolsobots* images, as Bolsonaro statements are frequently recognised as authoritarian and undemocratic by national and international media.

A second network visual exploration deploys Bolsonaro images as dominant among Brazilian politics-related web entities and in both pro- and anti-*bolsobots* image collections. Filtered networks reveal Bolsonaro's face portrayed in various facets, either in favour or against him. This includes images of Bolsonaro as a victorious politician, a family or people's man, funny pop artistry and cartoonish memes, as well as poop emojis and profile images depicting him as a senseless, maniac or incompetent president. In the context of web entities, these images play a twofold role: they may enrich the web's political memetic cultures and spark offline attention, conversations or debates in support of (or opposition to) Bolsonaro; and they may also reinforce his online presence, feed Instagram algorithms, and boost his online content and visibility.

Similarly, analysis of images tagged as "politics" and "political party" contain logos of historical political parties (e.g., PCB), as well as Bolsonaro's (then) party-in-the-making, Aliança pelo Brasil. This indicates that pro-*bolsobots* following networks are capable of fabricating the online presence of an aspiring political party to such an extent that they trick vision AI into recognizing their images as well as those of parties that have been established for more than a hundred years.

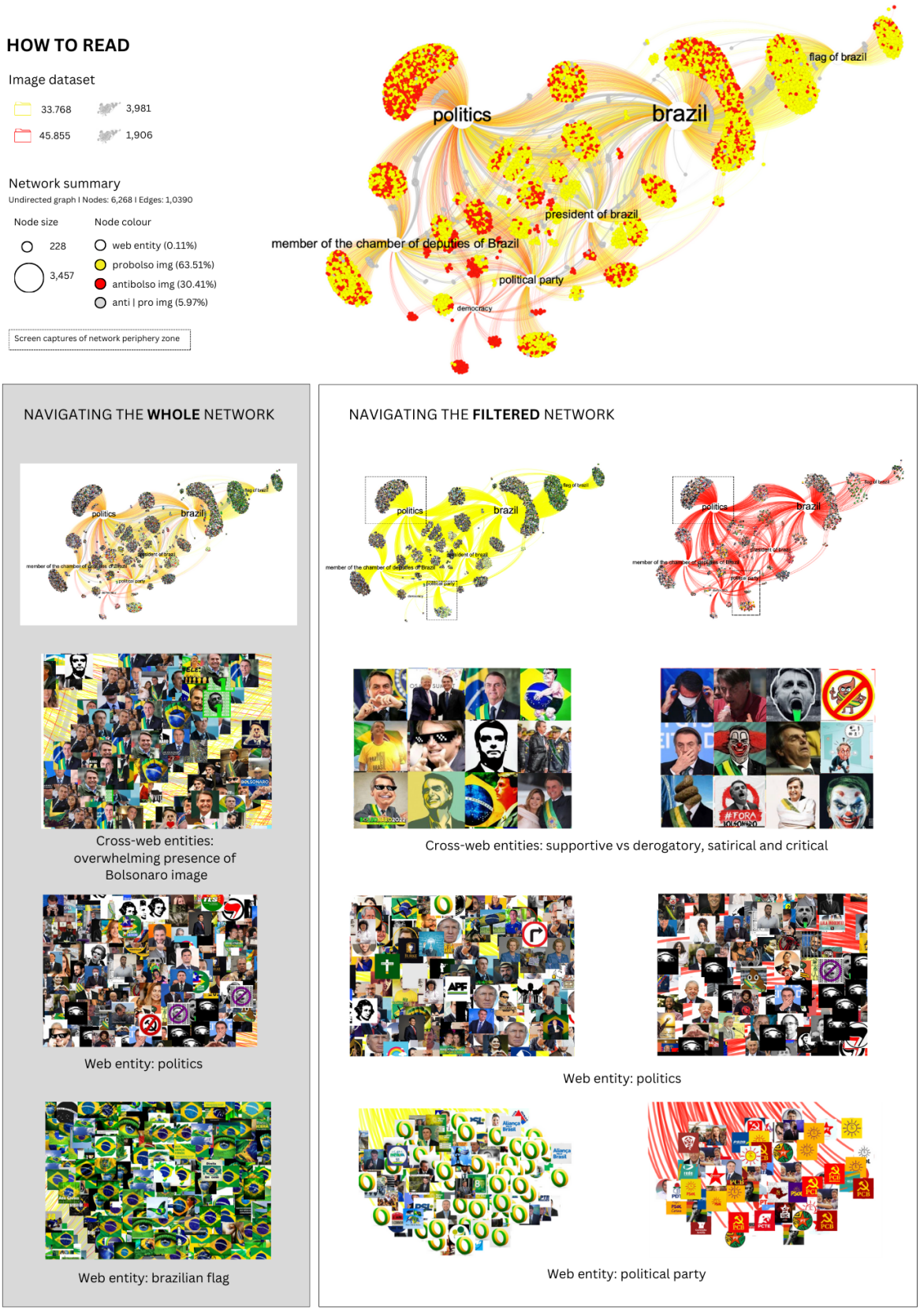

Figure 5.

Bipartite network of bolsobots' Instagram profile pictures and associated web entities

5.4 Profile descriptions for mapping bot political ideologies

Analyses of Instagram's profile description allowed us to map ideological differences and platform appropriations between pro- and anti- *bolsobots* following networks. The analysis points to pro-*bolsobots* aligning with conservative values and economic sectors of society. At the same time anti-*bolsobots* exhibit diverse and more progressive agendas, united primarily by opposition to the president. The pro- and anti- *bolsobots* accounts differ not only in the types of emojis, hashtags, and profiles mentioned in their bios but especially in how they combine these usage patterns in their profile descriptions.

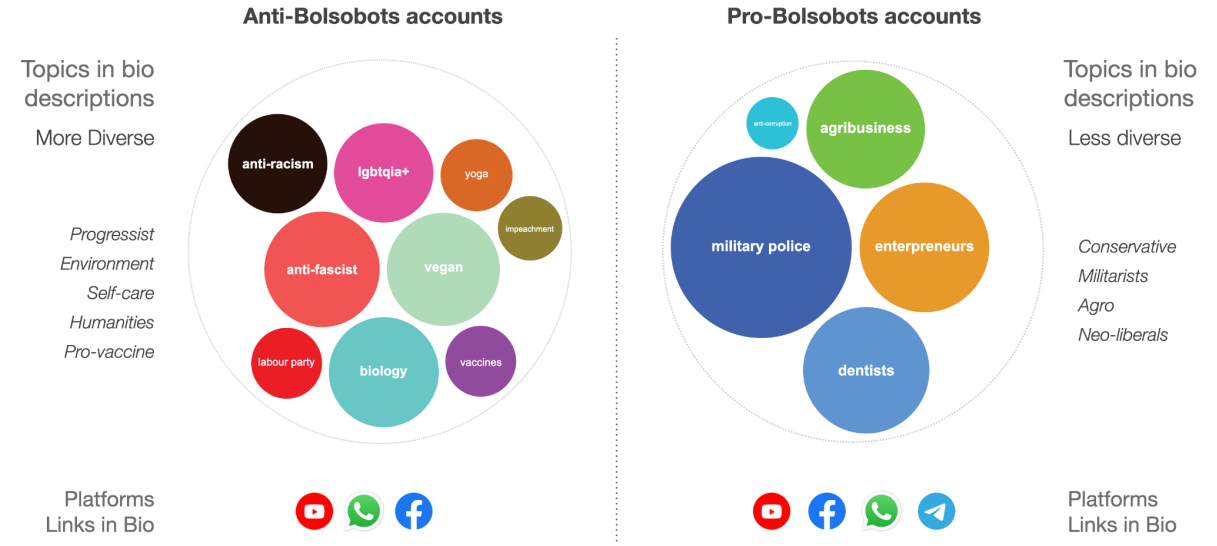

Figure 6

Profile description topics of bot-following networks on Instagram

Anti-*bolsobots* profiles generally align with progressive agendas and fill their bios with information about art, self-care, environmentalism (e.g., meditation, yoga, veganism, biology), vaccination, and wearing masks (Figure 6). In contrast, pro-*bolsobots* profiles often identify as police officers, firearm supporters, business owners, entrepreneurs, dentists, or individuals linked to agribusiness and anti-corruption. Overall, pro-*bolsobots* display fewer themes, suggesting a more orchestrated approach than the diverse anti-*bolsobots'* agendas. This consistency is also evident in their usage of emojis. Both groups use the Brazilian flag (🇧🇷), but pro-*bolsobots* use it repeatedly (🇧🇷🇧🇷🇧🇷) and combine it with other symbols (🔰). Anti-*bolsobots* use the Brazilian flag less repetitively and often associate it with a heart emoji (❤️🇧🇷). An index finger pointing downwards (👇) is also used by both groups, but with anti-*bolsobots*, these emojis point to a broader range of external links (e.g., personal websites and e-commerce platforms). While pro-*bolsobots* tend to point to Bolsonaro's campaign website and channels on YouTube, Telegram, and Facebook.

Hashtags and profile mentions also point to different appropriation patterns. Pro-*bolsobots* commonly mention the official profile of the president and the Aliança pelo Brasil, whereas anti-*bolsobots* rarely mention Bolsonaro's political opponent Lula or his Worker's Party, targeting instead Brazilian soccer club profiles.

5.5 Repurposing Botometer for temporal analysis of Twitter/X bolsobots

By looking at Botometer scores of users from 2017 to 2021, it becomes evident that bots have leveraged political tipping points, capitalised on platform trends and exploited moderation loopholes to maintain a nuanced yet impactful presence on Instagram and Twitter/X. By examining the distribution of bot-like and non-bot-like profiles, we see that these accounts have tended to generate and deploy new hashtags in relation to events on the ground. In *Figure 7*, accounts that were likely bots have tended to generate and disseminate new hashtags over the years, particularly during periods of more political salience for Bolsonaro. In 2021, for example, over 50% hashtags were generated by profiles with a botscore exceeding 0.75. This indicates an increased presence of bots on the platform and transition from trend followers to trend setters.

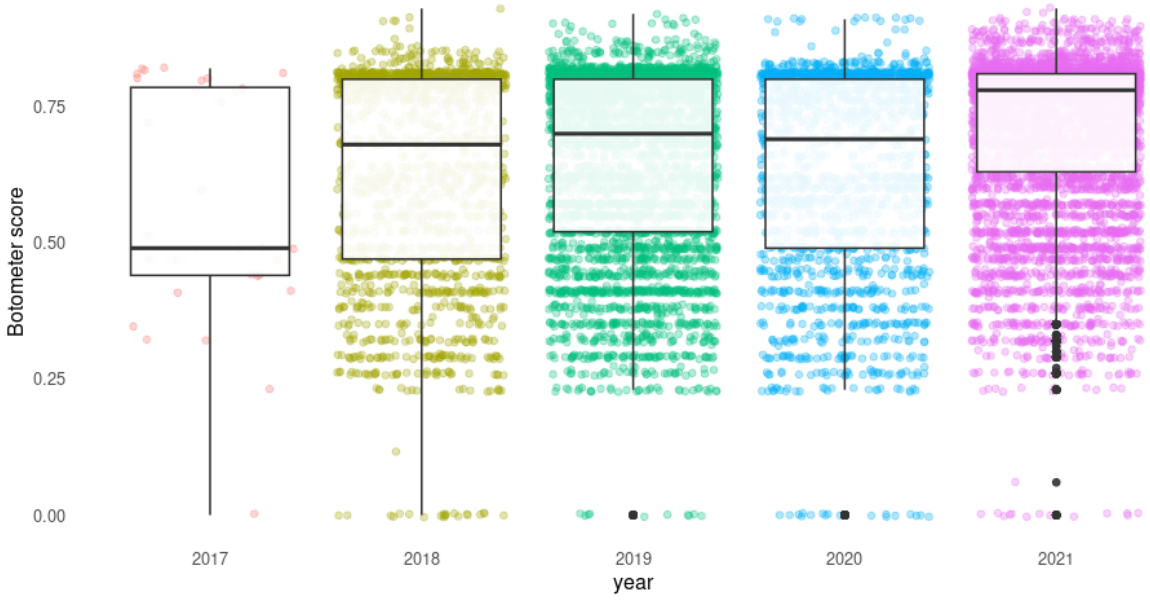

Figure 7

Box plot showing the Botometer score of profiles that tweeted new pro-Bolsonaro hashtags per year on Twitter/X. The higher the score, the more likely the user is a bot

Among the many strategies employed to evade platform or public scrutiny, *bolsobots* have tended to engage directly in debates about what or who is a bot (*Figure 8*). In response to scrutiny by news media (e.g., Globo, CNN), bot detection algorithms (e.g., Botometer or Bot Sentinel) or Bolsonaro opposition figures, some bots will claim that they are ordinary and authentic people, such as housewives and working-class Brazilians. In doing so, they accuse bot detectors of a kind of elitism that consists in mischaracterizing earnest Brazilian people as vehicles for disinformation. They will also appropriate accusations of being bots in an effort to ridicule others for thinking that any political opposition must be inauthentic. These deflections appear in periods of political vulnerability for Bolsonaro, such as in instances when his political campaign faced scrutiny for using coordinated inauthentic behaviour networks across social media (G1 2020).

10.33621/jdsr.v6i1.215

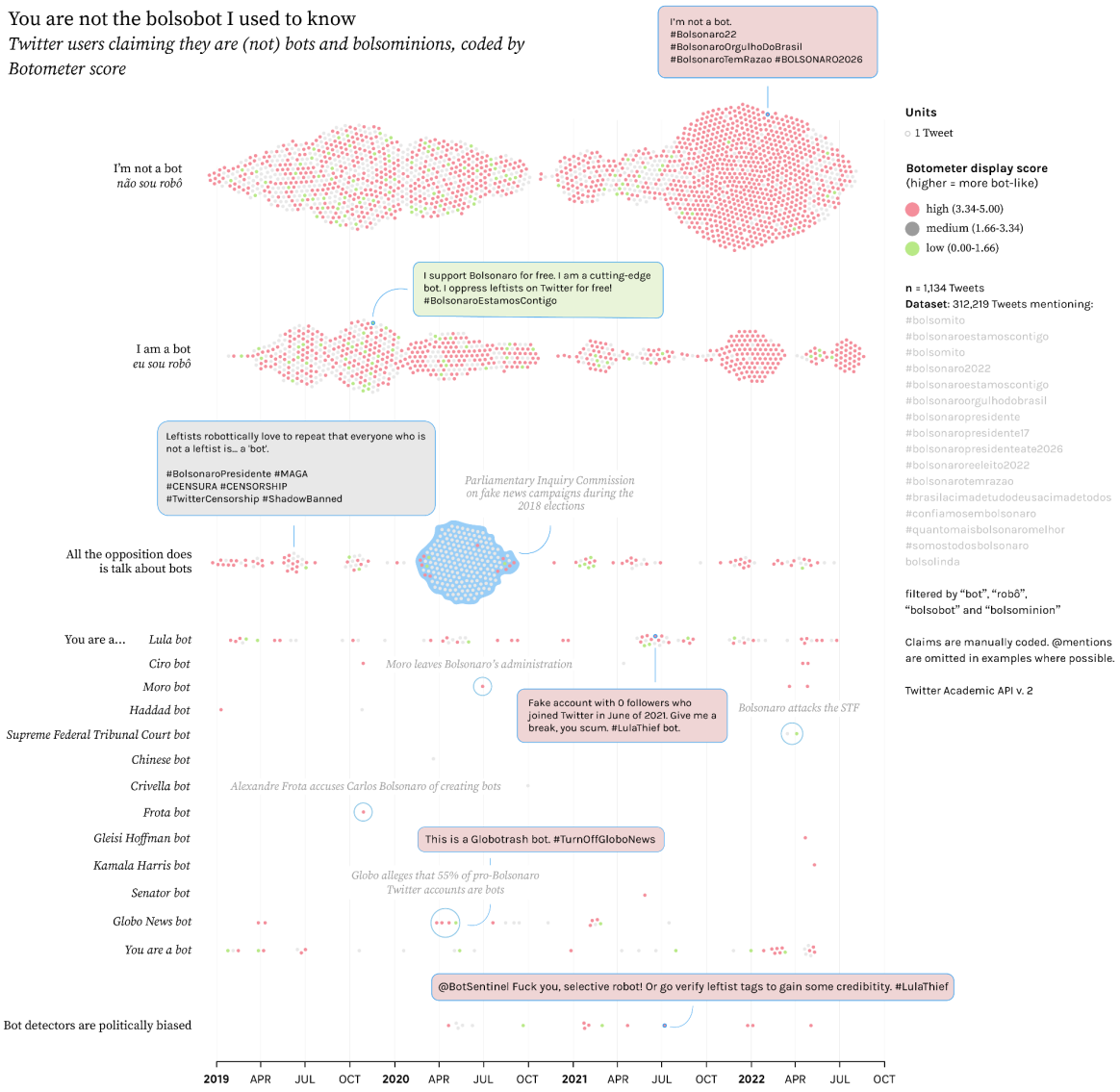

Figure 8

Users and (likely) bots who claim they are or are not bots on Twitter/X between 2019 and 2022). Every dot represents a tweet posted by one user. The colour indicates Botometer scores

To further evade moderation, we find that, depending on the platform, bots may remain "dormant" in periods of low political salience and are then reactivated when necessary (*Figure 9*). That is, they may switch to private mode or be temporarily suspended until they occasionally resurface under different usernames. These findings underscore that moderation efforts do not necessarily result in the permanent eradication of bots, but in the same way that they actively shape public discourse *about* bots, they actively *self-moderate* to remain on the platform. Both of these examples show how bots seek to regain agency over public and platform efforts that scrutinise their authenticity.

10.33621/jdsr.v6i1.215

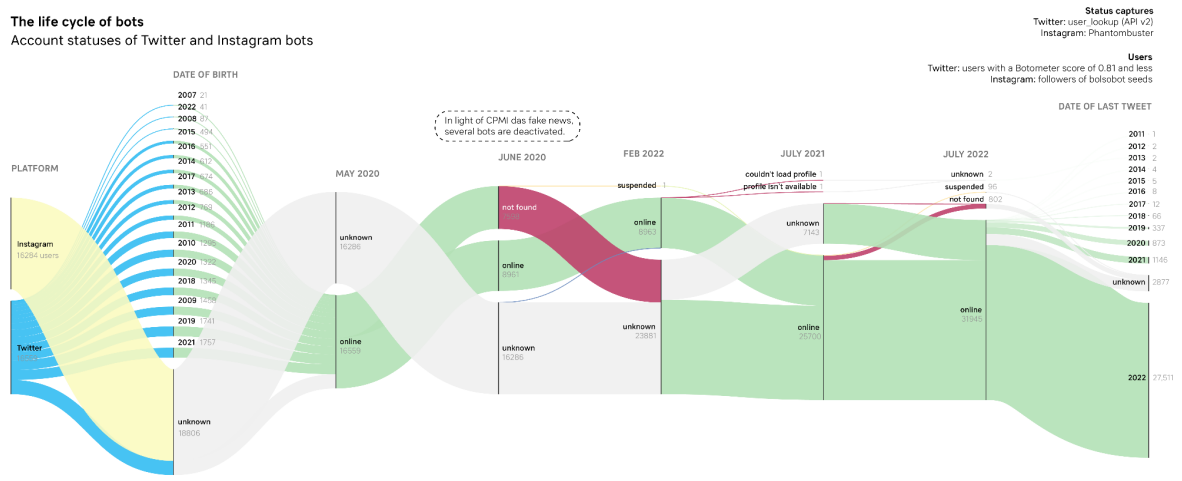

Figure 9

Account statuses of Twitter/X and Instagram bots, May 2020 to mid-2022

5.6 Bot Methodologies: Learning from Findings

In contrast to prevailing methodological approaches that primarily rely on research-friendly APIs and off-the-shelf detection tools to study bots, our findings show a range of quali-quanti visual methods to creatively investigate the agency of *bolsobots* and their strategies on Instagram, TikTok and Twitter/X. To unveil their *modus operandis*, we mapped their following networks, explored visual-textual content in profile pictures (pattern repetition), account names (slogan usernames) and profile descriptions (text-bio, emojis, hashtags, links), and observed the strategies they develop in response to ongoing public and platform scrutiny. Overall, the results show how pro- and anti- *bolsobots* sustain decentralised content generation practices that aim to sway public opinion continuously and consistently.

Central to *bolsobots'* tactics is indeed the use of automation to systematically reproduce user visual cultures at a mass scale and be perceived as authentic or ordinary users. On TikTok and Instagram, *bolsobots* systematically appropriate the profile pictures of "real" human peers to maintain the illusion of being humans even when shrunk to thumbnails. They create identities from a collage of organic online subcultural tropes, including memes and catch-phrases such as "bolsominions". In other instances, the use of political imagery, though concocted, plays a role in fooling AI verification systems into classifying their images as genuine symbols. Meanwhile, ghost accounts can easily switch between any one of a range of political identities by simply altering profile pictures.

Bolsobots also work to stay on top of socio-political debates by constantly adapting their online discourse. When public debate on the usage of bots for political campaigns erupted on social media around 2019, Twitter/X *bolsobots* deflected attention away from them by embracing accusations of fakeness as a sign of authenticity or framing such accusations as inauthentic – that is, as detached, elitist smears against authentic and hard-working Brazilian citizens. *Bolsobots* also actively adapted to changing online political agendas by evolving from *trend followers* to *trend setters*. On TikTok, for example, *bolsobots* profile pictures sought to appropriate or "re-signify" key political imagery. And finally, bots can conveniently switch their profiles "on" or "off" to evade content moderation at politically salient moments.

10.33621/jdsr.v6i1.215

These findings show how the interplay between automation and organic social media political culture makes verification methods limited. Verification, in the form of bot likelihood scores, for example, is limited by quantitative bias and its tendency to separate its object of study (bots) from the socio-technical environment in which it continuously evolves.

This is why we have chosen digital methods that do not separate bots from their user and platform cultures. We have attempted to repurpose verification tools, platform search engines and a range of metadata to show how bots are ultimately a product of their own socio-technical environments. These findings and methodological devices can offer valuable insights to bot research by recognizing that digital culture phenomena, like the one under investigation, emerge from the intricate interplay of diverse elements facilitated and restricted by participatory media platforms, users, devices, and information practices in both physical and digital realms (Marres 2018).

6. Conclusion: Methodological Takeaways

This paper has critically addressed alternative methods for current bot detection and analysis techniques, namely, using quali-quanti visual methods. Further, it has provided a detailed bot methodology operationalisation drawing on a cross-platform study of *bolsobots*. It concludes by presenting three main takeaways that form the seminal proposal of reimagining bot studies with digital methods as a way to overcome the challenges posed by these studies.

The first methodological takeaway of this study is suggesting alternative solutions for dataset building beyond automated methods (e.g. quantitative analysis with Botometer), particularly when dealing with platforms with limited API access and scraping blockers. Rather than proceeding with data extraction at scale, we developed a context-sensitive query design and dataset curation method with platforms' interfaces and search engines that relied on the social cues of bots, visual stereotypes, and following networks. Methodological decisions are dependent and responsive to these factors. Grounding research work on such practices proposes a shift in bot research methods, where the starting point is no longer the outputs of bot-scoring detectors but socio-technical knowledge.

As methodological fieldwork, social media search features mediated our work in identifying keywords embedded with cultural and political resonance in this particular issue space. The selection of keywords was essential for listing bot accounts. However, since each platform responds differently to search queries, contextual keywords underwent an iterative process. Thus, we included or sidetracked keywords; for instance, "direita da opressão" was included on Instagram in July 2021 but dropped on TikTok in February 2022. Account-based queries, which utilise repetitive bot usernames, showed promise as a technique for building bot datasets, though further exploration is necessary.

Following networks led to the discovery of a diverse ecology of bots, consisting of mainstream (i.e. seed accounts) and unobtrusive bots. These bots looked like humans, "ghost", memetic and random accounts, and ordinary people and public figures. Yet, this approach was prone to technical limitations. While scraping following networks on TikTok is impossible, it is restricted on Instagram. Each account can only return up to 7,000 followers, and the account scraping is at risk of being blocked if a threshold is exceeded. For this reason, scraping the public profile information of the following networks took over a year.

The second takeaway is making sense of *bolsobots'* characteristics with quali-quanti visual methods. To enhance data-critical analysis within socio-technical environments, we considered creating visual data, while navigating the intricate layers of technical mediation in research methods. A crucial interpretative step is not only to acknowledge the elements of data assemblage (D'Ignazio and Klein 2020; Kitchin and Lauriault 2014) but also to recognize the co-creation process *with* and *about* research

software. This includes understanding the epistemological dimension of software in research practices (Omena 2021). In addition, it is necessary to employ multiple, complementary visual methods to provide richer contexts, including qualitative engagement with data visualisations through a navigational procedure, yet understanding how our decisions impact what we see.

In the analysis of bot-following networks profile image collections, two methods served complimentary purposes: image walls offer a possibility to verify the aesthetics of images, whereas computer vision networks enrich this process with the context in which images are shared and interpreted online. Moreover, the interpretation of image repetition, either grouped by colour or tagged by web entities, was guided by practical knowledge of the dataset building (i.e. one account may be followed by others, and several followers may share similar images) and of the algorithmic outputs in use (e.g. computer vision and what web entities mean).

Finally**,** we explore how visual methods challenge the boundaries of bot-oriented research and image analysis. While a non-binary perspective offers valuable insights, there are appropriate occasions to distinguish between a bot and a non-bot account. Using digital methods' technical imagination helped us navigate this challenge. For instance, when examining the images and text in the bot following networks, we considered outputs to be part of a socio-technical environment where both bot accounts and regular users coexist and cannot be distinguished except through close examination. Conversely, when examining human clusters based on visual cues, results pointed to clusters of stock-like headshot pictures combined with white backgrounds, indicating a repetitive pattern in image appropriation and, thus, potential human-like bot accounts.

In conclusion, we argue that these methodological takeaways may broaden the range of methods available to comprehensively analyse bots across social media platforms. By encapsulating the principle that *methodological inquiry is intrinsic to empirical investigation and vice versa*, this paper contributes to method innovation on bot studies and emerging quali-quanti visual methods literature.

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JDSR 6(1) (2024) 74–89

JOURNAL OF DIGITAL SOCIAL RESEARCH

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Exploring feminisms on Instagram

Reflections on the challenges and possibilities of incorporating digital methods strategies in feminist social media research

Sofia P. Caldeira[1]

[1] Lusófona University, Portugal.

✉ sofia.caldeira@ulusofona.pt

Abstract

Over the past decade, Instagram has become increasingly popular and embedded in the contemporary experience of everyday feminisms. The platform allows for the co-existence of political, personal, mundane, and aesthetically-oriented content, created by both established feminist actors and "ordinary" people (i.e. not activists, career politicians, or celebrities). While feminist media studies have long studied similar practices of online feminism, historically the discipline has tended to privilege qualitative approaches, rather than more quantitatively-oriented digital methods approaches. However, the study of feminist expressions on Instagram can benefit from a critical engagement and selective embrace of some possibilities enabled by digital methods.This article offers a reflection on the use of digital methods' tools and strategies informed by a feminist media studies theoretical and epistemological lens. This draws on an exploratory case study conducted by the author, which combined qualitative and digital methods to explore a wide landscape of feminist hashtags on Portuguese Instagram. Grounded on this case, the article examines the methodological possibilities and challenges brought by digital methods, and the tensions that can arise from their combination with qualitative feminist approaches. It explores how digital analysis tools can be adopted in combination with qualitative analysis, allowing for the emergence of new insights, critical engagements with large amounts of data, intuitive explorations of datasets, while still allowing to zoom in on specific content for in-depth qualitative engagements. Finally, it also reflects on the ethical implications of a feminist approach to digital methods at the data collecting stage, positing methodological alternatives grounded on a feminist ethics of care.

Keywords: digital methods; critical methodologies; social media feminisms; hashtags; Instagram; Portugal

1. Introduction

In the more than 10 years since its introduction, Instagram has become a widely used social media platform, with over 1 billion users worldwide (WeAreSocial, 2023a), and deeply embedded in everyday

live. The platform has also become a part of contemporary experiences of everyday politics (Highfield, 2016), particularly in practices of everyday feminism (Pruchniewska, 2019). Contemporary activist and feminist practices are often imagined as "digital by default" (Fotopoulou, 2016), with social media establishing itself as a site to engage in dialogue, education, sharing of information and resources, community building, and mobilising feminist action across geographical boundaries – in what's been often termed the fourth-wave of feminism (e.g. Chamberlain, 2017; Munro, 2013). However, Instagram as a platform is often associated with aesthetic, entertainment, and commercial practices (Leaver, Highfield and Abidin, 2020). In this context, activist practices co-exist with expressions of popular feminism grounded on contemporary pop cultures (Banet-Weiser, 2018), and on personal practices that can reflect gendered politics (e.g. Caldeira, De Ridder and Van Bauwel, 2020). As such, Instagram everyday feminisms are carried not only by traditional and established feminist actors – such as activists, politicians, or celebrities – but also by so-called "ordinary" people engaging with the platform.

Different social media platforms, with distinct affordances and cultures of use, can facilitate different modes of political expression (Keller, 2019). Yet, much of the scholarship and media imaginaries concerned with online activism tends to be dominated by other platforms, such as Twitter. The ways in which platform vernaculars of Instagram shape political and feminist discourses are still under-researched (Caliandro and Graham, 2020).

This scope of research draws on the scholarship of the field of feminist media studies (e.g. Harvey, 2020; van Zoonen, 1994), which has long studied feminist practices online (Marwick, 2019; van Zoonen, 2011). However, while the field has historically tended to privilege qualitative methods of data collection and analysis (van Zoonen, 1994), engaging with digital objects and cultures can benefit from approaches that employ digital methods and tools to not only conduct research *about* the internet, but to conduct research *with* the internet (Rogers, 2018). Yet, adopting such approaches can be accompanied by tensions and hesitations, as working with social media data can bring forward challenges that need to be reflected upon to embrace of the possibilities enabled by digital methods (boyd and Crawford, 2012).

This article presents a critical methodological reflection on the adoption of digital methods informed by a feminist media studies theoretical and epistemological lens. This departs from the author's own concerns, drawing on the process of designing and conducting an exploratory case study that combined qualitative and digital methods to explore a wide landscape of feminist hashtags on Portuguese Instagram. While feminist methodological considerations can permeate all stages of research, this article focus largely on showcasing how existing digital methods' tools and analytical strategies can be adapted to and incorporated in a multi-method approach for studying feminisms on Instagram, also reflecting on the ethical implications of a feminist positioning, particularly at the research design and data collection stages.

Following the present introduction, the article briefly introduces the disciplinary traditions of feminist media studies and digital methods. We then present a series of reflections on the process of designing and conducting a case study where the use of digital methods was informed feminist media studies theoretical and epistemological lenses. This empirical work has served as a basis to think methodological challenges in practice. The following section showcases the adoption and adaption of digital methods' tools and approaches to smaller-scale qualitative strategies inherited from the traditions of feminist media studies (de Sá Pereira, 2019). As these methodological decisions also have political implications, we then expand on some ethical considerations underlying a feminist approach to digital methods, focusing particularly the adoption of a feminist ethics of care in digital data collection. We conclude with brief considerations on the possibilities and tensions of incorporating digital methods strategies in feminist social media research, opening avenues for future reflections.

10.33621/jdsr.v6i1.188

2. Conflicting disciplinary traditions? Feminist media studies and digital methods

The expansion of social media and digital technologies to everyday life has also shaped disciplinary and methodological practices. Within digital methods research paradigms, social media platforms like Instagram emerge simultaneously as a site for the study of digital cultures, of broader socio-cultural and political issues, and as a source of methods for research itself (Rogers, 2013; 2018). Drawing on the principle of 'follow the medium,' digital methods advocate for the use of 'natively digital' data, approaches, and tools – working with digital objects like search queries, hashtags, engagement metrics, etc. (Rogers, 2013). While digital methods do not necessarily imply big data, a common emphasis on working with larger-scale datasets, automated processes to capture publicly available data, and the use of digital tools for data analysis and visualisation to uncover cultural patterns in large data sets can evoke some epistemic proximity. In the past decades big data has emerged as a prominent research paradigm (e.g. boyd and Crawford, 2012; Zimmer, 2018), inviting necessary criticism of its practices – criticism that can, to a degree, be extended to wider reflections on digital methods.

While some feminist media scholars working on digital or social media have embraced this digital turn, feminist media studies, as a field, remains largely associated with the interpretative and qualitative methods it has historically tended to privilege (Harvey, 2020; van Zoonen, 1994). As a field concerned not only with the gendered politics of representation but also with those underlying the production of knowledge (van Zoonen, 1994), feminist media studies has extended its political lens to discussions on methodology. Feminist scholars have long critiqued positivist claims of objectivity, generalisability, and approaches that uncritically attempt to reduce people's experiences to over quantitative data (e.g. Oakley, 1998). While these critiques were often directed at quantitative research paradigms, they can similarly be extended to the quantitative and positivist mindset that underlies some big data research (e.g. Leurs, 2017). These critiques of big data and computational methods have sought to dispel the myth of objectivity, accuracy, and truth value that large data sets are expected to offer (boyd and Crawford, 2012, p. 663). These associations can at times lead to hesitations in incorporating digital methods and big data approaches in feminist media studies research.

Critiques pointed at big data approaches question the underlying the belief that human behaviour can be collected, measured, and analysed as a series of isolated data points (Markham, Tiidenberg and Herman, 2018, p. 4), from which, at times questionable, patterns can be extrapolated from data correlations (boyd and Crawford, 2012, p. 668). These quantified insights can often ignore or erase the messiness of human experience, failing to acknowledge how social media can be used in non-standard ways – practices that can be richly explored by qualitative approaches (Highfield and Leaver, 2015). Insights from big data can thus gain meaning when combined with the contextualized knowledge provided by 'small' qualitative data (Leurs, 2017, p. 139).

Furthermore, beliefs in big data's objectivity can obscure the subjective decisions necessary for its existence – decisions on what to collect, what to count, or what to ignore when 'cleaning' the data (boyd and Crawford, 2012, p. 667). The narrative of objectivity in big data simultaneously attempts to 'remove' the human from the process of analysis, by foregrounding digital tools (Markham, Tiidenberg and Herman, 2018), and tries to frame these technical and algorithmic processes of data analysis as 'neutral,' despite their inevitable grounding in particular worldviews (Hesse et al. 2019, p. 569).

The adoption of digital methods and big data approaches by more humanistic fields, such as digital humanities, has also gave rise to important critiques. These questioned the over-reliance on digital tools, at times at the expense of critical reflexivity, interpretation and theorisation (Berry and Fagerjord, 2017) or the absence of political commitment and attention to issues of gender, race, class, or sexuality (Gold, 2012). Many scholars also highlighted how big data can also fall into exploitative practices of data collection, giving rise to ethical dilemmas on issues of privacy, safety, or transparency, that require careful

10.33621/jdsr.v6i1.188

consideration (e.g. Luka, Millette and Wallace, 2017; Markham, Tiidenberg and Herman, 2018) – as will be expanded later in this article.

These criticisms have led to calls for a critical use of digital tools and methodologies (e.g. Berry and Fagerjord, 2017; Leurs, 2017; Markham, Tiidenberg and Herman 2018). These calls ask for a critical and constructive engagements with practices of data collection and digital tools, questioning their technical and ethical limitations. These calls find responses in approaches the critically engage with digital methods, merging qualitative and quantitative approaches to thoroughly engage with rich datasets collected from social media (e.g. Highfield and Leaver, 2015; Rogers, 2013; 2018; amongst many others). Furthermore, scholars concerned with feminist issues and other social-justice oriented research have sought to expand these approaches by incorporating a feminist ethics of care into their research designs (e.g. franzke, 2020; Leurs, 2017; Luka, Millette and Wallace, 2017).

As a field marked both by an interdisciplinary character and by a tradition of epistemological and methodological critique (van Zoonen, 1994), feminist media studies seems particularly poised to engage with digital methods while exploring the challenges brought by these approaches. Feminist media studies are not explicitly bounded to to any particular theories or methodologies (van Zoonen, 1994), rather it recognizes that different methodological approaches can be shaped to fit feminist research questions and political aims (Ramazanoğlu and Holland, 2002). Following this tradition, this article does not offer a normative account on how to "properly" do feminist methods, nor does it advance a complete subversion of the digital methods tradition. Instead, it explores how reflexively transgressing methodological boundaries can be a productive way to enrich feminist scholarship on these topics, allowing us to take advantage of existing digital tools and approaches to engage both with cultural contexts and underlying power dynamics (Leurs, 2017).

3. A case study for thinking digital methods in practice: an inquiry into the hashtag landscape of feminisms in Portugal

The reflections presented in this article draw on the experience of conducting an exploratory study into practices of online feminism in Portugal. Historically, Portugal has had a complex relationship to feminism, deeply marked by the repression of feminist action throughout the Estado Novo dictatorship (Tavares, 2008) and by its subsequent reliance on practices of state and institutional feminism, rather than on grassroots movements and bottom-up mobilizations (Santos and Pieri, 2020). In this context, online feminist campaigns often failed to gain national traction (Garraio et al., 2020). However, in the past years' feminist discourses have flourished in the Portuguese social media ecosystem. The current political climate, with the rise of anti-feminist far-right parties, as well as a national resurgence of the #MeToo movement, has led to a growth of feminist protest, both on social media and offline (e.g. Caldeira and Machado, 2023; Lamartine and Cerqueira, 2023; Roqueta-Fernàndez and Caldeira, 2023).

Research on online feminist and activist practices in Portugal is still sparse. Reflecting shifting media ecologies, earlier studies focused on platforms like blogs or Facebook (e.g. Campos, Simões and Pereira, 2018; Marôpo, Torres da Silva, and Magalhães, 2017). In the last years, however, Instagram has established itself as one of the most actively used social media platforms in Portugal (WeAreSocial, 2023b). As activists often privilege dominant and familiar platforms with wide potential reach (Campos, Simões and Pereira, 2018, p. 499), Instagram also gained prominence with national activists, who often focus their efforts of content creation and communication on this platform (Lamartine and Cerqueira, 2023).

This study thus emerged from a need to garner a more holistic (even if not exhaustive) overview of the current feminist landscape on Portuguese Instagram – as much of the existing research centers around concrete protests or hashtag movements (Caldeira, 2023b). This study starts from the exploratory research

10.33621/jdsr.v6i1.188

question: how does the Portuguese landscape of feminist hashtags on Instagram looks like and what dynamics does it encompass? This intersected with questions on how this landscape relates to the ethos of fourth-wave feminism and Instagrammable aesthetics. Given its exploratory scope, the adoption of digital methods strategies facilitated the expansion of the observations beyond assumptions of the researcher as to what deemed to be the constituent elements of the phenomena understudy (Marres and Moats, 2015), identifying aspects and issues that might otherwise be overlooked.

Drawing on a digital methods strategy, the case study presented in this article starts from the engagement with natively digital objects – hashtags on Instagram. Hashtags are differently used and valued in different social media platforms (Highfield and Leaver, 2015). While Instagram is less reliant on hashtags than, say, Twitter, hashtags can still serve as an important methodological tool for constructing theme-oriented datasets for analysis (Literat and Kligler-Vilenchik, 2019, p. 1991). Several studies on feminisms on social media has focused on exploring hashtag practices and movements such as #MeToo, #YesAllWomen, #SayHerName and countless others (e.g. Jackson, Bailey and Welles, 2020; Portwood-Stacer and Berridge, 2014; Pruchniewska, 2019; Quan-Haase, 2020). Hashtags are often understood as placing individual posts in the context of broader public conversations (Bruns and Burgess, 2015, p. 15), but they can also be used in varied ways, for example personal expressions of feelings (Papacharissi, 2016). Furthermore, in the everyday contexts where most social media practices take place (Brabham, 2015), feminist practices on social media often exist outside particular hashtag movements, recurring to more generic hashtags where feminist action is not overtly or strategically mobilised (Caldeira, 2023b).

Reflecting these practices, we sought to produce a holistic overview of the current feminist landscape on Portuguese Instagram by employing a digital methods approach. Seeking to cover different typologies of hashtags with different use cultures (Bruns et al., 2016), this case study started from a set of four hashtags that rely on different feminist and social media strategies, thus reuniting a diverse scope of posts that while oriented around the same topic can still represent different intentions and orientations (Literat and Kligler-Vilenchik, 2019, p. 1991). The four selected hashtags – #FeminismoPortugal (i.e. feminism Portugal), #IgualdaeDeGénero (i.e. gender equality), #NaoPartilhes (i.e. don't share it), and #PortugalMaisIgual (i.e. a more equal Portugal) were purposefully selected, reflecting a clear connection with the topic under study—feminist online practices—and holding a significant number of posts in the context of the Portuguese social media panorama. This selection encompasses generic hashtags that are used bottom-up, such as #FeminismoPortugal; movement-specific hashtags, like #NaoPartilhes; and hashtags created by institutional participants, such as #PortugalMaisIgual which was created in the context of the National Strategy for Equality and Non-discrimination 2018-2030.

It must be noted, however, that this approach does not provide an exhaustive or complete rendition of all feminist hashtags used in the studied context. The selection of the initial hashtags relies on strategies of theoretical sampling (Patton, 2002, p. 238), which are informed by pre-existing theoretical concerns and purposefully guided by the research questions being studied, and there will certainly exist feminist discourses and manifestations outside these parameters. Furthermore, as will be expanded below, the ethical approach adopted also led to exclusions in the studied content.

The hashtags were queried weekly, during five consecutive weeks between April and May 2021. The queries were conducted on Instagram's search function, using an Instagram profile exclusively directed at research and a dedicated researcher browser, free of cookies, to minimise the influence of algorithmic recommendation systems (Rogers, 2017, p. 88). After identifying the 100 most recent posts present in the hashtag on the first query, the queries on the following weeks identified newly shared posts.

Following ethical considerations, all users who posted on these hashtags were contacted via Instagram Direct Message, informed about the research, its objectives, the extent of their participation and of data collection. A total of 101 users consented to participate in the research, and 294 posts were collected, dating from October 2020 to May 2021. Data from each post was systematically collected manually: including the publication date, type of profile, likes, views, and comments counts, captions, hashtags

10.33621/jdsr.v6i1.188

used, location of the hashtags, and type of post. These include data points commonly studied within digital methods, allowing for the experimentation with existing tools and strategies. A screenshot of each post was also taken. As will be expanded below, this manual data collection allowed both to circumvent technical limitations of automated data collection, and for a purposeful data collection strategy, aligning with a data minimisation principle that limits collection to data relevant to the research questions at hand. As such, the sample generated by this approach is not representative nor generalisable, rather it is an illustrative sample suited for exploratory analysis.

The analysis of this dataset also combined digital methods with qualitative and interpretative feminist analyses. As will be expanded later, the moments of data collection and coding were accompanied by qualitative close readings (Ruiz de Castilla, 2017) and by the taking of analytical memos with emerging interpretations (Maxwell and Chimiel 2014). In parallel, the systematically collected data, organised csv files, allowed for the construction of a hashtag co-occurrences network, using Gephi Version 0.9.2 (Gephi Consortium, 2017), an open-access tool of data visualisation. This allowed for the experimentation with established strategies of data analysis and visualisation, permitting the exploration of different layers of hashtagging practices, including its content, the actors involved, and the relationships established between different hashtags (Omena, Rabello and Mintz, 2020). Furthermore, given the centrality of visual content to the practices and vernaculars of platforms like Instagram (Highfield and Leaver, 2015; Pearce et al. 2020), digital methods were also employed to engage with the visual content of the post collected. Using the open-source digital tool ImageSorter (Visual Computing, 2018), posts were sorted by colour to allow for the exploration of patterns in visual conventions (Pearce et al., 2020; Rogers, 2021), thus inviting questioning on how feminist practices on Instagram relate to the aesthetics of the platform.

This combination of approaches allowed for, on a first level, and overview of how the Portuguese landscape of feminist hashtags on Instagram looked like, and, on a second level, for the development of theoretical engagements on practices of contemporary feminisms on social media (Caldeira, 2023a; 2023b).

4. Critical insights from doing feminist digital methods in practice

The combination of digital methods and qualitative strategies on the development of the case study introduced above has helped to explore this rich thematic dataset, bringing forward various critical insights that expanded our understanding of feminist practices on Instagram. Providing examples from this case study, this section reflects on the potentialities and limitations of incorporating some of the tools and analytical strategies commonly employed by digital methods within a multi-methodological study that is grounded on a feminist media studies perspective.

On a first level, the adoption of a combination of different typologies of hashtags as a starting point of this study has allowed to explore a wider diversity of practices and actors within Instagram feminists. While a lot of social media research focuses on highly visible or remarkable practices, such as those of celebrities, activists, or politicians, most social media practices are conducted within everyday contexts by so-called "ordinary" people (Brabham, 2015). The ability to deal with larger amounts of data afforded by digital methods enabled us to explore hashtagging practices not only from high-visibility actors, but also actions of ordinary actors who do not have established large audiences and whose content tends to receive low engagement metrics (Omena, Rabello and Mintz, 2020). These explorations thus expand our understandings of practices of everyday feminism (Pruchniewska, 2019).

As was introduced above, a strategy of manual yet systematic data collection was adopted. Data was structured in a csv file, emulating the information structure outputted by automated tools or platforms' APIs (Application Programming Interfaces). In order to engage with existing digital methods' tools and analytical strategies, we collected datapoints commonly engaged within the digital methods field, such

as engagement metrics (Rogers, 2018). This structured dataset provides information as discrete elements for analysis that can be plotted into patterns, timelines, graphics, networks, or other formats, using digital tools such as spreadsheet software or network visualisation tools like Gephi.

At the same time, the manual collection process also allows for flexibility in the creation of columns for qualitative observations and analytical memos. This provided thick description about the studied social media practices, but also a record of emerging insights, ideas, questions, theoretical connections, analytical hunches, links, and patterns (Benaquisto, 2017, p. 85–86). This qualitative approach thus helps to bring forward the messiness and tensions that are inherent to the studied phenomena, complementing the overview afforded by digital methods.

The use of digital methods of data visualisation allows for an overview and intuitive exploration of large amounts of information. This can help to reveal trends and patterns within datasets (Highfield and Leaver, 2015), while allowing for the analysis of complex relationships established between different elements under study. Drawing on a feminist perspective, we can think of these insights gained from digital methods not as positivist 'truths', but rather as offering a sense of "directional orientation" (Oakley, 1998). They can help to make sense of larger amounts of data, contextualizing how qualitative insights fit within the broader dataset, but also broaden analytical perspectives, directing subsequent qualitative and in-depth engagement in an iterative process.

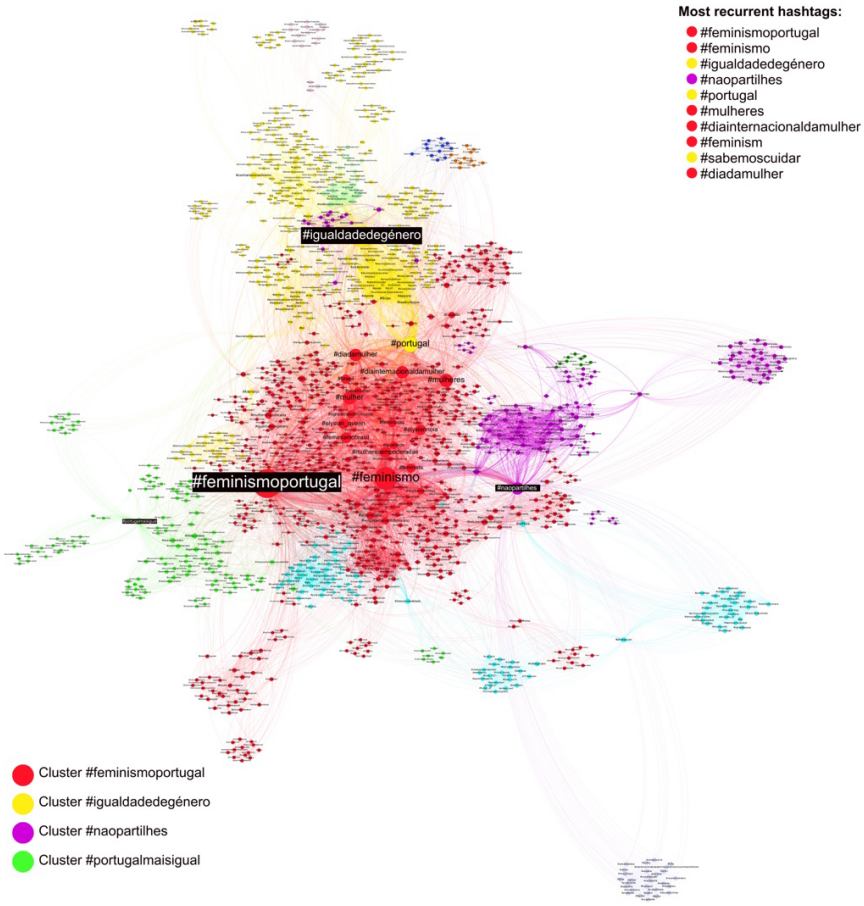

Figure 1.

Co-occurence network of Instagram hashtags #FeminismoPortugal, #PortugalMaisIgual, #NaoPartilhes e #IgualdadeDeGénero. Visualization created with Gephi, layout: Force Atlas 2. Size of nodes indicates the most frequently used hashtags. Colours indicate different clusters.

10.33621/jdsr.v6i1.188

Using the case study of Portuguese hashtags as an example, the hashtag co-occurrences network constructed using Gephi allowed us to visualise all the 1341 unique hashtags used in the 294 posts originally collected from the four queried hashtags, clustered by their co-appearance in posts (see *Figure 1*). The graphic exploration of this network revealed the existence of a range of topics and concerns within feminist hashtags: from pregnancy to fitness, anti-racism and LGBTQ+ rights to feminist media and literature, sexual harassment, body and sex positivity, but also beaty and commercial concerns. This helped to illuminate the complexities, tensions, and contractions that can exist within Instagram feminisms, moving us beyond initial assumptions – albeit not providing an exhaustive representation of the landscape of hashtags in Portugal, as seen above.

The analysis of this hashtag network was done alongside the qualitative exploration of the dataset. While the distant reading enabled by the network allowed for the identification of larger patterns, this approach still invited a qualitative zoom in into specific practices (Omena, Rabello and Mintz, 2020, p. 6). After surpassing an initial barrier of technical mastery, tools like Gephi allow for an intuitive engagement with a high volume of data – one can zoom in, highlight certain nodes, link back to the detailed information contained in the spreadsheet, in an iterative process. The combination of these experimental and visual engagements with data, with qualitative analysis, and with an exploration of the existing scholarship allowed for new insights on how different feminist hashtagging practices that co-exist on Instagram. Drawing on existing analytical strategies of network reading and analysis (e.g. Omena and Amaral, 2019), we could observe that the broad scope of more generic keyword hashtags (Bruns et al., 2016, p. 35) – e.g. #FeminismoPortugal and #IgualdadeDeGénero – was not conducive to the formation of focused topical discussions or well-defined communities, condensing instead different yet related topics, as shown above. Zooming in these pluralised clusters also made apparent the co-existence of varied, and at times contradictory, visions of feminisms – with critical positions co-existing with more postfeminist concerns with beauty, fashion, and self-love (e.g. Gill, 2016). Exploring the network and contrasting these pluralised practices in contrast with the strategically mobilised action of hashtag movements like #NaoPartilhes thus allowed us to identify both common and non-standard practices within this context (Highfield and Leaver, 2015).

In a similar manner, the adoption of digital methods also made possible the overview and exploration of the visual content in these hashtagged posts. Experimenting with visual tools widely used in digital methods, like ImageSorter, not only allows for an inductive exploration of a relatively large data set, but can also create analytical and interpretative arrangements of image collections (Rogers, 2021), automatically grouping and organising collections of images by colour, similarity, date, etc. For the case study at hand, the images manually collected from the selected hashtags were sorted by colour (see *Figure 2*). This visualisation of all collected posts allows for a distant reading that highlights dominant patterns. In this case, the dominant colour pallet of light or pastel tones, particularly soft pink, became evident. This aligns with the "girly" aesthetic that is currently used by popular feminist posts within the platform (Crepax, 2020).

Digital tools like ImageSorter allow simultaneously for distant and close readings, as they retain individual images in the visual arrangements, rather than simplifying them into numeric or textual data points (Rogers, 2021, p. 18). These tools allow for an intuitive exploration of data: re-arranging the plot, zooming into specific clusters or even individual images for qualitative close readings. The overview provided by ImageSorter led to the data-driven observation that the studied aesthetic landscape was dominated by graphic rather than photographic content, despite the common cultural imaginary of Instagram as a photo-based platform (Manovich, 2017). Feminist content often took the form of graphic compositions that combined colourful backgrounds with overlayed text. Similarly to the aesthetic conventions of compositions used by for other social justice movements on Instagram (Dumitrica and Hockin-Boyers, 2022), these feminist graphic compositions combine Instagrammable aesthetics with educational content for accessible informal learning. This style has become part of the popular cultural

10.33621/jdsr.v6i1.188

imaginary of a feminist "genre" on Instagram, drawing on a memetic logic in which posts are created by different users in (direct or indirect) reference to similar posts, sharing common visual characteristics, while still allowing for a degree of individual variation and creativity (Caliandro and Anselmi, 2021).

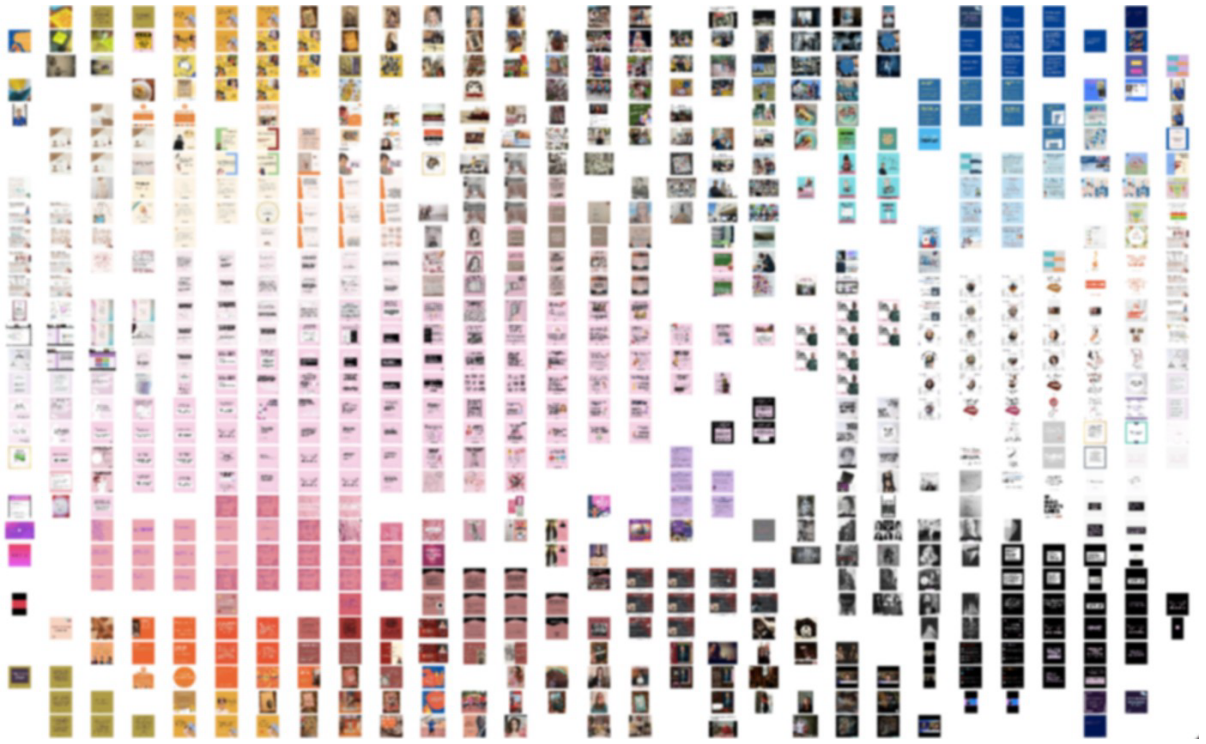

Figure 2.

All posts in the dataset, sorted by colour. Visalization created with ImageSorter. Blurred to respect the privacy and anonymity of the participants..

At the same time, ImageSorter also allowed to zoom into the individual examples of photographs and illustrations that do not fit the dominant pattern identified above. Through an analytical interplay between the visual data and the information organised in spreadsheets, we were able to explore how these images act as attention-grabbing within the visual layout of Instagram, while often acting as expressive or symbolic illustrations to accompany long written captions about feminism. These multi-modal observations thus point to text, in both captions and compositions, as a key site for sharing feminist knowledge on Instagram.

As was introduced earlier, the conducting of this case study also showcased how digital methods can be used to provide a sense of "directional orientation" to qualitative feminist research (Oakley, 1998), as insights from an initial exploration and overview of the collected data can guide further in-depth engagements in the research. Rather than being understood as objective findings in themselves, the patterns observed in these visualisations invited more qualitative analysis of certain posts and prompted the engagement with existing scholarship. As an example, the pluralisation of hashtagging practices noted above was then contextualized within the fourth-wave feminist cultural imaginaries of intersectional awareness (Pruchniewska, 2019, p. 28), noting how these hashtag landscapes could open space for experiences coming from diverse backgrounds. At the same time, the contradictions noted in this hashtag landscape also brought forward critiques of the potential fracturing fourth-wave feminisms (Rivers, 2017, p. 24). These and other emerging theorisations on Instagram feminist practices were expanded in other articles (Caldeira, 2023 a; 2023b).

10.33621/jdsr.v6i1.188

However, while the present case study helps to illustrate some of the potentialities brought by the combination of digital and qualitative approaches for feminist media studies, it is important to critically acknowledge the limitations of the chosen research design. Firstly, using hashtags as a starting point can limit the types of feminist online practices that can be studied. Feminisms on Instagram often occur outside these public hashtags – in non-hashtagged posts, Instagram Stories, or in private online conversations. As such, this hashtag landscape does not provide a full picture of these practices. Furthermore, as was mentioned earlier, this work relies on a theoretically-informed sample, guided by the research questions at hand, and essentially suited for a qualitative approach (Rapley 2014, 59). The four queried hashtags were carefully selected to include popular yet diverse uses, and to limit the heavy presence of posts from other national contexts with shared linguistic similarities. These are qualitative and interpretative decisions that shape what can be learned from digital methods, thus foregrounding the inevitable role of the researcher in these processes often mistaken for 'objective' (Breuer and Roth, 2003). This approach was also marked by the underlying political dimension that shapes feminist media studies (van Zoonen, 1994) – this directed our choice in the topic of study, but also shaped our analytical attention, for example leading to reflections on how different hashtagging practices can have varying symbolical and political impacts. However, we do not see this overt political positioning as a methodological weakness. Rather it offers a productive opportunity for thematic and methodological innovation (Breuer and Roth, 2003; Ramazanoğlu and Holland 2002), shedding light on issues that might otherwise go unnoticed if not for this feminist focus, and pushing for the adaption of existing methodologies for feminist research. Yet, it is important to critically acknowledge this positionality, maintaining a self-reflexive position that is intrinsic to a feminist approach, especially given the ethical implications of these decisions (Ramazanoğlu and Holland, 2002, p. 10), as will be expanded in the next section.

5. Ethical consideration from doing feminist digital methods in practice

Working with social media, both as a place of study and as a source of data to be collected, has long been a fertile ground for ethical questionings (e.g. Luka, Millette and Wallace, 2017; Markham, 2005; Markham, Tiidenberg and Herman, 2018; Zimmer, 2018). Adapting commonly espoused principles of research ethics (such as minimizing harm, informed consent, protecting privacy and confidentiality) to digital and big data research can often raise challenges (Zimmer, 2018).

The case study at hand drew on the idea of "ethics as method and methods as ethics" (Markham, Tiidenberg and Herman, 2018), that sees the combination methodological and ethical concerns as mutually enriching and leading to better research. From this perspective, there are no universal guidelines that can be uniformly applied to all research on social media (Markham, 2005). Ethics is understood as a situated case-by-case practice, adapted to the specifics of each project, and reified by practical research decisions. This section shares some of the ethical reflections that emerged with the present case study, which might help to elicit considerations that can be adapted to other contexts.

The feminist positioning of this research calls for a socially-responsible and ethically-committed approach that puts "human subject squarely in the center" (Markham, 2005, p. 815). This can be answered by adopting a feminist ethics of care in digital research, foregrounding a commitment to respect diversity, and seeking to minimise harm for the people or communities that participate in our work (Luka, Millette and Wallace, 2017, p. 23–24). These principles highlight the importance of research transparency, and responsible data practices that respect the rights and desires of participants. These ideas should permeate all stages of research, thus shaping decisions regarding data collection, storing, and sharing.

The responsibility to research subjects underlying a feminist ethics of care (franzke, 2020) was also reflected in the decision to seek the informed consent of research participants before data collection.

10.33621/jdsr.v6i1.188

Social media can blur the boundaries between "public" and "private" information, with some researchers understanding this data as public by default (Zimmer, 2018, p. 9). However, while social media users can be aware that their content can be viewed by vast audiences and despite agreeing to (rarely read) Terms of Service that at times grant data access to third parties, users do not necessarily expect that their data can be used for research purposes (Fiesler and Proferes, 2018). Users can be ambivalent and even uncomfortable with the idea of being studied (Fiesler and Proferes, 2018, p. 6), and this can be exacerbated when we focus on users coming from traditionally minoritised communities (e.g. Klassen and Fiesler, 2022). Drawing on the concept of "contextual integrity" (Nissenbaum, 2004), distinctions between private and public in digital contexts should be understood as context dependent – varying according to the expectations of privacy of different types of users, practices, platform cultures, etc (Fiesler and Proferes, 2018, p. 3). Research ethics decisions should then be grounded on everyday practices and on the sensitivities of those being studied (Fiesler and Proferes, 2018, p. 1). For the present case study, although hashtags are often understood as part of a public conversation (Bruns and Burgess, 2015, p. 15), the awareness that they can also encompass diverse and personal uses (Papacharissi, 2016) has led to the decision of seeking consent.

The smaller dimension of the sample of study ensured the feasibility of asking consent from every participant. In line with the cultures of use of Instagram, consent was sought in a simplified and informal manner, contacting the users identified via hashtag query through Instagram Direct Message. This contacted explained how their profiles were found, and informed them about the research project and its aims, as well as the scope of their participation and their rights as participants. This approach also allowed for the identification of the researchers, not only by sharing a brief introductory statement, but also through the creation of a research Instagram account with an identifying bio and links to institutional websites with more information. In addition to the ethical advantages, this approach also created an important contact point with the feminist community on Instagram, which can be helpful for later stages of research, for example for recruiting interview participants, and for allowing the researcher to 'give back' to the participants by sharing the results of the research.

However, it is important to recognise that adopting an informed consent practice carries its challenges. Firstly, it can limit our access to the phenomena under study by limiting the sample only to those people who are comfortable with the public scrutiny of being studied. The response rate for the contacts was also quite low – out of the 181 users identified and contacted in the hashtags only 101 accepted to participate, a 44% rejection rate. In most cases these were not overt rejections to participate, rather there was a lack of response, motivated, in part, by the affordances of Instagram Direct Messages itself – messages sent by an unknown account are relegated to a secondary inbox, which many people ignore or simply delete the messages assuming it is spam. In the case study at hand, these difficulties in response were also exacerbated by the nature of some of the contacted accounts. For example, accounts from institutional users (such as governmental or military institutions) often failed to respond in a timely manner due to the bureaucratic procedures needed to secure the authorisation to participate in the study. This particularly affected the data collected for the #PortugalMaisIgual hashtag, which was dominated by institutional users. As was introduced earlier, this highlights that the data set analysed for this case study should not be taken as exhaustive or representative of the full scope of the hashtags as they are searchable on Instagram. Rather it is a theoretically oriented sample which encompasses a set of users who openly consented to participate in the research.

Considerations on informed consent and accountable practices of data collection can clash with the reliance that big data and digital methods approaches can have on automated processes of data collection, where asking informed consent of each participant is often unfeasible. In the past, platform sanctioned avenues for data collection, like APIs, have facilitated automated data collection practices. Yet, platforms have since started restricting or altogether eliminating API access (Bruns, 2019; Freelon, 2018). In 2016, Instagram has limited access to its public API, privileging commercial interests and largely excluding researchers (Leaver, Highfield and Abidin, 2020). The ease with which platforms can restrict access to

10.33621/jdsr.v6i1.188

data has led scholars to rethink their reliance of APIs, prompting technical and methodological experimentation in response to API closures (Bruns, 2019; Freelon, 2018). Yet, many of the solutions proposed can still draw on technical and automated strategies; for example data scrapping, which requires considerable technical expertise and poses legal questions by breaking the Terms of Service of many social media platforms (Freelon, 2018). Other alternatives can include the use of black-boxed and commercially-driven social media analytics services, or accessing data via platform-provided alternatives such as Twitter's paid API access or Meta's CrowdTangle. However, these alternatives can reinforce a digital data divide (boyd and Crawford, 2012, p. 674), locking out researchers that do not have the resources to buy or secure access to data.

As the present case study posits, the adoption of a consented, manual yet systematic strategy of data collection can be a way to subvert these platform restrictions on data access, and to avoid replicating exploitative data practices that scholars so often criticise in relation social media platforms themselves (franzke, 2020, p. 68). As was introduced above, a spreadsheet was created emulating the structure of information collected from social media, allowing us to experiment with already established digital methods' tools and analytical strategies. As many currently available tools for Instagram data collection scrape information that is visible in the platform's graphic interface, the same data can be collected manually, albeit in a more labour-intensive and time-consuming manner. In this way, manual data collection can be a way to circumvent the use of black-boxed commercial tools and to take into consideration users' expectations, while also circumventing the often-inaccessible technological expertise required by alternative data scrapping methods, especially for scholars coming from non-computational backgrounds (boyd and Crawford, 2012, p. 674). While some scholarly communities, like the DMI Amsterdam, have contributed to the critical expansion of digital methods through the creation of tools that address issues of data access, these need to be continuously updated to respond to platform changes (Rogers, 2018). In this way, manual approaches can be a further alternative to engage with social media data in a way that both allows for digital data exploration and reflects the feminist politics and epistemologies that guide this study.

The methodological decision to manually collect data also reflects an ethical care to minimise risks of harm for research participants (Luka, Millette and Wallace, 2017, p. 23–24). As was seen earlier, this manual approach enables a purposeful data collection strategy which can limit the inadvertent collection of potentially identifiable metadata. This also facilitates the creation of datasets for analysis that are pseudonymised from the start. This care to minimise harm is especially necessary given the sensitive political nature of the topics often studied in the field of feminist media studies, as feminist practices online can attract significant online hate and misogyny, and, as such, carry additional risks for participants – especially for those with marginalised identities (Harvey, 2020, p. 140).

This labour-intensive approach of manual and purposeful data collection is fitted for work that focus on a smaller dataset, which allows for both digital exploration and qualitative in-depth analysis. As such, contrasting with the large scale of big data and of some digital methods projects, this study follows a "deep-data" approach, comprehensively studying a smaller number of cases and attentive to their individual complexities (Manovich, 2012), thus foregrounding the value of small data and rich interpretative insights (boyd and Crawford, 2012, p. 670). Rather than big data, this approach draws on the idea of "good enough data", which understands the nature of data collection as dependent on the purpose of the study, foregrounding alternatives do conventional big data and automated collection (such as the use of data collected or created by ordinary people), while still emphasizing the robustness of this data to produce trustworthy analyses and visualisations (Gutiérrez, 2019, p. 62).

While the time-consuming nature of this manual strategy of data collection can be seen as a limitation, it can simultaneously be perceived in a productive manner. The process of manually collecting and inputting the information on the spreadsheets creates a first moment of in-depth familiarisation and qualitative engagement with the object of study, allowing the researcher to start conducting close readings and noting the diversity of meanings these posts could encompass (Ruiz de Castilla, 2017). As was

10.33621/jdsr.v6i1.188

explained above, this process was also accompanied by attentive notetaking and writing of analytical memos with emerging interpretations (Maxwell and Chmiel, 2014), thus creating a first analytical moment that is iteratively reiterated and expanded throughout the research.

6. Conclusion

The increased presence of social media in everyday life and everyday experiences of contemporary feminisms (Pruchniewska, 2019) has underscored the need to not only conduct research *about* the internet but also *with* the internet (Rogers, 2018). This article departs from the epistemological and methodological hesitations of engaging with digital methods coming from the historically qualitative field of feminist media studies (van Zoonen, 1994). It reflexively works through the potentialities and tensions of productively transgressing methodological boundaries.

This article grounds and illustrates these methodological reflections by drawing on a case study that explored feminist hashtagging practices on Portuguese Instagram. This case study engaged with existing digital methods' tools and analytical strategies, while adapting them to a smaller scale study (de Sá Pereira, 2019), allowing for practices of data collection informed by framework of ethics of care (franzke, 2020), and for the combination with in-depth qualitative engagements. This facilitated a critical engagement with large amounts of data, inviting an intuitive exploration of the dataset, an overview of the information, while still foregrounding the qualitative complexities of these texts and practices. This case study also highlights how ethically-oriented practices of manual data collection can complement or, at times, substitute the automated data collection practices commonly associated with digital methods, helping to surpass technical limitations while minimising harm for participants and, simultaneously, allowing for a productive qualitative engagement with the data.

This article primarily focused on how existing digital methods tools and analytical strategies can be adapted to and incorporated in feminist media studies, and how this feminist positioning affects the data collection stage. This feminist epistemological and methodological lens can, however, shape all stages of research – including what research questions can be asked, which tools can be used and how can these be subverted, what analytical readings can be made, and even how research results can be presented. As such, we echo earlier calls to continue critically questioning digital tools and methodologies in future scholarship (e.g. Berry and Fagerjord, 2017; Leurs, 2017; Markham, Tiidenberg and Herman 2018).

Rather than claiming to invent a new methodological approach to research, this article hopes to offer a small contribution by engaging with critical feminist traditions to adopt and adapt existing approaches to concrete research contexts and needs. As such, while this article does not propose universal methodological or ethical guidelines that can be widely applied to all feminist media studies, we hope that these reflections can be useful for those who wish to engage with tools that are often felt to be outside our disciplinary toolbox. By sharing these methodological reflections, we seek to highlight the messiness and the struggles underlies all research, illustrating how these challenges can foster a critical engagement with digital methods from a feminist media studies framework.

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Networked masterplots

Music, pro-Russian sentiment, and participatory propaganda on TikTok

Marloes Geboers[1], Elena Pilipets[2]

[1] University of Amsterdam, Netherlands
[2] University of Siegen, Germany

✉ m.a.geboers@uva.nl

Abstract

This article investigates engagement with propagandist TikTok videos shortly after Russia's invasion of Ukraine on February 24, 2022, with particular attention to the role of music and comments. By repurposing the infrastructure of TikTok sound-linking, our research upholds sensitivity to how this infrastructure enables affective and participatory workings of propaganda. We develop the notion of networked masterplots based on a situated analysis of how a specific sound, occasionally used in combination with pro-Russian hashtags, prescribes the creation of replicable linkages between three distinct video templates. The analysed templates, as we will show, not only intentionally share the use of the same song but adapt the theatrical effect of situation and suspense on the textual level of "stickers" or messages overlaid on top of videos. A selection of fifteen videos using the stickers – "What if they attack?", "I am wondering how many will (un)subscribe?", and "I am (not) ashamed" – in combination with a techno remix of the Soviet folk song Katyusha will be at the centre of our investigation. Arguing that in Katyusha videos situation and suspense are indivisible, we pay attention to the audiencing practices as they extend into both video comment sections and further memetic spin-offs. We conclude by reflecting on how TikTok sharing not only facilitates self-expression and social activism but also enables the weaponization of content within networked memetic environments.

Keywords: participatory propaganda; digital methods; networked masterplots; affect; soundscapes

1. Introduction

Drawing on the notion of affective affordances (Hautea et al., 2022), this article examines pro-Russian war propaganda on TikTok, a platform crucial in mediating the ongoing full-scale military invasion of Ukraine since February 2022. Propaganda takes on various forms, but within the scope of our research it is best defined in its capacity "to manipulate public opinion by activating strong emotions, simplifying ideas and information, attacking opponents, and responding to the deepest hopes, fears, and dreams of its target audiences" (Hobbs, 2020, p. 5; Luckert & Bachrach, 2009). As engaging action possibilities that

rely on technological forms (Hutchby, 2001; Tiidenberg & Siiback, 2018), affective affordances of social media mobilise publics that are steered through both shared sentiment (Papacharissi, 2014) and platform materialities (Geboers, 2022). It is our premise that contemporary forms of propaganda on TikTok tap into these relations, creating complex participatory environments amidst currently 'happening' trends.

To effectively capture user attention in these environments, propagandist messages attune themselves to TikTok's multi-modal features (Hautea et al., 2022). By repurposing the engaging infrastructure of sound-linking (Pilipets, 2023), our research upholds sensitivity to how this infrastructure gives rise to what Boler and Davis (2021) call 'propaganda by other means'. Contingent on participation, propaganda by means of TikTok sharing encompasses networked video performances circulating in a decentralised fashion. Musical sound as the carrier and amplifier of affect (Lucier, 1995; Hennion, 2015) here serves as the main searchable template and networker, allowing us to approach TikTok content in "its capacity to propagate, move and be moved" (Kahn, 2009, p. 26). Centering on the reverberations of music across videos and comment sections, we explore how TikTok's "use this sound" button allows content creators to circulate complex affect-laden messages of varying tonalities. Our analysis shows that TikTok sharing not only facilitates self-expression and social activism but also enables strategic injections of content, weaponized to amplify nationalist sentiments within networked memetic environments.

The overarching question guiding our research is: How do the affective affordances of TikTok shape pro-Russian war propaganda? We present a case study using methods tailored to TikTok's performative and memetic nature. The case study consists of three video templates – each demonstrating specific aesthetic choices and attention-grabbing techniques (Abidin & Kaye, 2021) – that we conceptualise as networked masterplots. The analysed plots, as we will show, not only intentionally share the use of the same song but emerge through imitation on the textual level of "stickers", or messages overlaid on top of videos. A selection of fifteen pro-Russian videos using the stickers – "What if they attack?", "I am wondering how many will (un)subscribe?", and "I am (not) ashamed" – in combination with a techno remix of the Soviet folk song Katyusha will be at the centre of our investigation. The remix turns a nostalgic 'sound from the past' into a catchy techno beat, targeting users' sense of collective belonging through a masterplot that is "co-constructed, stripped-down (skeletal), and thus easily shareable and adaptable" (Mäkelä, 2021, p. 51).

To explore the affective pathways extending the propagandist message, our research traces resonances and dissonances evident in both video performances and interactions in the comment sections. We approach the latter through quali-quantitative methods attuned to the repetitive nature of users' shoutouts and the default visibility of comments with replies. We then make three arguments: First, TikTok's multi-layered affective affordances and networked features prioritise embodied performances that go beyond 'mere' persuasion, focusing on the bonding potential instead. Second, all three masterplots tap into a theatrical mode of 'situation and suspense' (Wang & Suthers, 2022), the suspense dissolves so as to inspire video appropriations and user alignments in the comment sections. Third, by fostering the practices of imitation through commenting, Katyusha TikToks not only make memetic content grow "sticky" (Ahmed, 2004) with affirmative associations of love (for the nation) but also foster collective imaginaries of war and peace.

3.1 Propaganda music and its dual function on TikTok

The choice for sound as the primary step in our exploration not only derives from the platform's logic of content creation, but it also acknowledges music's affective impact and its historical role in propaganda (Thompson & Biddle, 2013). Katyusha, composed in 1938 by Matvey Blanter, owes its lyrics to the Soviet poet Mikhail Isakovsky. An ode to soldiers fighting afar for the Motherland, this song has been part of the Soviet national identity ever since its composition (Polyudova, 2016). 'Techno-Katyusha' can be regarded as a TikTok-modulated attempt to instrumentalise post-Soviet nostalgia, perpetuating love for the nation in the envisioned target audience. The techno beat, designed to fit TikTok's obsession with

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catchy dance challenges, supposedly smoothens the path to engagement with Katyusha's main affective cue: a shared sense of pride that unites 'the nation'.

Alongside its affordance as affective mediator, music on TikTok is also a networker and, in this role, it is highly templatable. Building on Abidin and Kaye's (2021) understanding of "templatability", we explore how a sound template prescribes the creation of replicable linkages between different layers of platform engagement. Aural linkages created through replicating someone else's sound can intersect with other layers of expression that reinforce the circulation of multi-modal templates: TikTok video effects, hashtags, and overlaid stickers, among other elements, add a certain consistency to users' performances. As our research material indicates, the expressive elements of Katyusha videos, including the patterns outlined in the sticker text, are crafted to seamlessly blend into targeted audiences. The resulting networked masterplots abide by the 'dictates' of memetic adaptability (Treem & Leonardi, 2021): they tap into an affect that is recognizable and replicable.

As short-form videos are largely theatrical, theatre theories used in the ontology of performative activities (Wang & Suthers, 2022) prove helpful, both for describing our memetic templates, and for assessing the processes of imitation and repetition they evoke. Approached as networked masterplots, memetic content formations are characterised by their capacity to follow a "skeletal blueprint" (Mäkelä, 2021) that sets up a theatrical mode of situation and suspense. 'Situation' is a flexible setting that is established by TikTok performances, it is "a context or a circumstance" (Wang & Suthers, 2022, p. 313), which can be demarcated by sounds, hashtags, embodied gestures, and emojis. 'Suspense' builds up as a continuation of the situation, "it shows the twists of the story, or the punchline" (ibid.), which can be dissolved by means of reassurance or affirmation, and prolonged by way of reversing or reinstalling the situation. In Katyusha videos, situation and suspense are indivisible, extending both into further memetic spin-offs and into commenting practices driven by users' competing affective investments. Some would engage based on their desire to belong, others would contest the masterplot, signalling discontent.

Our analytical framework thus derives from the premise that memetic masterplots networked through sound become sticky with affect through subsequent circulation. For Sara Ahmed, stickiness takes "a form of relationality, or a 'withness', in which the elements that are 'with' get bound together" (ibid.: 91). Words, for example, stick because they become attached through affects that do not "reside positively in signs" (ibid. 60), but circulate and move between objects, signs, and bodies. Videos networked via aural linkages become even more sticky through combinations of modalities, such as those seen in the pro-Russian masterplots where both the song as well as the sticker texts constitute the template. While some room is left open for 'original' embodied performances, the propagandist messages perpetuated in video adaptations of Katyusha are meant to be (almost identically) repeated, which involves a certain extent of resonance through "audiencing" (Fiske, 1994; Rose, 2023) in the comment sections.

Writing about affect and social media, Susanna Paasonen (2019) reflects on how resonance as an "intensification and prolongation of sound, especially of a musical tone" (p. 49) can be understood as a "quality of evoking response" (ibid.). A sound attuned to a memetic masterplot may add a specific affective trajectory to a formation of TikTok content, which does not mean, however, that it will automatically result in shared sentiment. This gives rise to questions of alignment, resonance and dissonance as "the edge necessary for online content to grab attention […] owes to the affective intensities it engenders, whether these are sensed as pleasant, offensive, or blatantly disturbing" (ibid, p. 60). TikTok imitation publics (Zulli & Zulli, 2022), while aiming to lure in engagement with the same memetic masterplots, do not exclude boundary work or affective contestation. As sounds catch on and users respond with novel adaptations of the template: "positive, negative, and ambivalent affect blend into each other" (Paasonen, 2019, p. 52), initiating various trajectories of response. Aiming to dampen possible interventions, Katyusha masterplots are designed to strengthen the bonds between certain audiences – a strategy that extends into commenting practices reiterating the same or similar message.

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3.2 Methods: navigating soundscapes, uncovering masterplots, mapping resonances

The methods outlined below comprise two steps: firstly, detecting templates within the specific TikTok 'soundscape' of Katyusha, and secondly, performing a word pair analysis of comment sections to evaluate the reverberations of the propagandist message. To conduct our study, we combine a data-intensive digital methods approach (Romele & Furia, 2020; Gerbaudo, 2016; Rogers, 2019) with aspects of the walkthrough method and multimodal analysis as proposed by Light et al. (2018). A soundscape, as we approach it by leaning into TikTok's music indexing logic, foregrounds audio as the main memetic stratifier, opening up different paths for navigating TikTok content via additional expressive linkages such as hashtags or effects. Paying attention to these linkages accessible at the level of TikTok infrastructure, we repurpose the sound to demarcate videos that use the same Katyusha remix, asking: Which other platform features came to the fore in these video performances? Which memetic associations were at play? And, most importantly in light of the participatory nature of propaganda on TikTok, which resonances with Katyusha emerged through user engagement in the comment sections?

3.2.1 Navigating soundscapes

From a pool of 1,938 videos utilising the Katyusha remix, our choice of fifteen videos reflects the frequent use of three different sticker templates, each represented by the five most commented videos. Because listed (and thus easily searchable) sounds from the TikTok-embedded sound library go hand in hand with reworkings and spin-offs, also known as 'original sounds', audio artefacts contain disguised templates, which are not easily accessible through keywords. Sensitive to the contextual nuance of associated sharing possibilities, our methods benefit from systematically exploring the TikTok interface, including immersive walkthroughs across the original sounds that were frequently appearing together with pro-Russian hashtags including #россия🇷🇺 (Russia), #мненестыдно ("I'm not ashamed"), and #zанаших ("For our boys"). These connections not only hold analytical relevance for meme detection in that they script the associated masterplots, but also generate metadata – time of publication, effects, co-hashtags, etc. – intertwining in the streams of platform-distributed content, which we scraped using the Digital Methods Initiative's browser tool 'Zeeschuimer' (Peeters, 2021).

The decision to focus on the most commented videos is both ethically and analytically grounded in our exploration of propaganda audiencing. In line with John Fiske's (1994) insights (see also Rose, 2023, p. 60), we understand the processes by which visual (propaganda) messages have their meanings amplified or renegotiated as contextual and contingent upon the spaces that structure participation. Analysing propagandist messages and their memetic spin-offs in conjunction with user comments, we position associated acts of digital amplification as sites of ethical and rhetorical decision-making (Phillips, 2018; Bradshaw, 2020). Toxic injections of pro-Russian war propaganda embedded in the networks of the three studied masterplots – for simplicity, we will refer to these templates as 'attacked', 'subscribed', and 'ashamed' – call attention to the questions of positionality, literacy, and "slow circulation" (Bradshaw, 2018). The latter, as we suggest elsewhere, also requires 'taking the oxygen out of the meme' (Pilipets & Geboers, 2024 forthcoming) through methods that both visually and rhetorically counteract the sensationalist language of 'debunking' inherent in online environments.

3.2.2 Uncovering masterplots

With particular attention to the attitudes inscribed in the videos themselves and their reverberations in the comment sections, a focused visual exploration of memetic masterplots has been performed by grouping a selection of the five most commented videos per sticker template in Figure 1. Within each of the templates, we conduct a multimodal video analysis under consideration of both engagement metrics and (where applicable) co-hashtags, which in their general address evade targeted searchability but reveal content creators' "post-based virality ambitions" (Abidin, 2021). Co-hashtags such as #fyp ('for you page') or #lukashenko #putin #kadyrov, which either indicate desired visibility or demarcate associated audiences help us to interpret the propagandist circulation strategies. Reflecting on the potential

amplification, we do not reproduce the exact title of the Katyusha remix as it has little relevance in terms of understanding the workings of propaganda. We also do not reproduce the performers' handles, as this information clearly would draw unnecessary attention to individual users, whose faces we de-identified. The translated sticker messages and associated performances, however, are left visible as they both require critical deconstruction through visual analysis and point us to the affective charge of the masterplots without additionally enhancing their traceability.

The visual technique of montage, initially introduced by Lev Manovich (2009), combines the sequential narrative of video storyboards with their spatial organisation via the Katyusha remix and accompanying stickers. Providing an analytical overview across each of the resulting masterplots, the sequential narrative translates into a series of movements and bodily gestures displayed side by side in a series of deconstructed video frames. The spatial arrangement allows researchers to navigate across the soundscape of Katyusha, revealing memetic linkages between the videos through stickers, which underpin the theatrical effect of 'situation and suspense' (Wang & Suthers, 2022). On the one hand, as we discuss below, such analytical devices offer a means of simultaneous close-looking and cross-reading. They are 'metapictures' framed in a manner of display that enables critical reflection on them (Rogers, 2021; Mitchell, 1994). On the other hand, and in line with Jonathan Bradshaw's proposition (2020), we suggest that these techniques help social media scholars to "counter malicious accumulative strategies with rhetorical specificity, and to encourage an ethics of self-care among audiences" (p.3).

3.2.3 Mapping resonances

For cross-reading the audiencing dynamics in the comment sections of fifteen videos representing the three templates, we used the TK_Comment Exporter tool (2023) to output a total of 49.750 comments, of which 7.312 were interactive comments and 42.438 were simple shoutouts or comments without replies. Different types of comments come with different communicative dynamics, which requires methodological sensitivity to the patterns emerging either through conversational means or through imitation. Before delving into the comments that garnered the most attention based on replies, we examine users' alignments with video content, observed through "sticky words" (Ahmed, 2004) or word-emoji pairs extracted from shoutouts (see Figure 2). Methodologically, we treat word pairs as "memetic formulas" (Hagen & Venturini, 2023) or indicators of participatory amplification through frequent repetition of words extending into phrases, which we extracted from our translated text corpus using Bernhard Rieder's (2015) TextAnalysis tool.

Mapping out the intensities with which particular words appear together in response to the three memetic masterplots, we reflect on the study of comment sections as entry points into the affective resonances evoked by memes. Driving the interactive dynamics of online audiencing, comments in general and emojis, in particular, have been conceptualised not only as objects of cultural contestation but also as conduits for affective investment (Stark & Crawford, 2015; Boutet et al., 2021). The role of emojis in the comment sections is known to be contingent upon many contextual factors, including the social and cultural context in which an emoji is encountered, the bodily sensations it evokes and represents, and the meanings and associations it carries (Paasonen, 2015). With users shouting out past one another, emojis help us to trace the spikes of affective intensity that draw boundaries on certain trajectories and register through collective imitation rather than through engagement metrics. Conceptually, this allows us to access stickiness as defined by word-emoji combinations that stand out as affective amplifiers in that they are tied together through frequent, almost ritualistic, use (see Figure 3).

3.3 Networked masterplots: situation and suspense in propaganda memes

The 'fixed' elements of Katyusha masterplots fulfil varied but overlapping functions. While the videos invite potential replicators and commenters to engage with the message in a straightforward 'call-out fashion', the song is able to engage in more affective (non-cognitive) ways. It serves to aid affective intensities that establish momentary connections through audiences' envisioned attunement to 'the right

frequency' (Paasonen, 2019). The upbeat version of a folklore song that has collapsed with Russian identity and memory 'sets the affective scene' for the masterplots to (potentially) thrive.

3.3.1 Enticing response

Bridging platform functions with envisioned engagement, affective affordances emerge on the content level and on the level of the post's *audiencing* (Wang & Suthers, 2022). The analysed templates rely on 1) the techno-remix of Katyusha, and 2) the 'sticker-articulated' mode of situation and suspense, dissolving as the video performances reach their climax.

Figure 1

Figure 1 displays deidentified frames from the five most commented videos within each of the three templates. The metrics refer to the total number of comments and likes per video. What is striking about these numbers is how quickly these were amassed, given that the videos were published mere days before TikTok got severely restricted by the so-called Splinternet, meaning that people located within Russia stopped being able to access unrestricted feeds when not using a VPN.

Unlike binge-watching, where suspense keeps viewers hooked, in this context, it's the resolution of suspense that prompts the audience to engage and react. In Katyusha videos, situation and suspense are created with the aid of *content-level* affordances: the text stickers, the video effects, the hashtags, the sound, they all pertain to a highly dense expressive ensemble that sets up the stage for the propagandist message. The capacity of the message to entice response then unfolds across different trajectories of audiencing as it registers through imitation, renegotiation, or rejection.

In the memetic setting of the first Katyusha template, a sticker text stating in Russian "I am afraid: What if they attack?" demarcates the situation that extends into suspense through the embodied gesture of folding hands in a prayer-like fashion. When the performance is interrupted by a flashy video effect, allowing for the magical appearance of Putin, Kadyrov, and Lukashenko (or variations of these figures), suspense dissolves and the accompanying sticker text reads: "They will not attack". The resulting composition combines two propaganda temporalities: one of anxiety and one of affirmation. The first scene represents the anxious present and the next adds an imaginary twist to this present in which staged fear becomes obsolete.

Inverting the logic of 'predictive projection', the 'attacked' template reenacts what Finnin and Roozenbek (2022) have described as a characteristic reflection of the Kremlin's own intentions "based on what it says others will do first". Through a unified use of background effects, video stickers, and music, this template sets up a stage for the narrative propagated by Putin's government since the war's outset. The main message it conveys aligns with the Soviet imagination of an imminent Western threat, asserting: 'We' must attack first in order to prevent 'them' from even trying. By installing Putin's 'protective' figure in the middle of the frame, the plot resolves anxious anticipation in a series of adaptations sharing the same performative pattern.

By contrast, the second template (Subscribed) shares 'merely' the song and the sticker text. The absence of the video effect as an orchestrator of performance opens up the performative setting to seemingly unrelated adaptations, including a train journey to Moscow, soldiers with heavy armour, a living room, and a snowy playground. The first scene establishes suspense by asking: *"I wonder how many people will unsubscribe when they find out I'm from Russia?"*. The second scene increases tension as the sticker switches to the question *"And how many will subscribe?"* This interactive masterplot pertains to a tactic of audience instalment, where the revelation of national belonging extends into the video comment sections, inviting for the alignment of like-minded others. This template is clearly affirmation-seeking or inviting support through counter-imitation: "On the contrary, I will subscribe."

The design of the third memetic plot is similar to the second, in that it emerges via the shared song and a sticker text. Here the text in the first scene generates suspense by suggesting *"You are probably ashamed that you are from Russia?"*. The situation is set and the alleged attribution of shame amplifies the suspense. In the second scene, the suspense dissolves as the audience finds out how the performer is anything but ashamed, which is visually amplified in various ways: Some videos zoom in on the act of throwing away one's Ukrainian passport (and keeping the Russian), others involve the middle finger performed next to Putin engaged in the same dubious gesture.

The fact that all three memetic masterplots tap into the pattern of 'situation and suspense' (Wang & Suthers, 2022) invites critical reflection of the affective means through which pro-Russian propaganda is staged. Suspense builds up as a continuation of the situation, rhetorically questioning the audience's (imagined) stance: Should 'I' be afraid or ashamed, do 'I' still 'belong' or should 'I' unsubscribe? The punchline in the video stickers dissolves suspense almost instantaneously by means of counterimitation: afraid-not afraid, subscribed-unsubscribed, ashamed-not ashamed. However, these theatrical strategies are not solely accountable for the memetic potential of the plots, as it extends into other layers of expression through embodied gestures and TikTok-native content-linking strategies. The plot attunes the audience through music as it dissolves suspense, debunking possible affective alignments with negative affects. What captures attention is the desire for affirmation shared across all performances, which entices different responses. This undergirds how propaganda by means of TikTok sharing is not necessarily about

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straightforward ideological persuasion, but rather about the affective contours of signalling belonging: in- and outgroups come together through adaptation and reversal of the same messages extending into novel video performances and comments.

3.4 Audiencing: Sticky words, memetic formulas, and interactive comments

In this section, we demonstrate how two different types of comments – whether they frequently repeat as the so-called shoutouts without sparking any discussion or provoke further engagement through likes and replies – operate as prolongations of memetic masterplots across different affective trajectories.

3.4.1 Affective reverberations through emojified shoutouts

In the comment sections of fifteen videos representing the masterplots, the incongruences between the first and the last two templates can be observed in the patterns emerging from the use of frequently occurring word pairs or "sticky words" (Ahmed, 2004). The intensity with which specific words repeat together indicates the weight of co-word alignments. These alignments, in turn, generate phrases, extending into "memetic formulas" (Venturini and Hagen, 2023) analysed in Figure 2. To identify such formulas we looked for both words and emojis and, where applicable, included longer phrases (e.g., "On the contrary, I will subscribe" instead of "contrary subscribe" or "🇷🇺+🇺🇦=" instead of "🇷🇺🇺🇦"). Analytically, this allows us to access stickiness as defined by how words and signs work in relation to one another, creating affective ties that vary in their stance and intensity.

The rhythms of commenting rendered visible through patterns of repetition in the most frequently occurring formulas, register through iteration of the same message in response to video content rather than through conversation between users. The matrix in Figure 2 translates these rhythms into colour intensities using the logic of a heat map. Blue tones indicate the minimum of two, and red tones the maximum of 624 co-occurring word sequences within a video comment section. The persistence in the language of affirmative shoutouts "Glory to Russia", "Russia top", and "Russia is power" running through the second and the third templates testifies to the overall patriotic stance of the comments and video performances alike. The dominant shared pattern here is clearly that of the affirmation of Russian authority, which takes a slightly different shape in the first template due to the specificity of video design and commentators' preoccupation with the use of visual effects and requests to "make a tutorial".

The use of emojis, at the same time, connects the comments in all three templates, shifting the analysis towards the question of "sticky signs" (Ahmed, 2004) and their role in the increase of affective value invested in online-mediated expressions of belonging. Here, Katyusha's nostalgic sentiment and users' comments produce a reciprocal feedback loop where the videos' ability to provoke affective response enacts literal acts of imitation. Through repetition and combination, as our analysis suggests, emojis become "saturated with affect, as sites of personal and social tension" (ibid., p. 11). The alignment of different emojis appearing in the same comment, therefore, comes with a certain extent of amplification. For example, emojis ❤️🇷🇺 and 🇷🇺💪 tied together to communicate the ideals of strength and love for the nation were used on repeat in reaction to videos shaming those who had unsubscribed (template two) and glorifying those who are not ashamed to be Russian (template three). The main function of both is to create a sense of belonging to a particular community as well as a sense of pressure to conform to its norms and values. In the second template posing the question "I am wondering how many would unsubscribe if they knew that I am from Russia?", this pressure becomes evident in the intense reposting of one-liners such as "signed up 🥰" and "On the contrary, I will subscribe", the latter being the most used shoutout across all comment sections.

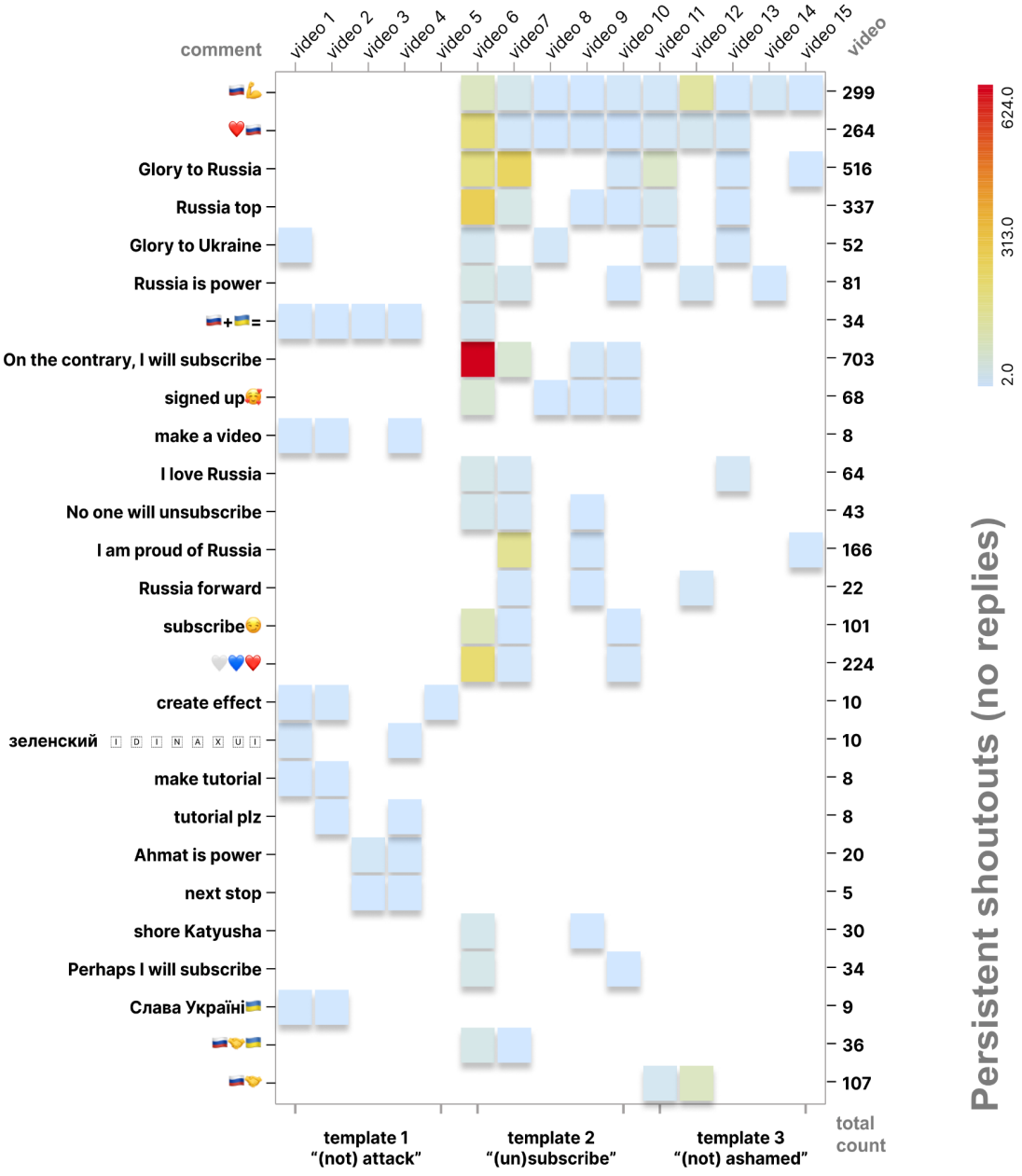

Figure 2

A matrix visualising the distribution of word pairs extracted from a total of 42.438 top-level comments without replies across fifteen video comment sections. The total count (on the right) represents the absolute number of posts a word pair appears in. The order of the videos on the x-axis represents three templates. The order of word pairs on the y-axis represents the extent of their persistence across video comment sections.

In the comments of the first template "What if they attack?", the idea of shared national pride took an even more cynical trajectory in the use of emojis combining the national flags of Russia and Ukraine. The resulting equation "🇷🇺+🇺🇦=" targeted at the unification of national attachments strives to create an effect of a collective coherence shortly after Russia declared the beginning of the so-called "special military operation". The alleged purpose of the operation is well documented, and the use of the equation

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in the replies to content creators celebrating Putin, Lukashenko, and Kadyrov as the great protectors of Russian national unity is hardly accidental. According to the official address by the President of the Russian Federation from 24 February 2022, the Russian war of aggression in Ukraine – or the "special military operation" – has been triggered to solely "protect the people" in the Russian-speaking Ukrainian regions who "for eight years […] have been facing humiliation and genocide perpetrated by the Kyiv regime" (Kremlin.ru, 2022). This language is quite remarkable, not only because it plays down the enormous dimensions of suffering that the war continues to cause, but especially because its main message is that of cultural assimilation explicated by the equations' simple solution: "🇷🇺+🇺🇦=🇷🇺" (see figure 3).

Date	♡	Comment	Translation
2022-02-27 07:34:57	2	🇷🇺+🇺🇦=🤝❤️	🇷🇺+🇺🇦=🤝❤️
2022-02-27 10:30:00	3	КАДЫРОВ МОЩЬ 😎🤘 Я ЗА МИР 🇷🇺+🇺🇦=🇷🇺	KADYROV POWER😎🤘 I'm for peace 🇷🇺+🇺🇦=🇷🇺
2022-02-27 10:57:43	0	🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺Зеленский 🇮 🇩 🇮 🇳 🇦 🇽 🇺 🇺 🇮 +🇺🇦=🇷🇺 Слава РОССИИ🇷🇺 ПУТИН 🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺	🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺 Зеленский 🇮 🇩 🇮 🇳 🇦 🇽 🇺 🇺 🇮 +🇺🇦 =🇷🇺 Glory to RUSSIA🇷🇺 PUTIN 🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺
2022-02-28 06:24:21	0	я за мир:🇷🇺+🇺🇦 =🇷🇺	I am for peace: 🇷🇺+🇺🇦 = 🇷🇺
2022-02-28 07:46:44	6	я за мир 🇷🇺+🇺🇦 =🇨🇳	I am for peace 🇷🇺+🇺🇦 = 🇨🇳
2022-02-25 11:04:02	670	!!!Мы за мир!!!🇷🇺+🇺🇦=🇷🇺	!!! We are for peace !!! 🇷🇺+🇺🇦 = 🇷🇺
2022-02-25 15:34:07	1	я против войны 🇷🇺+🇺🇦=🇷🇺	I am against the war 🇷🇺+🇺🇦 = 🇷🇺
2022-02-26 19:42:36	176	Мы за мир 🇷🇺+🇺🇦=🇷🇺 ❗	We are for peace 🇷🇺+🇺🇦 = 🇷🇺 ❗
2022-02-27 17:40:03	1	я за мир!🇷🇺+🇺🇦=🇷🇺❤️	I am for peace! 🇷🇺+🇺🇦 = 🇷🇺❤️
2022-03-10 18:03:02	0	мы за мир!🇷🇺+🇺🇦=🇷🇺❤️распространите ❗	We are for peace! 🇷🇺+🇺🇦 = 🇷🇺❤️ Spread ❗
2022-02-26 05:43:22	114	Я за мир ! 🇷🇺+🇺🇦=🇷🇺	I am for peace! 🇷🇺+🇺🇦 = 🇷🇺
2022-02-26 07:08:29	7	!!!Мы за мир!!!🇷🇺+🇺🇦=🇷🇺	!!! We are for peace !!! 🇷🇺+🇺🇦 = 🇷🇺
2022-02-26 13:15:58	2	🇷🇺+🇺🇦=Чечня./будем жить мирно,детишки	🇷🇺+🇺🇦 = Chechnya./We will live peacefully, kids
2022-03-04 19:47:51	1	🇷🇺+🇺🇦=🇷🇺	🇷🇺+🇺🇦 = 🇷🇺
2022-03-03 17:42:57	0	Я за мир!🇷🇺+🇺🇦+🇺🇸=🇰🇿	I am for peace! 🇷🇺+🇺🇦+🇺🇸 = 🇰🇿
2022-03-03 19:08:09	1	🇷🇺+🇺🇦=🇷🇺	🇷🇺+🇺🇦 = 🇷🇺
2022-03-04 18:56:33	0	🇷🇺+🇺🇦+🇰🇿+🇧🇾+🇺🇿+🇬🇪+🇦🇲=🏴	🇷🇺+🇺🇦+🇰🇿+🇧🇾+🇺🇿+🇬🇪+🇦🇲 = 🏴
2022-03-04 19:30:12	0	нет войны 🇷🇺+🇺🇦=🇷🇺	no war 🇷🇺+🇺🇦 = 🇷🇺
2022-03-04 20:13:20	0	вообще я за мир!!!🇷🇺+🇺🇦=🇷🇺	In general, I am for peace!!! 🇷🇺+🇺🇦 = 🇷🇺
2022-03-04 19:31:53	0	🇷🇺+🇺🇦=🇷🇺 давайте жить дружно!? 🥹	🇷🇺+🇺🇦 = 🇷🇺 Let's live together and be friends!? 🥹
2022-03-04 22:18:37	0	🇷🇺+🇺🇦=🇷🇺это факты.	🇷🇺+🇺🇦 = 🇷🇺 These are facts.

Figure 3

Fragment of a string of 34 comments using pro-Russian flag emoji equations in the comment sections of the videos representing the first template. Some of the comments were published in February 2022 shortly after Putin declared his "special military operation". Most equations promote the idea of peace through Russian unity. Notable deviations from the formula include additions such as "Go fuck yourself, Zelensky", references to Chechen involvement in the Russian invasion of Ukraine, as well as Soviet nostalgia. Comments of this type were publicly shared and aggregated en masse in different contexts of pro-Russian propaganda, which prevented them from being attributed to specific videos or individual users.

The empire language and logic that relies on inequality and subordination (Gorobets, 2022) is what drives the equations, introducing the symbolically laden idea of Russian supremacy through seemingly innocent exclamations such as "no war 🇷🇺+🇺🇦 = 🇷🇺", "I am against the war 🇷🇺+🇺🇦 = 🇷🇺", and "I am for peace:

🇷🇺+🇺🇦 = 🇷🇺". Once again, the sticky alignment of words and flags in comments occupies an important position in the template's overall affective force. The desired containment of Ukraine under Russian symbolic and territorial order here comes to the fore as a cynical equation relentlessly repeated, appropriated, and modified 'in the name of love' and in sync with Katyusha's catchy tune.

3.4.2 Dissonant intensities in conversational comments with replies

Inherent to participatory propaganda, the memetic masterplots are designed to alert and make the audiences pay attention to the same extent as they offer reassurance. At the same time, while masterplots can work as instruments of bonding, they can also be sensed as ridiculous or absurd, prompting engagement that challenges the propagandist message. Unlike mere repetitive shoutouts, the comments with replies explicate a type of sticky intensity, which registers through interactions and makes protagonist and antagonist sentiments collide, increasing the heat. In replies to the three propagandist templates, however, the entanglements between pro-Russian comments and more critical engagements were rare. The dissonant comments which met *some* affirmation, did not reach the point of establishing firm associations due to the prevalence of replies supporting the propagandist intentions instead. Highlighting the videos' absurdity, alternative alignments did not gain traction as – unlike the shoutouts – they were not 'surfing on the right frequency'.

Such rare examples of dissent were part of the most replied-to comments in the 'attacked' template, celebrating pro-Russian political leaders as the reason why 'the West' wouldn't dare to attack. Producing debate, almost all these comments expressed ambiguous and nuanced feelings vis á vis the propagandist message. In the comment section of the most commented 'attacked' video, two of the top five most-replied-to-comments directly contest the propagandist masterplot. The first is preempting accusations of being unpatriotic by saying: *I am from Russia and I am a patriot of Russia, but I do not support the current President Putin.* The second points out that the whole 'fear of being attacked' borders on absurdity when the only attacking side is 'your own' (*But you attack!*).

Delegitimising alignments with Putin's current policies, the first most replied-to comment draws the line between Russian patriotism and support for the current political regime. While this comment received significantly fewer likes (67 where the protagonist replies received between 2,5k to almost 12k likes), users were enticed enough to engage in amplifying this critique or pushing back on it. Push-backs in particular referred to the strength of the Russian army, portraying Putin as a strong leader who "turned Russia into a global powerhouse". In contrast to the comment itself, the replies boasted about Putin's ability to shore up the military strength of Russia, affirming the propagandist message. The comment pointing out the absurdity of being afraid when your party is the one who invaded in the first place mostly triggered responses like "Glory to Russia" conveyed through repeated RU flag emojis (🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺🇷🇺). Outgroup commentators found themselves outnumbered and any response they made only amplified the overall pro-Russian stance. Here, outrage was not only overshadowed by in-group support, but it also served the masterplots' mission to inscribe one-sided belongings.

Three other comments with replies were linked to the suspense element of the 'attacked' masterplot, transporting affects such as insecurity and precarity in speculations about Russia facing a fate similar to Syria if NATO intervened. In one of the comments, names were added to an imagined list of political leaders who would support Russia, including Trump. The list sparked responses indicating that (in particular) without Trump in office he would be a useless ally. Further replies delved into claims about Trump's allegiance – "He changed his shoes" – prompting debates on whether Trump would support the war in Ukraine and on who possesses enough information to make such assertions. Such subtle disagreements deserve further elaboration as they appeared in multiple variations, regardless of the initial comment's stance. For example, the idea of an 'imperialist fantasy' involving Russia being supported by China triggered responses questioning China's supposed pro-Russian position. Despite efforts to divert the pro-Russian narrative, these attempts often struggled against the recurring reassuring comments, like:

"Ah, China has always been a friend to the USSR. And also other countries like India, Brazil, Kyrgyzstan, Belarus, Tajikistan, Azerbaijan, etc., will support us."

A similar strategy reappears in the replies to the comment about being a patriot of Russia but not supporting Putin: *"Putin doesn't lose. All nations acknowledge this and fear conflict with 🇷🇺."* Further replies amassed by similar comments confirmed that in a communication environment where "nuance takes too long" (Dean, 2021, p. ix), ambiguous positions struggle for attention. Sarcasm, aligned with a patriotic stance, prevents anything more intricate than simple emoji-based interactions from gaining traction. In the replies to the attack template, this showcases how alternative opinions and attempts at conversation merely serve the propagandist intentions. Determining whether these interactive dynamics are spontaneous or coordinated is beyond this article's scope. However, by revealing an unequal landscape of engagement, the audiencing of propaganda unveils some of the TikTok-specific means of participation and amplification.

3.5 Propaganda by other means: networked masterplots and music as affective glue

Acknowledging the impact of aural linkages in what Boler and Davis (2021) refer to as 'propaganda by other means', the methodological contribution presented in this article is twofold: Repurposing TikTok's sound infrastructure to detect memetic patterns first allows scholars to reflect on propaganda's affective linkages. Exploring how imitation publics transition from video adaptations to comment sections then reveals resonances and dissonances that expand the masterplot. In studying these relations, we argue for a situated analysis of video metadata and networked patterns across different layers of TikTok engagement – such as metrics, hashtags, sticker text, video effects, comments. It must be noted that the stickers and video effects were pertinent for the case study of Katyusha, but other content formations may rely on different features. By incorporating TikTok features in the methodology, the study thus offers sensitivity to their role in shaping persuasive content within the platform's attentional infrastructure. Against this background, we especially highlight the need to 'take the comments seriously' (Reagle, 2015), as these provide clues about the propagandist incentives and their bonding potential. We stress that while such contextual information is always crucial to the analysis of platform cultures, being mindful of its situatedness in the participatory nature of propaganda audiencing requires ethically attuned methodological pathways.

Our case study shows that templates on TikTok draw their engaging force from the combinations of different expressive modalities. A sound that carries templatable masterplots pre-sorts the audience in such a way that it enhances the likelihood of envisioned alignments. The role of Katyusha as a networker here is crucial: it is complicit in amplifying the propagandist message provided by the masterplot while stratifying audiences and attuning them to the shared sentiment. The suspense evoked by the videos extends into the comments sections, translating into sticky shoutouts and establishing in- and outgroups through interactions. The *dissolvement* of suspense, then, constitutes the masterplots' affective charge. Given away by the beats of Katyusha, it instals the 'pleasure' of seeing a pro-Russian positionality materialising in the envisioned 'crowd' of like-minded others.

All three templates follow a 'masterplot', revolving around an introspective contemplation of what it means to be Russian in the context of war and in relation to 'others'. The expression of national belonging in both video performances and comments involves a particular kind of collective identity performance. Such a "showing of sharedness" (Frosh, 2012) is always addressed to others, allowing the "I" and the "we" to be aligned in the affirmative act of subscribing to the 'Russian idea' of uniqueness and purpose. The pro-Russian frequency of alignments does not exclude dissonances. However, our analysis shows that the attempts at contestation compete over user attention against an amassed and coordinated public. While comments are equal contributions in and of themselves, propagandist intentions benefit from the unequal capacities of circulation (Dean, 2021). Without substantive repetition of the alternatives, Katyusha templates remain sticky with affirmations of pro-Russian sentiment.

The decentralised nature of TikTok content circulation, not only elevates propaganda's contingency on participatory practices, but it also entails more embodied ways of 'syncing into' the rhythm. Music – as it always did for propaganda (Jones, 2017) – creates a setting and an affective pathway that, on TikTok, carries templatable narrations of boundary work. The layered combinations of music and video performance entice imitation and spur repetitive replies that bolster propaganda's stickiness. Propaganda by means of TikTok sharing centres on bonding, rendering political persuasion secondary. In order to coordinate audiences into a shared sentiment, signifiers of a 'certain crowd' are made visible through the networked layers of expression that make up pro-Russian templates: the song, occasionally aided by hashtags, effects, gestures, or other cues of belonging do the work of in-group signalling. In so-doing, networked templatability paves the way for the support of the like-minded through further appropriations and comments. Capturing attention by way of suspense, the masterplots then reinforce what the imagined pro-Russian audience allegedly seeks: affirmation.

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