

Digital Witnessing in a Pandemic: An Assemblage Analysis of the Twitter Hashtag Network #MassTestingPH

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ABSTRACT

As publics witness the COVID-19 pandemic predominantly online, the mediation of digital technologies shape how they perceive, experience, and evaluate the crisis. We conceptualize digital witnessing to characterize these mediated forms of witnessing emerging from the interplay of assemblages of actors, texts, and technologies governed by the affordances and logics of digital media. We draw from Frosh and Pinchevski's (2014) theorization of witnessing as an assemblage and Frosh's (2019) world-witnessing to examine the network #MassTestingPH, which consolidated calls by Twitter publics to conduct mass testing in the Philippines. Through a three-level analysis using social network analysis, content analysis, and semantic network analysis of over 70,000 tweets, our findings illustrate the reconfiguration of witnessing processes by indefinitely subjecting witnessing networks, discourses, and assemblages to redirection, re-embodiment, and resignification. We argue that this renders digital witnessing the capacity to reproduce multiple meanings, to reconstruct witnessing events, and to redefine power relations. This research advances theoretical and methodological approaches to witnessing research in contemporary media.

Keywords: assemblage, hashtags, network analysis, Twitter, witnessing

INTRODUCTION

As part of the measures to mitigate the spread of the Coronavirus 2019 (COVID-19), the Philippine government implemented varied iterations of community quarantines, limiting mobility within and across regions. These measures have constrained access to reliable information, opportunities for first-hand experiences, and venues for social action. The pandemic has been primarily witnessed by Filipinos instead through digital media, where they also articulated criticisms of the inefficient state action and lack of concrete plans in managing the crisis. Prominent in these online mobilizations is the call for mass testing under the hashtag #MassTestingPH, which became central to the users' demands to improve government response towards the pandemic (Nonato 2020).

As Filipinos experience the crisis and provide their accounts of reality, witnessing undergoes processes of mediation. Earlier studies on witnessing by Peters (2001) and Frosh (2006) emphasize the role of media institutions as intermediaries in the dissemination of testimonies from event witnesses. Focus is also given to the world-making properties of witnessing texts that enable individuals (as audiences) to imagine themselves in another time and space articulated in witnessing accounts (Frosh 2019). However, in contemporary media environments, testimonies are created through and interact with features particular to digital media – interactive objects, networked structures, and multiple platforms – and they shape perceptions and experiences of events distinct from traditional conceptualizations of mediated witnessing. It is crucial to examine how socio-technical elements interact with witnessing intermediaries and texts to determine how events are told and how realities are reconstructed in digital spaces.

In this study, we problematize how witnessing is shaped in digital spaces. We explore the complexities of witnessing through the case of #MassTestingPH on Twitter, drawing from Frosh and Pinchevski's (2014) theorization of witnessing as an assemblage to identify the heterogeneous components such as digital objects and structures that constitute witnessing accounts, and to examine the witnessing discourses emerging from the interactions among these components. We also expand on the concept of world-witnessing by Frosh (2019) where "digital networks themselves constitute witnessable worlds operating in adjacency to the life worlds of physical existence" (112) by mapping the witnessing network of #MassTestingPH and how it constructs and transforms witnessing events. Through these analyses, we conceptualize 'digital witnessing' as forms of mediated witnessing emerging from the interactions and intersections of assemblages of actors, texts, and technologies governed by the affordances and logics of digital media.

Our study utilizes a three-level assemblage analysis to disentangle the complex interactions existing among multimodal elements and structures in digital spaces. Social network analysis describes the scale and the structure of the witnessing network and identifies specific witnessing clusters and

influential witnesses in the assemblage. Content analysis brings to the surface emerging discourses distinct from the dominant discourse around #MassTestingPH, and semantic network analysis explores practices of signification that form the witnessing assemblage.

Our analysis illustrates how witnessing is reconfigured by digital media and its affordances and logics. Witnessing accounts that are co-constructed by diverse actors are made meaningful through multiple frames and modes of witnessing afforded by Twitter. The interactions of these actors, texts, and technologies consolidate and fragment the witnessing event, sustained by connective and collective action in the network. We argue that these processes render the witnessing assemblage the capacity to reproduce multiple meanings, reconstruct witnessing events, and redefine power relations – conditions that characterize contemporary mediated witnessing.

ASSEMBLAGE OF WITNESSING: MEDIATION, MATERIALITY, AND MOBILIZATION

Media Witnessing and Witnessing Crises

In its simplest sense, to witness means to be a direct observer – a spectator of an event as it happens. Yet scholars of witnessing agree that bearing witness goes beyond spectatorship, as witnesses possess the capacity to recreate realities in recounting events before audiences (Peters 2001; Frosh and Pinchevski 2009; Kyriakidou 2015; Chouliaraki 2015). In doing so, audiences become co-witnesses to the event (Kyriakidou 2015). Peters (2001) succinctly presents the overlapping complexities of the concept when he states that “the witness (speech-act) of the witness (person) was witnessed (by an audience).” In some contexts, to be a witness is also to perform a role, an internally motivated act spurring an individual to share their version of reality (Peters 2001, 709).

Bearing witness to an event involves translating experience to discourse (Frosh and Pinchevski 2009). As witnesses move from the passive phase of the act (directly seeing or experiencing the event) to its active phase (recounting events through discourse), they are placed in a position of reproducing knowledge of the event, often in divergent ways (Peters 2001). Multiple accounts result from differences in recall, honesty, presence, perception, and scale of the event being recounted by witnesses (Frosh 2006). These differences constitute the “veracity gap” in witnessing (Peters 2001) and make events almost impossible to be objectively reconstructed.

Mediation is seen as the root of this issue (Peters 2001). In contemporary society, witnessing acts not only get mediated through language in interpersonal communication; they are also augmented to mass audiences through technological media (Frosh and Pinchevsky 2009). As crises are retold through mass

media channels, the media become primary witnesses to events, and audiences are forced to bear witness to events unfolding through the media. This phenomenon is known as media witnessing, or “the witnessing performed in, by, and through the media” (Frosh and Pinchevsky 2009).

In traditional media witnessing, the role of witnesses is assigned to journalists who provide testimonies to audiences through reports, or from invited speakers who make testimonies on screen. However, with the drastic changes in the media landscape, media witnessing has been reconceptualized. The pervasiveness of witnessing acts has become even more pronounced in digital spaces when testimonies regarding events are made primarily by multiple, networked users in the form of social media posts and crowdsourced content. Thus, “audiences” can no longer be considered as second- or third-degree witnesses to an event, as previously argued by Kyriakidou (2015). They occupy the same position as journalists and reporters in producing testimonies, transforming the act of media witnessing as it transpires in networked environments. Mortensen (2015) refers to this as “connective witnessing,” which refocuses on the individual both as (1) a first-hand witness providing testimonies to participate in a larger collective action and (2) an audience witnessing mass-mediated events (Mortensen 2015).

Media witnessing also presents viewers with a sense of involvement because of the various media modalities at play in its representations of crisis situations. At the same time, they get a sense of powerlessness, because of their distance from the victims of crises (both in space and time), which can leave audiences in affective, ecstatic, politicized, and detached states (Kyriakidou 2015). In contemporary media witnessing, particularly connective witnessing, witnessing is a form of participation in aid of the crisis being witnessed. By documenting the event as it unfolds through social media posts (i.e., reporting the magnitude of movements and describing the conduct of various actors), individuals are able to contribute to the collective goal of gaining visibility and support in various forms (Mortensen 2015).

Witnessing as an Assemblage

The pervasiveness of digital technologies has reconfigured the process of witnessing in ways that dispute and diminish existing theorizations of witnessing. First, the presumption that there is a single ‘verifiable’ rendition of witnessing events (Peters 2001) in digital media is undermined, given the media’s postmodern character defined by imitation (Shifman 2014), artificiality (Adatto 2008), and hyperreality (Baudrillard 1994). Second, the linear, top-down cascade of witnessing accounts through and by mainstream media (Frosh and Pinchevski 2009) is destabilized by the networked distribution infrastructure inherent in social media. Lastly, earlier discussions of witnessing through ubiquitous mobile technologies (Mortensen 2005; Anden-Papadopoulos 2013) has afforded virtually anyone to

be first-hand witnesses, “each with their own interest, vying for visibility” (Chouliaraki 2015, 1372). However, these conceptualizations remain within the framework of individualized witnessing, and designate technologies as offering possibilities rather than constituting the witnessing.

Frosh and Pinchevski’s (2014) more recent work problematizes witnessing practices in digital spaces and theorizes witnessing as an assemblage. Drawing from the philosophy of Deleuze and Guattari, an assemblage, or “agencement” in French, is a “composition of heterogeneous objects that function and intersect coextensively, establishing liaisons and relations between different elements which are constantly subject to change and to movement” (Frosh and Pinchevski 2014, 602). Multiplicity characterizes assemblages, whose relations are organized not by their *essence* but by the occurrence of social, historical, and material events to perform certain functions (Nail 2017). This means that the assemblage is constantly animating and changing through deterritorialization processes, which sets the conditions of the assemblage for consolidation, dispersion, and transformation (Deleuze and Guattari 1987).

Particular to witnessing, the assemblage is composed of material objects, bodies, and technologies that define the “states of things,” and expressive signs, images and expressions that form the “states of utterances” (Frosh and Pinchevski 2014). The interplay of these material and expressive elements mobilize the assemblage towards and against particular directions – of territorializing witnessing events by consolidating compatible testimonies; deterritorializing by dispersing testimonies to disparate actors and spaces; and, reterritorializing by transforming testimonies into new contexts, meanings, and agenda. The capacity of digital media for the reproduction of instances from the instant into material texts and images positions witnessing as a “perpetual reconstruction of futurity” (Frosh and Pinchevski 2014, 601) where the events are always subject to redirection, re-embodiment, and resignification. The assemblage is thus potentially rendered “testimonial agency” to enact and construct witnessing events (Frosh and Pinchevski 2014). These witnessing assemblages online are later argued by Frosh (2019) as “witnessable worlds,” co-existing with the physical world and serving as a basis for constructing perceptions, experiences, and judgment.

Witnessing as a Political Act

The affordance and logics of digital media make witnessing acts online almost synonymous with political participation (Martini 2018). Individuals on social media participate politically by producing and distributing content reflective of how they see events in society, much like how testimonies operate in traditional media witnessing. Digital media become “organizing agents” (Bennett and Segerberg 2012, 752) that enable self-motivated participation to be recognized, acted upon, and shared by others.

In networked environments, political participation may provide a semblance of collective action, but the absence of formal coordination and shared identity among diffused individuals prevent them from truly acting as a collective (Bennet and Segerberg 2012). Participation has become personalized, diverging from the active citizen model that largely considers democratic engagement only in terms of electoral behavior and membership in formal organizations (Loader, Vromen, and Xenos 2014). Thus, as young people engage more in non-formal and non-hierarchical forms of political participation, social networking sites are filled with images, videos, and personal accounts and perspectives of individuals about social events, often shared by like-minded users. Most of the political actions taking place digitally are connective rather than collective and are presented as acts of witnessing (Mortensen 2015).

This is not to say, however, that digital media limits participation at a connective level. Connective action may evolve into a formally organized collective over time, especially with “new affordances that inspire new politics” (Bruns and Burgess 2015). On Twitter, one of these affordances is the hashtag which serves as a starting point of articulating and constructing a collective agenda or identity. By coordinating information exchanges, bringing conversations to wider publics (Bruns and Moe 2014), and aligning meanings among individual users witnessing an event (Pond and Lewis 2019), hashtags function to call, engage, and construct an imagined community (Bruns and Burgess 2015). Initially serving as markers of topics and facilitators of discussion, #BlackLivesMatter (Lundgaard 2016) and #MeToo (Mendes, Ringrose, and Keller 2018) have organized previously dispersed publics to become massive social movements. Hashtags are argued to possess the capacity for cultural generativity (Burgess 2012) that propels users to act in particular ways (Rambukkana 2015). While this capacity for cultural generativity does not always translate into movements and communities, it offers possibilities for counter-discourse and collective action that render it potent to undermine dominant power structures.

METHODOLOGY

#MassTestingPH as Hashtag of Analysis

At a time of physical distancing, online social formations serve as an alternative, if not a primary, form of publics engaged in social, cultural, and political dialogue. While communities and personal networks are formed because of mutual interests and shared connections, hashtag publics (Rambukkana 2015) come together only to articulate, corroborate, and disseminate testimonies around witnessing events consolidated by the hashtag (#).

Multiple hashtag publics witnessing various aspects of the COVID-19 pandemic occupied the Twitter trending list but most were short-lived. #MassTestingPH was consistently present throughout the pandemic beginning March to June 2020, trending on multiple occasions from late March to mid-April. #MassTestingPH communicated the online publics' reception of the government response towards the health crisis. Its longevity compared to other pandemic-related hashtags, the amount of engagement it generated, and its direct and apparent link to the crisis event make it a viable case for examination.

Data Collection and Preparation

We collected a total of 70,578 tweets from March 16, 2020 to April 7, 2020 that contained the hashtag #MassTestingPH using Sysomos, a social media listening tool. The collected tweets were categorized as quoted tweets (beginning with QT), retweets (beginning with RT), replies (beginning with an '@' symbol), mentions (do not begin with '@' but contain any word beginning with '@,') and just tweets (everything else).

Using R, we extracted a network edgelist that identified the source of a network connection (tweet poster) and its receiver (any user mentioned in the tweet). We assumed that any word that started with '@' was an existing Twitter user, and in some cases, a source was connected to multiple receivers. A total of 99,818 relationship pairs were identified. R was used to extract the websites and other hashtags contained in the tweets, and NodeXL Pro, a Microsoft Excel add-in, was used to visualize and analyze the social network, content, and the semantic network of the tweets.

Data Analysis

Conceptualizing witnessing events in digital spaces as an assemblage requires an examination of their constitutive elements. Through a three-level assemblage analysis, we described and explored the structure of the witnessing network (through social network analysis), the content of the witnessing accounts (through content analysis), and the interactions among different material and expressive elements within the witnessing assemblage (through semantic network analysis), which give rise to the (re)construction and (re)signification of events.

Social Network Analysis

We performed social network analysis (SNA) to understand the scale of the witnessing event, to reveal patterns of connective acts on Twitter, and to identify influential nodes in the whole network. We used

the Clauset-Newman-Moore (CNM) algorithm, a social network algorithm detecting convergence of individual users to specific topics or areas of interest (Clauset, Newman, and Moore 2004). The focus of the CNM algorithm makes it appropriate for analyzing social networks emerging from discourses on social media.

We referred to the following global and local network measures to characterize the witnessing network:

- Network size: total number of unique nodes (users) in the network, providing insight on the scale of the witnessing network through the number of users who posted tweets with or related to the hashtag #MassTestingPH.
- Network density: connectedness among all members of the network, indicating the amount of interaction taking place between witnessing acts. Network density scores range from 0 to 1, and a score closer to 1 indicates highly dense networks (i.e., all members interact with each other).
- Modularity: level of fragmentation of the overall network into distinct clusters or groups. Networks with a modularity score of 1 means that clusters are completely defined (or fragmented, in this case), with no shared members.
- Number of groups: total amount of clusters identified by the CNM algorithm.
- Edge type distribution: composition of the witnessing network based on tweet type, which helped characterize the formation of the witnessing network based on the affordances of Twitter.

Content Analysis

By subjecting the witnessing network to automated content analysis, we were able to identify the top words, word pairs, and hashtags in the tweets overall and per cluster. Given the high fragmentation of the witnessing network, we limited the generation of top network items to the top 20 clusters (out of the 684 clusters), which contained 44,933 out of the 50,243 users in the network, or around 89.43% of the total network members.

From here, we identified the discursive formations, or groups of statements within a system of dispersion that form regularities from “the interplay of relations within it and outside it” (Foucault 1969, 41) emerging from the clusters by identifying salient words categorized as either material (physical objects, digital objects and referent persons) or expressive elements (descriptive phrases, affective statements, and calls to action). These elements not only define the boundaries of the clusters

from each other, but also signify their discursive distinctions (e.g. differences in call to actions from two different hashtags) for further examination through the semantic network analysis.

Semantic Network Analysis

We performed a semantic network analysis on the selected clusters to surface territorializing, deterritorializing, and reterritorializing processes emerging from the interaction of various elements in these discursive formations. Using NodeXL, we identified elements and the patterns of connections among them, presented as a semantic network:

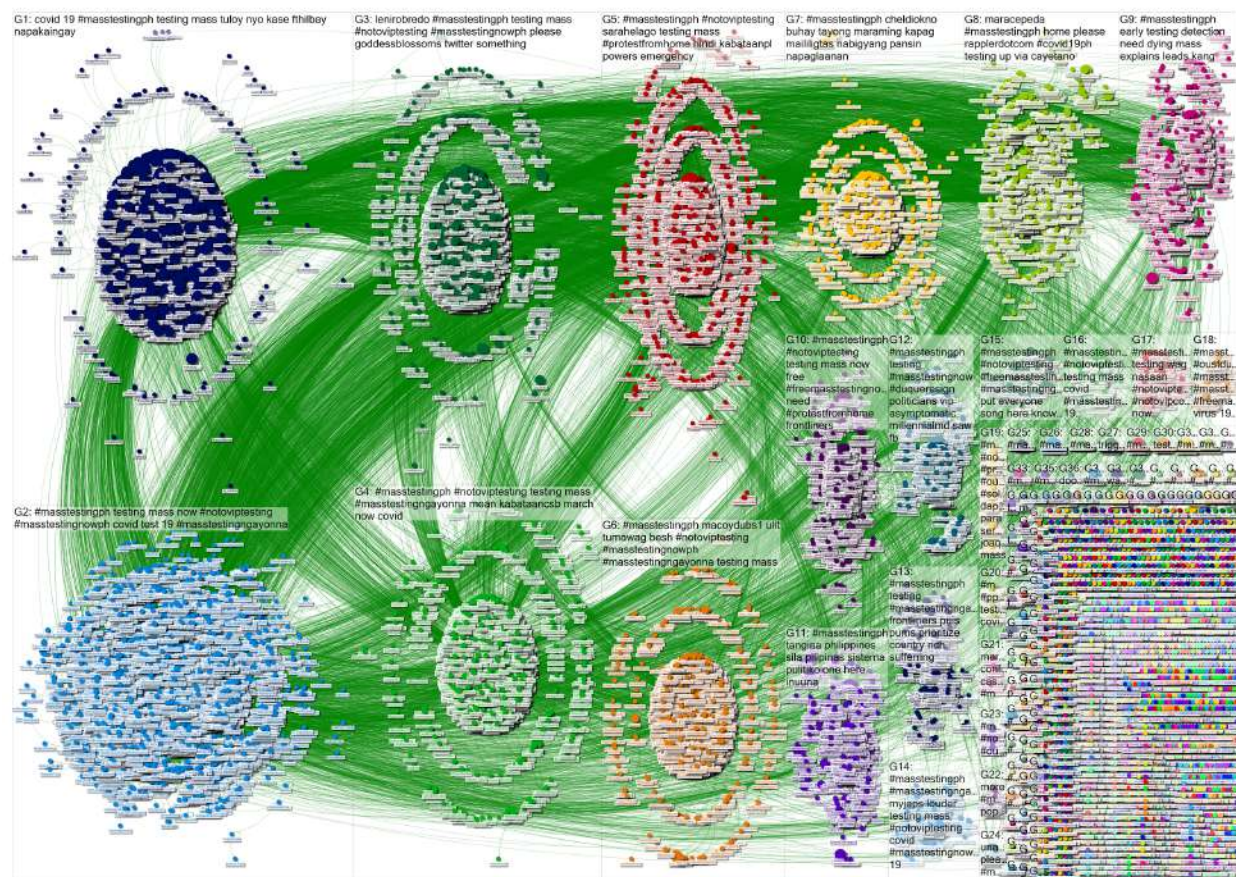
- The size of the nodes per semantic network indicated the saliency of the material and expressive elements defining the discursive formations. Since the semantic network contains thousands of elements, we removed those that appeared/uttered less than 10 times in the collected tweets, surfacing elements that were significantly repeated and articulated throughout the network.
- The strength of connections among elements based on the thickness of the line linking these elements revealed the utterances frequently made and shared by other users within each discursive formation.
- The order of articulation of the salient elements provides insights on how events are constructed and signified. By examining how expressive elements characterized salient material elements, as well as describing how material elements are linked to expressive elements, we were able to examine processes of territorialization, reterritorialization, and deterritorialization of #MassTestingPH as a digital witnessing event.

NETWORKS, DISCOURSES, AND ASSEMBLAGES OF DIGITAL WITNESSING

Witnessing Network

Our examination of the hashtag network #MassTestingPH starts with mapping the witnessing network of witnesses and witnessing actors. Our findings indicate the multiplicity of witnessing accounts consolidated within the hashtag from 50,243 Twitter users constituting 99,818 relationships (Figure 1).

Social media network connections among Twitter users

Created with NodeXL (<http://nodexl.codeplex.com>) from the Social Media Research Foundation (<http://www.smrfoundation.org>)**Figure 1. Clustered users in the #MassTestingPH Twitter hashtag network.**

We observe that the network expanded within the period of data collection mostly through online echoing behaviors, in the form of quoting (54.94%) and retweeting (36.39%) others' content. Table 1 below presents the distribution of posts per type of tweet.

Type of tweet	Number of Relationships	Percentage
Quoted tweet	54,842	54.94%
Retweet	36,323	36.39%
Tweet	6,587	6.60%
Reply	1,282	1.28%
Mention	784	0.79%
Total	99,818	100.00%

Table 1. Tweet type and relations in the #MassTestingPH Twitter hashtag network

Our quantitative findings indicate the extent of dispersion and fragmentation of the network, based on network density and modularity. Global density scores are very low (0.000035), and network modularity scores indicate the formation of distinct local communities or clusters (0.67). These scores reveal a highly fragmented and loose network, signifying multiplicity of witnessing acts operating within the hashtag #MassTestingPh. A total of 684 local clusters were identified, with 89.43% of users belonging to the top 20 clusters. The rest of the users exist as isolates or pendants (connected only to one tie), performing mainly as witnessing audiences to the crisis event, although connected to the network through the hashtag. These users were excluded from the analysis, given that our study was more interested in tweets that generate connective engagements, such as retweeting, replying, or mentioning. Moreover, it would not be feasible to subject the remaining 674 clusters to semantic network analysis and discourse analysis.

Centrality measures revealed specific users considered as influential in shaping the discourse of the witnessing network, as evidenced by the number of interactions they get from other users. Table 2 shows the top users in terms of prestige or importance (based on eigenvector centrality), popularity (in-degree centrality), and engagement (out-degree centrality). Actors that hold elite influence, such as government officials (@lenirobredo and @sarahelago), key political figures (@fthilbay and @ChelDiokno), and the media (@PhilippineStar) are considered influential, based on their eigenvector and in-degree centrality scores. However, the emergence of grassroots movements (@kabataanCSB), ordinary users (@goddessblossoms and @allihiaSJ), and online content creators (@macoydubs) as influential nodes in the network challenge elite-exclusive definitions of influence in mediated discourses. This indicates that the locus of witnessing has shifted from elite sources (such as the media and politicians) to ordinary users and alternative sources of information, and opens the witnessing event to lenses diverging from conventional witnessing acts.

Meanwhile, a number of unidentified users with unclear identities, based on their profiles, dominate engagement in the network by reposting and retweeting tweets, generating high out-degree centrality scores. Such an act is a manifestation of Castell's argument that power in networks operates through inclusion/exclusion (Castells, 2011); through engagements done by highly central nodes, they gain power in shaping the witnessing event by including themselves in different conversations and engaging with others witnessing acts. We discuss more on this under the section "(Re)production of witnessing acts."

"Important" nodes (based on eigenvector centrality)	"Popular" nodes (based on in-degree centrality)	"Most engaged" nodes (based on out-degree centrality)
fthilbay	fthilbay	PatikaAuntie
PhilippineStar	PhilippineStar	curiepot
goddessblossoms*	lenirobreda	AllihiaSJ
lenirobreda	goddessblossoms	missflippinaus1
sarahelago	KabataanCSB	bangtanareum07
KabataanCSB	sarahelago	C35dgs
ChelDiokno	macoydubs1	BCT14Avenger
	ChelDiokno	parallelpotato
	rapplerdotcom	ProPilipinasPo
	AllihiaSJ	triofficial_

Table 2. Key network nodes based on eigenvector, in-degree, and out-degree centrality measures.

Witnessing Discourse

Emerging from the witnessing network are assemblages of texts, objects, and utterances that form the witnessing discourse of #MassTestingPH. Through the analysis of content per cluster, we identified its constitutive discursive formations. In the #MassTestingPH assemblage, digital objects (e.g. retweet, hashtags, images) and referential objects (e.g. persons, things, concepts) comprise the material elements that demarcate the points of dispersion of the discourse. Their interactions and intersections with various expressive elements directed our analysis to specific clusters in the network, where we identified the discursive formations of the witnessing discourse, as illustrated in Table 3.

Discursive formation and its social cluster	Volume of tweets	Material elements	Expressive elements
#MassTestingPH (G2)	14,608	• #MassTestingPH and its variations • DOH (Department of Health) • (DOH Secretary) Duque	• 'Free' • Now or '<i>ngayon na</i>' • 'tigas ulo' or hard-headed
#NoToVIPTesting (G3)	11,097	• #NoToVIPTesting • 'Twitter rally'	• 'Please' • 'rally' • 'early crisis'
Cayetano Manila paper sign (G8)	6,255	• (House Speaker) Cayetano • Frontliners • 'manila paper'	• 'Put up sign' • 'Went to work' • 'Stay home'
#NoToEmergencyPowers (G12)	1128	• (President) Duterte • 'emergency powers'	• 'Hindi tungkol' or not about • 'Hindi kaya' or cannot • 'Kundi kailangan' or instead, necessary
#OustDuterte (G18)	331	• #OustDuterte • #OustBarbie	• 'Very informative'
#PPEForEasternVisayas (G20)	114	• #PPEForEasternVisayas • PPE • Trash bags	• 'Deserve more'

Table 3. Discursive formations and their social cluster in the #MassTestingPH network.

The relations among these discursive formations are organized following Foucault's (1969) discussion on how concepts are formed within the discourse. Among the discursive formations, #MassTestingPH (G2) and #NoToVIPTesting (G3) share the strongest discursive relations in their forms of succession. Specifically, demands to focus government response towards public health were evident in the calls

for urgent, free mass testing from the Department of Health (DOH) and its secretary Francisco Duque III located in the **#MassTestingPH (G2)**. These tweets demand the prioritization of testing symptomatic patients and front liners, instead of politicians, as articulated by tweets in the **#NoToVIPTesting (G3)**. Resonating with calls for better public health measures is the appeal for the provision of personal protective equipment (PPE) to medical staff in Eastern Visayas clustered in **#PPEsforEasternVisayas (G20)**, co-existing in the field of presence as a part of the solution demanded by users in G2 and G3.

While thematically distant from clusters G2, G3, and G20, located in the field of concomitance are issues that relate to a different domain of the crisis. One of these is the **Cayetano manila paper sign (G8)**, which is characterized by the online flak for the manila paper sign displayed by House Speaker Alan Peter Cayetano, likening the lower house representatives to health workers who 'went to work' during the crisis so that people can 'stay home'. Another distinct cluster is **#NoToEmergencyPowers (G12)**, which contains expressions of opposition against a bill granting President Duterte 'emergency powers' to act on the crisis. Users deemed the bill as unnecessary to enact the necessary public health solutions, such as mass testing. There is also **#OustDuterte (G18)**, composed of calls to remove the President from power, given his administration's response to the health crisis. These formations consolidate discourses related to higher (political) authorities who are addressed by the tweets with #MassTestingPH, who are called to act on the demand to conduct mass testing.

The discursive formations of the hashtag network #MassTestingPH, in its dispersed structure and heterogeneity, are in part consolidated by Twitter and its affordances – the use of hashtags, the trending list amplifying visibility, and the networked linkages of interlocking interests of various actors. The coherence of the witnessing discourse is also a product of the interconnectedness of the political, social and cultural dimensions of the crisis collapsing into the distributed but porous discursive spaces of Twitter, which shapes the construction, distribution, and evaluation of the witnessing event.

Witnessing Assemblage

The discourses in #MassTestingPH are "constantly subject to change and to movement" (Frosh and Pinchevski 2014) given the complexity of the discursive event and in this context, the temporally indefinite character of the pandemic. Through semantic network analysis, we trace the dynamic relations that form the witnessing assemblage within the clusters and analyze them relative to the whole network.

In each cluster, we present the total, as well as the salient and unique elements that comprise the assemblage. We then identify the assemblage processes of its constitutive semantic groups as territorializing, deterritorializing, or reterritorializing to characterize the relationship of the semantic

groups to that of the central witnessing event of the network. Semantic groups that reinforce #MassTestingPH as the dominant witnessing account are considered territorializing, while those that distance themselves from the dominant witnessing account, or redirect audiences to other witnessing events by making it more salient or elevating its relevance are categorized as deterritorializing. Those that introduce new elements to resignify or reappropriate the main event for their own purpose are regarded as reterritorializing the assemblage. These processes are not mutually exclusive, such that deterritorializing processes set the conditions for reterritorialization and further deterritorialization, and that they occur on all levels of the assemblage.

#MassTestingPH (G2)

This cluster is the central semantic network of the hashtag #MassTestingPH and it manifests the diversity of the assemblage (Figure 2a). Unlike traditional witnessing accounts, there is a remarkable ambiguity in distinguishing the witnesses of the event and its audiences, as users both articulate and are exposed to the testimonies. The key actors and the underlying details of the witnessing event are almost always implied and assumed to be understood within the temporal and spatial milieu of the pandemic. Digital objects such as screenshots, images, and videos are consistently present in the network, functioning as proxies to witnessing whose materiality allows them to disperse seamlessly in the network. The testimonies themselves are laden with expressions of anger, frustration, and dismay with the government's response to the pandemic ('gago' or bastard, 'maderpaker' or slang for mother fucker, 'feeling entitled') and these affective responses are echoed and amplified through likes, retweets and replies.

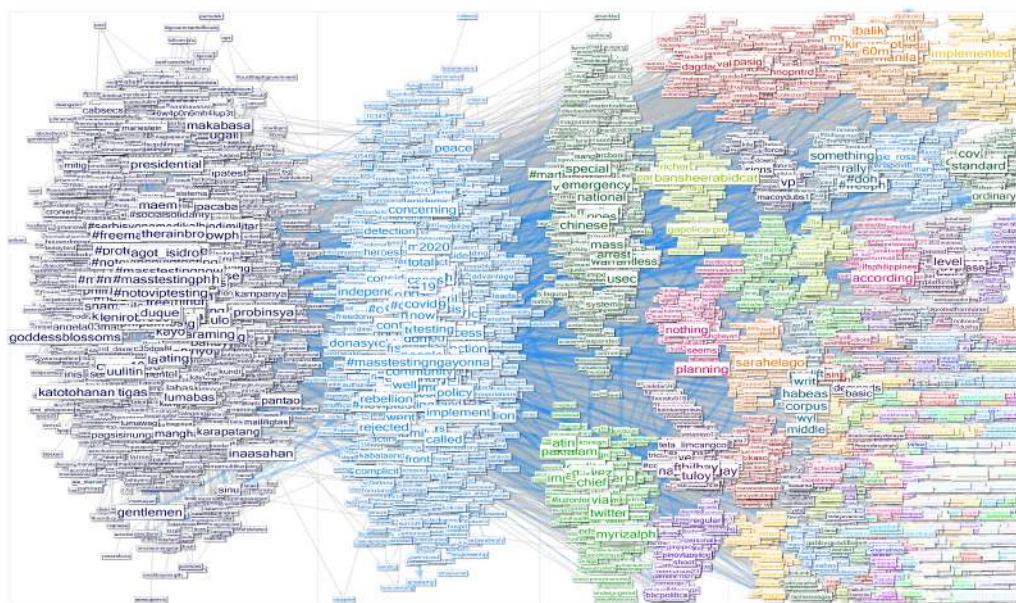


Figure 2a. Semantic network of all expressive and material elements in cluster G2.

The semantic groups in the cluster prominently territorialize the assemblage (Figure 2b) with the centrality of the expressive elements of 'protest' and 'rally' towards material elements representing authorities ('government,' '@dohgovph,' 'Duque') to act on the call to conduct mass testing. There is a pronounced urgency to the witnessing account with the expressive elements of 'many' ('*marami*') and 'everyday' referring to the material elements of the COVID-19 positive cases ('case,' 'numbers,' 'data'), which qualifies the event as an 'emergency' and 'crisis.'

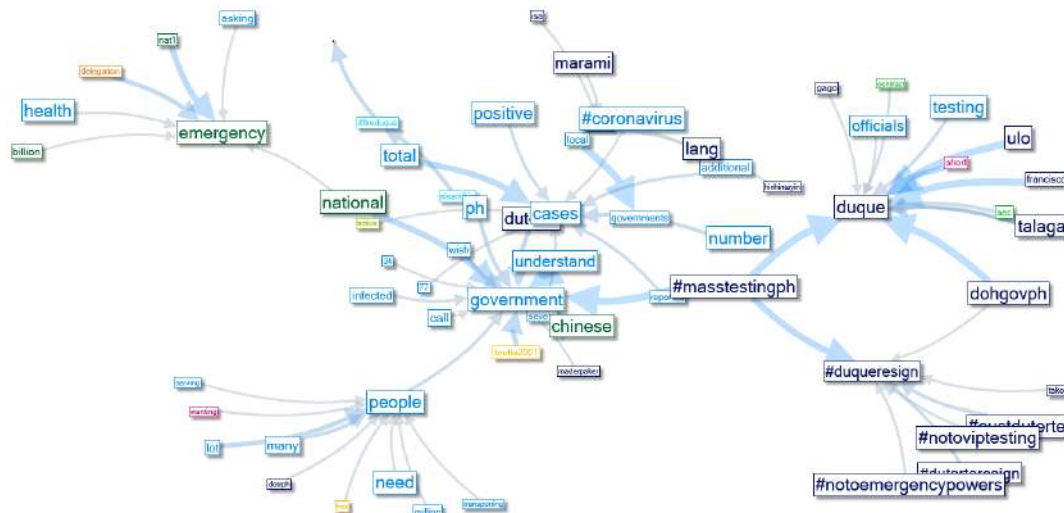


Figure 2b. Semantic network of salient territorializing expressive and material elements in cluster G2.

Connected to the dominant semantic groups are those that reterritorialize the cluster (Figure 2c) by witnessing not only the realities that justify mass testing but also the 'abuse' of 'human rights' ('karapatang pantao') through 'warrantless arrests', embodied by the hashtag #SolusyongMedikalHindiMilitar (medical, not military solutions). Another material element that resignifies the cluster are 'politicians' who possess a sense of 'entitlement' and 'privilege' by asking to be prioritized for testing instead of frontline workers ('front liners', 'doctors', 'nurses'), which intensified the call for accessible testing. The government's talking point of people being 'tigas ulo' (hard-headed) for breaking quarantine protocols is co-opted by users by calling the incriminated politicians 'tigas mukha' (shameless). Users of the hashtag also drew comparisons (us versus 'paid trolls', and us versus model countries) to emphasize the government's misplaced priorities. Attempts to deterritorialize the cluster is in the use of the hashtag to shift the attention to the other aspects of the crisis, such as the impending economic collapse ('economy'), rampant politicking ('corruption', 'deception', 'fund') and the independence of the Philippines from foreign influence ('China').



Supporting G2 is the semantic network #NoToVIPTesting (G3) (Figure 3a), which reterritorializes the assemblage by urging the public to oppose ('petition', 'hinaing', 'reklamo' or complaint) the prioritization of incumbent government officials ('politicians', 'politiko') in the COVID-19 testing. This cluster is characterized by strong affective accounts of indignation and resentment against the accused politicians ('galit' or 'mad', 'sad', 'nakakaiyak' or wanting to cry) who are deemed 'irresponsible' and 'incompetent' to be in office.



The cluster also has territorializing tendencies (Figure 3b) by sharing the common elements of G2, but with more overt calls for people to 'participate', 'join' ('kasali'), and 'move' ('kumilos') in other forms of mobilizations, such as reaching out to the congressional representatives ('senators', 'house') through 'dm' (direct messages). In this semantic network, the dual role of the users as witnesses and actors constructing the witnessing event is more salient by both joining the 'Twitter rally' and calling others to participate.

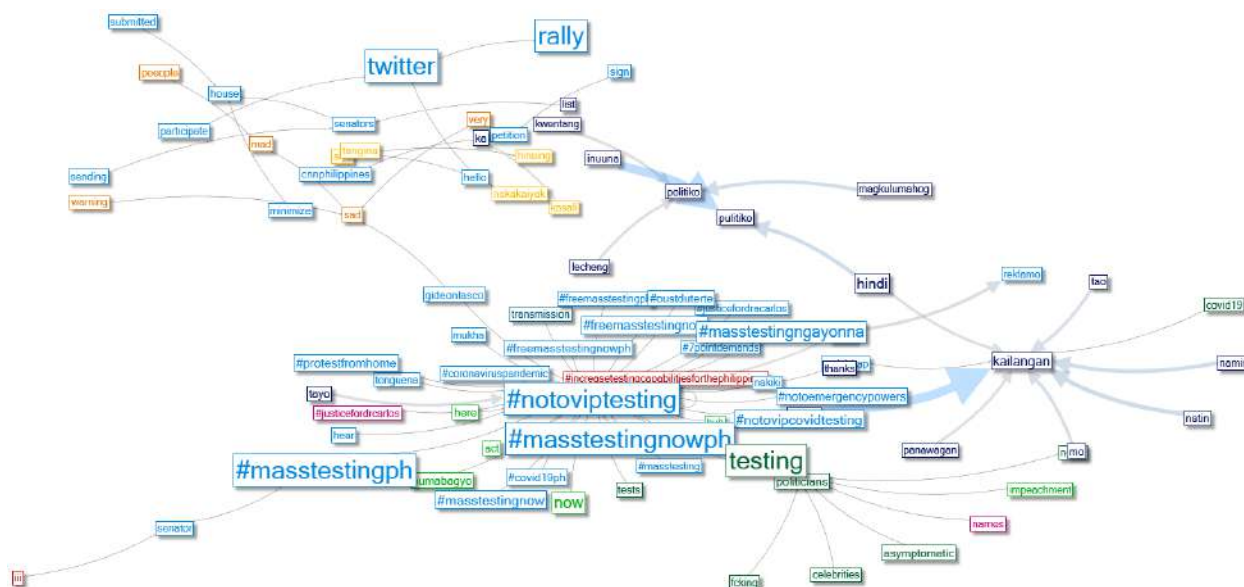


Figure 3b. Semantic network of salient expressive and material elements in cluster G3.

Cayetano Manila Paper Sign (G8)

On 23 March 2020, House Speaker Cayetano, together with other members of congress, held up a manila paper sign that said, "Together with doctors and front liners, we went to work for you, so please stay home for us," mimicking viral photos by doctors and nurses who took photos containing a similar message. As a reaction to the stunt, the cluster (Figure 4a) has helped fortify the call for #MassTestingPH but it is primarily reterritorializing the assemblage by emphasizing people's exasperation ('galit' or anger, 'bulok' or rotten, 'walang kwenta' or useless) towards politicians for their callous behavior in the time of crisis (Figure 4b).

'Cayetano' and his 'Manila paper sign' stunt have been the fuel to the demand for better 'government' response to the pandemic through mass testing, among other viable solutions. Attention was directed to the 'need' to 'prioritize' the 'funds' ('pondo') for mass testing, which is framed as a 'right' ('karapatan') that is not exclusive to the 'privilege(d)' and the 'rich'. The expressive elements of 'hindi' (not) and 'wag'

#NoToEmergencyPowers (G12)

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#MassTestingPH as an extended issue. Surfacing the salient and unique elements (Figure 5b) shows that users have an assumption that the government will use the emergency powers for malign ends, typically related to human rights violations ('napakaraming' 'abuso' or countless 'abuses'), and corruption, using evidence from previous corruption cases such as the SEA Games hosting ('cauldron' as reference to the overpriced commemorative structure). There is also a tendency to include the hashtag to make visible other issues ('transportation', 'protect(ion)' for 'frontliners' and the 'poor' or 'mahihirap'). Similar to G8, the use of tagging with the call to join ('sumali', 'halina') the protests ('petition', 'rally', 'panawagan') supports its territorializing processes.

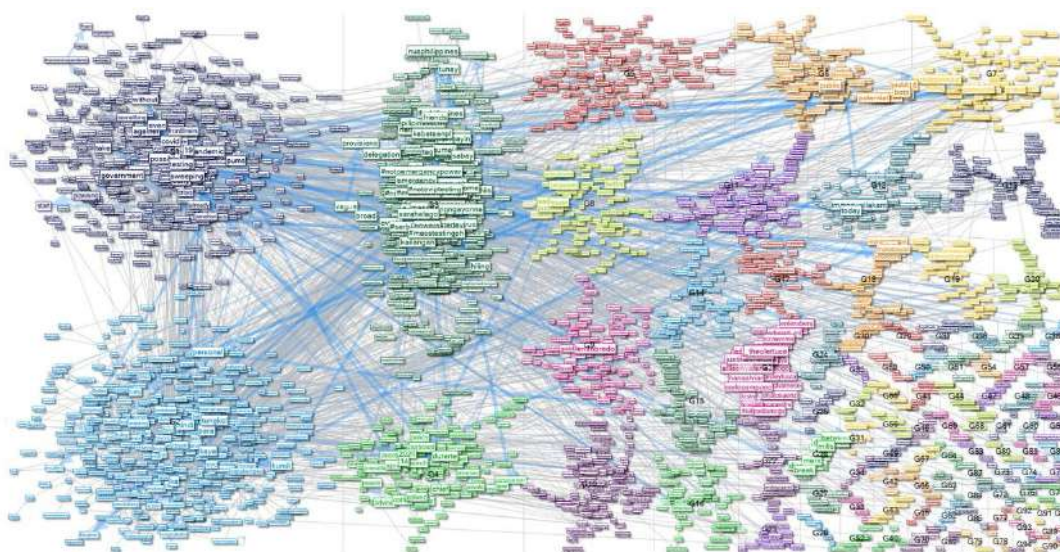


Figure 5a. Semantic network of all expressive and material elements in cluster G12.

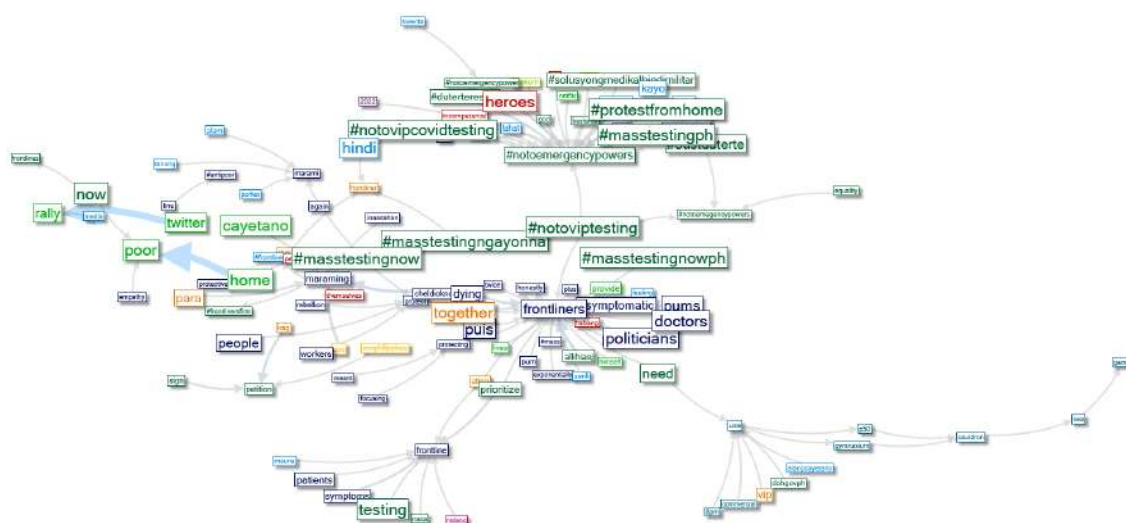


Figure 5b. Semantic network of salient expressive and material elements in cluster G12.

This cluster (Figure 6a) shifts the attention to the call to #OustDuterte and derritorializes from the network. As shown in Figure 6b, this is done primarily by reminding users to keep using the hashtag ('continue [the] chain') or to attach it to an unrelated topic such as the influencer-related #OustBarbie. Some semantic groups present reterritorializing tendencies by raising related issues to barriers to mass testing, such as redirecting funds ('redirect natin') and frame them as premises for Duterte's removal from power ('let's #oustduterte'). Apparent in this semantic network is the inclusion of the expressive elements 'natin' or 'us', invoking collective power and stressing that the government should prioritize the people ('gobyerno natin' or our government, 'bansa natin' or our country).

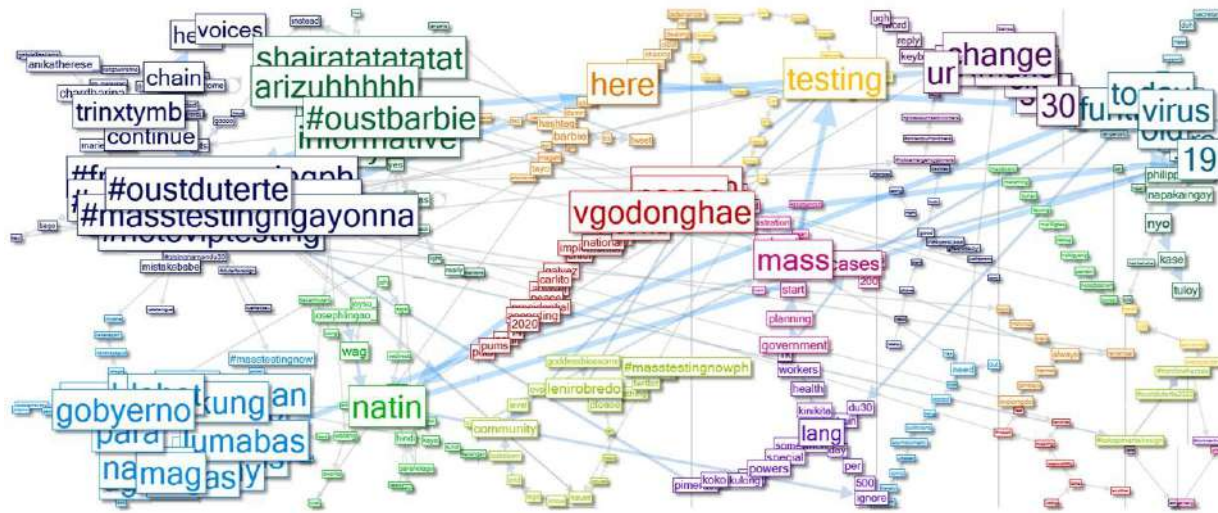


Figure 6a. Semantic network of all expressive and material elements in cluster G18.

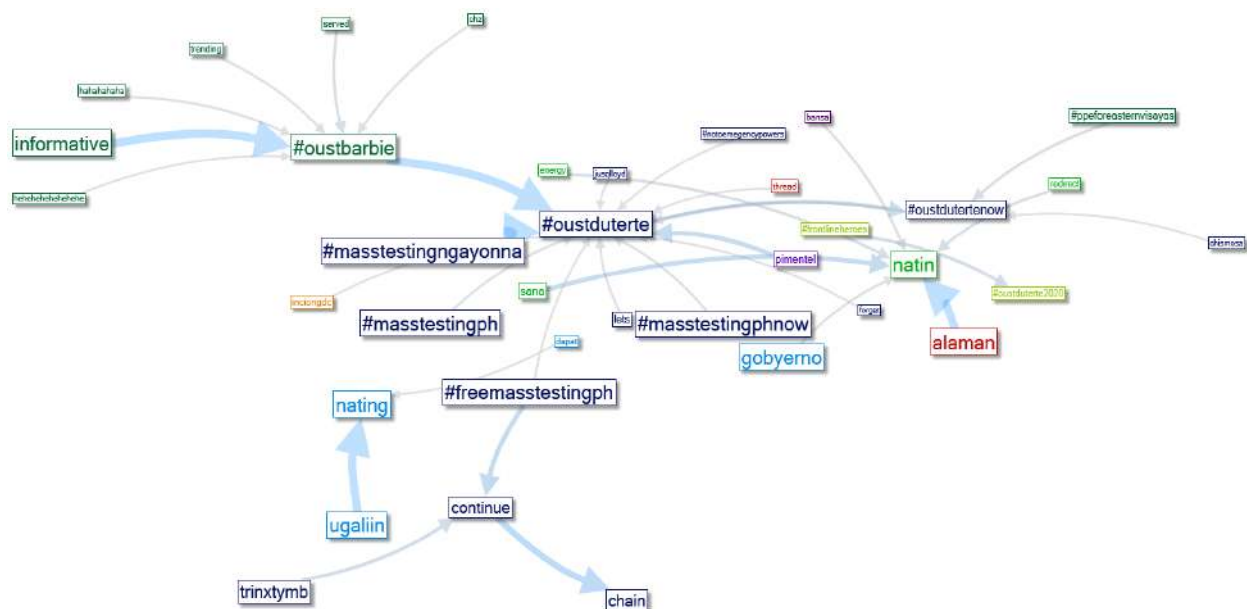


Figure 6b. Semantic network of salient expressive and material elements in cluster G18.

Call for PPE for Frontliners (G20)

The cluster (Figure 7a) deterritorializes the assemblage by advocating the provision of PPEs to frontliners in Eastern Visayas (#PPEforEasternVisayas) who have been using trash bags and raincoats as personal protective equipment. These accounts were attached to the hashtag #MassTestingPH. As shown in Figure 7b, the material elements of 'trash bag' and 'raincoats' have made the witnessing account visceral and affective, and expand the cause of mass testing to larger systemic issues ('pondo', 'tax' charged for imported test kits, etc.). Reterritorializing tendencies include either pointing out the affective drivers ('fight [for] doctors') or political barriers ('emergency powers') to implementing mass testing.

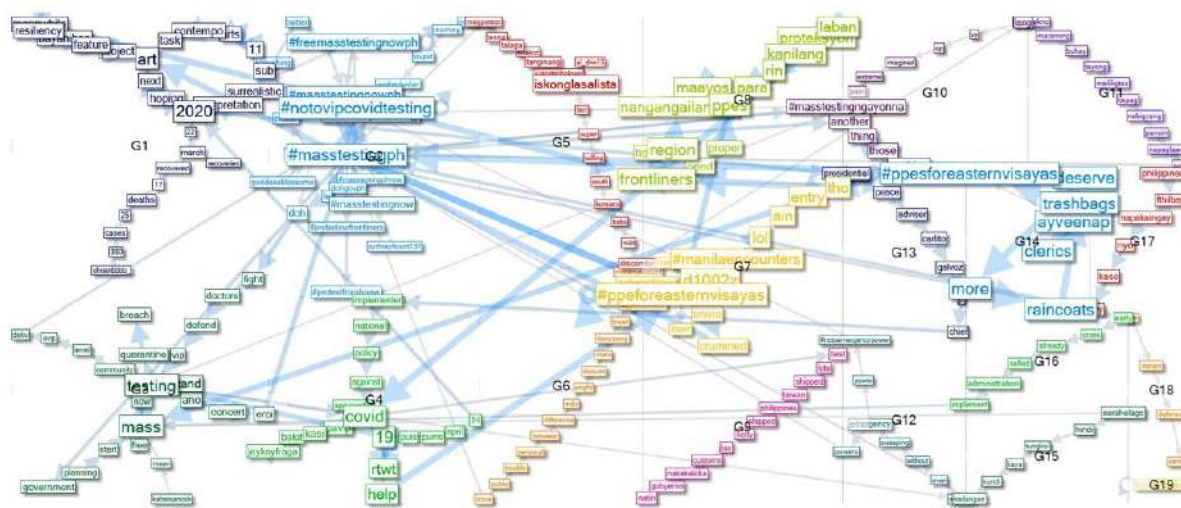


Figure 7a. Semantic network of all expressive and material elements in cluster G20.

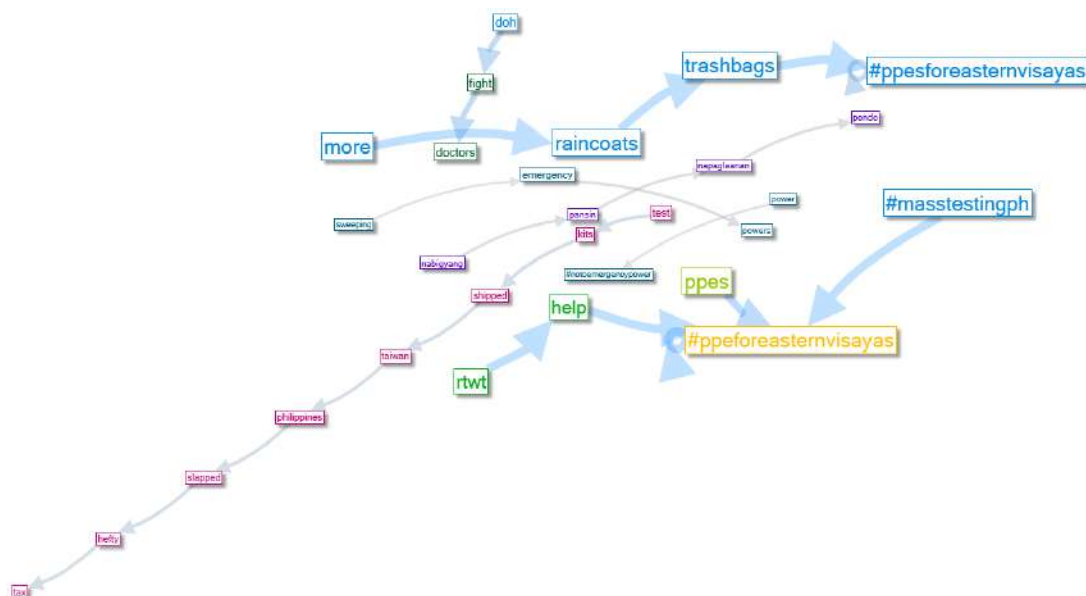


Figure 7b. Semantic network of salient expressive and material elements in cluster G20.

DIGITAL WITNESSING AND THE CONFIGURATIONS OF CONTEMPORARY WITNESSING

The convergence of the witnessing networks, discourses, and assemblages characterizes digital witnessing, which refers to the forms of mediated witnessing emerging from the interactions and intersections of assemblages of actors, texts, and technologies governed by the affordances and logics of digital media. Digital witnessing transforms the conventions of media witnessing by reconfiguring the production of witnessing accounts, the modes of witnessing, and the construction of witnessing events. We discuss these new conditions of witnessing through the case of the Twitter hashtag network #MassTestingPH and how they undermine dominant power structures.

(Re)production of Witnessing Accounts

The witnessing network indicates the traditional media witnessing actors such as political personalities, civic organizations, and media that remain prominent in shaping the discourse around #MassTestingPH. However, distinct to digital witnessing is the emergence of new actors, customarily designated as audiences, as “producers” (Bruns 2008) of witnessing testimonies. Microcelebrities (@macoydubs1) draw from their aspirational but authentic persona (Marwick 2015) to embody their witnessing testimonies, distinguishing their voices among the thousands of tweets in the discourse. Although limited in their reach, users also participate in the production of testimonies through their use of the affordances and logics of the platform. Twitter enables them to succinctly provide accounts of events within its character count and use multimedia objects. Attaching their tweet to widely used hashtags situates their testimonies in the larger witnessing network, while contributing to the visibility of the hashtag on the platform. Engaging with other users and similar testimonies through retweets, replies, and quoted tweets is also a means to corroborating their own witnessing accounts. Testimonies from users adept at Twitter’s platform vernaculars (Gibbs et al. 2015) and issue vernaculars (Rieder et al. 2018), or the communicative genres distinct to the platform and the topic of discussion, resonate with other users and become more salient in the network.

These witnessing accounts are individual acts whose meanings are collectively created through the “connective action” (Bennett and Segerberg 2012) inherent in social networks. Users draw from the constitutive material and expressive elements in the network to formulate their witnessing accounts. The networked structure of Twitter consolidates particular views of the witnessing event while portraying an aggregated account of it. In the hashtag network #MassTestingPH, the discursive formations locate these testimonies within the same “fields” of presence and concomitance (Foucault 1969), forming a layer of discursive structure that renders these testimonies coherent and meaningful.

However, these structures that enable collective meaning-making are subjected to territorializing and deterritorializing assemblage processes, constantly resignifying witnessing accounts.

Individual witnessing testimonies differ significantly from those of media witnessing through the ways in which narratives are framed. While initial witnessing draws from media testimonies, subsequent witnessing does not need to follow conventions of news and the expectations of objectivity and fairness. This is evident in the articulation of the witnessing accounts predominantly through 'personal' frames characterized by "affective intensities" (Paasonen 2015). In #MassTestingPH, testimonies are forms of political participation (Mortensen 2015), personalized to the issues and concerns individual users deem important. Affective expressions provide texture to the witnessing – often reserved for audiences whose role is to confer judgment to the witnessing event (Ashuri and Pinchevski 2009). These subjective forms of witnessing are not necessarily interested in upholding the veracity (Peters 2001) in their testimonies; rather, in emphasizing the individual implications of the witnessing event.

Multiple Modes of Witnessing

The circulation of first-hand witnessing accounts in digital spaces has enabled virtually anyone to be second-hand witnesses. The materiality of digital witnessing through ubiquitous documentation of digital objects (e.g. photos, screenshots, videos), however, can elect anyone to be a quasi-first hand witness ('I saw on Twitter'). Frosh and Pinchevski (2014) argue that digital materials have the capacity to 'recuperate' the singular and produce distinct instances that enable extended witnessing beyond the spatial and temporal *instants*. The mediation of Twitter transforms the 'excesses' of the instant captured by multimedia objects through repetition ('retweets') and reproduction ('quoted tweet'). This does not undermine the original witnessing account but rather invites co-witnesses to support the testimony and imbue the testimony with credibility in the absence of the endorsement of gatekeepers.

Digital witnessing also allows users to simultaneously view and interpret multiple testimonies in reference to a single event. While there are dominant frames of witnessing ('Top'), filters such as recency ('Latest'), affinity ('People you follow'), and location ('Near you') rearrange the manner in which users witness alternate sets of testimonies. At the same time, the personalization mechanisms of Twitter confine witnessing to particular forms of narratives that cultivate users to certain dispositions. The conflicting logics of networks and recommendation algorithms create modes of witnessing where users can simultaneously corroborate, contrast, and contest testimonies and interpretations of the witnessing event. Twitter, governing the flow of and the frame from where witnesses view the event, renders it the "power to enable and assign meaningfulness, managing how information is perceived by users, the 'distribution of the sensible'" (Langlois 2013).

(Re)construction of Witnessing Events

The mediation of digital technologies in witnessing also shape how witnessing events are constructed, and eventually, perpetuated. Networks serve as the organizing structure of witnessing, consolidating witnessing acts through deliberate connective actions, but they also work in fragmenting witnessing experiences by forming tightly-knit communities within them. This consolidation/fragmentation paradox occurs on the levels of the witnessing network and the witnessing discourse, and their respective relations in the assemblage.

The hashtag #MassTestingPH is the common ground issue related to the government's response to the crisis and it assembles other distinct issues represented by the discursive formations under the same hashtag, emphasizing the interdependence of the political, economic, and social dimensions of the pandemic. The series of retweets and replies surrounding the testimonies forms old and new alliances among users to sustain the visibility of the hashtag. This consolidation of the witnessing event manifests in the largest and most concentrated clusters (G2 and G3) and territorializes the significance, urgency, and centrality of mass testing in managing the crisis.

Algorithmic logics that favor compatibility and reciprocity fragment the network, forming multiple clusters with homogenous witnessing interpretations. Within clusters, we see similar sets of semantic relations that define the witnessing event, usually surrounding individual users' testimonies to form ambient discourses (Pond and Lewis 2019). As we move towards smaller, more distant clusters, discourses also become more disparate and deterritorialized from #MassTestingPH. The patterns of witnessing in these clusters are not just characterized by users' acknowledgement of the importance of mass testing, but also their insistence on the primacy of issues that are a precondition to it (G18) or those that are more relevant to their immediate contexts (G20).

Witnessing events constructed through and within social networks are in a liminal space (Papacharissi 2016) – it can remain as a witnessing instance in response to the unfolding of the pandemic in the country but has the potentialities to become new witnessing events by highlighting related but particular issues, or inspiring collective action to achieve the necessary demands from the government. Conceptualizing witnessing as an assemblage implies that witnessing events are indefinitely developing and are open to constant resignification within the dynamic processes and porous boundaries of the network.

(Re)configuration of Power Structures

Counter power in digital spaces is asserted by a network of individuals that do not adhere to formal organizational definitions and clear symbolic ideals, as in collective action. Discourses are shaped online through individual acts that connect to that of others (Bennett and Segerberg 2012), while at the same time being constantly reshaped by digital objects and structures. Constructing events is not centered on elite institutions or actors and thus can be reconstructed indefinitely by individuals through their testimonies, giving rise to diverse realities based on multiple accounts, and unlimited significations based on unlimited messages. In #MassTestingPH, although we see nodes of traditional actors with high levels of authority, actors who are not conventionally influential gain prominence in the network. In local clusters or communities, where ambient discourses are stronger in shaping individual user realities, non-traditional actors further dominate and local concerns and issues emerge.

Our findings also surfaced the flattening of hierarchies in digital witnessing, dissolving the traditional witness-mediator-audience relationship. The role of the first-hand witness is no longer exclusive to journalists – users directly act as witnesses and provide testimonies without intermediaries framing their accounts. A reversal of roles takes place as individual users dominate the re-construction of events, using techniques akin to traditional media reporting to triangulate other witnessing counts, such as using video footages or linking multiple screenshots. Individual users attempt to shape the agenda of mainstream media outlets or the policy agenda of institutions by tagging them in testimonies in the witnessing network.

With these, the sense of powerlessness and distance is less apparent in digital witnessing than in traditional media witnessing, especially when witnessing acts become internalized and personalized, and as “distant audiences” corroborate with others’ accounts on dominant topics (#CallForPPEs linking to #MassTestingPH) to scale personal expressions in the witnessing network. As organizing agents, digital objects (such as hashtags) can enable action and reconfigure the fluid witnessing network when individual users validate calls for aid made by engaging with these testimonies.

Witnessing networks are largely constituted by personalized, self-motivated expressions, and while they provide a semblance of collective action, their lack of a shared identity and vision of reality prevent them from truly acting as a collective. As evidenced by the #MassTestingPH, despite being subsumed under a single hashtag network, multiple issues, meanings, and goals emerged from individual users and local clusters. However, this is not to say that personalized expressions can never constitute a collective. As individual connective acts scale up to become communities, and as communities link with others to form large witnessing networks, meanings can be co-created and personal goals can be crystallized as part of a collective.

CONCLUSION

Through the examination of the hashtag network #MassTestingPH, we have conceptualized *digital witnessing* not only as a new form of mediated witnessing but as a set of conditions defined by the interplay of actors, texts, and technologies governed by the affordances and logics of digital media.

While testimonies remain to be the locus of witnessing, the witnesses who articulate them and the processes through which they are produced and distributed have been transformed. Witnessing is also not monopolized anymore by traditional gatekeepers, especially at a time when institutional mechanisms fail to address the crisis and assure people. The multiplicity of witnessing experiences organized by platforms, networks, and algorithms create a paradox oscillating between consolidation and fragmentation of the witnessing event, if not its transformation into new contexts, meanings, and agendas. The reconfiguration of witnessing processes also reimagines the political potential of digital witnessing of translating connective action (Bennett and Segerberg 2012) to collective action.

By analyzing witnessing as an assemblage (Frosh and Pinchevski 2014), we have deconstructed the constitutive components of contemporary witnessing: the witnessing network ('witnesses'), the witnessing discourse ('witnessing accounts') and the witnessing assemblage ('witnessing event'). This 'rhizomatic' (Deleuze and Guattari 1987) view of witnessing is only permissible through innovative methodological approaches that can perform large-scale multimodal analysis inherent in digital environments. Capturing the networks of value-neutral hashtags (e.g., #COVID19PH) would have provided more breadth and variety in our analysis, but we are limited by our sourcing and computational capabilities.

On a theoretical level, our study intends to shift the analytical approach to studying witnessing from being discursive to also become structural and emphasize how they mutually constitute the relations that shape the witnessing process. Pragmatically, we see digital witnessing as surfacing oppositional and marginalized voices (including the fringe ones) against the established political field of witnessing (Ashuri and Pinchevski 2009). With the mastery of platform and issue vernaculars, users and emerging influencers can break through the discourse and challenge the dominant witnessing accounts of events.

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