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Protesting the lockdown: geo-indexing a movement publicly opposing Covid-19 policies on Facebook

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ABSTRACT

The Covid-19 pandemic saw restrictions being implemented to curb the spread of the virus. This seeded anti-lockdown demonstrations across the globe. Leveraging network, quantitative and qualitative textual analysis tools, we scrutinize the expression of opposition to these restrictions on 96 public Facebook groups and pages, and its connection to physical places across the globe. To grapple with this relation, we propose the concept of geo-indexing as the practice of adding meaning to physical places on social media and identify a transnational network of geo-indexed posts. Importantly, this geo-indexed opposition was framed as unified against an unjust and undemocratic imposition of restrictive measures. The language used in some of this communication was conspiratorial, albeit to a lesser degree than expected. Moreover, geo-indexed posts were used to evidence the scale of public mobilization, the cohesion of the protests, to articulate the virtue of transgressing health measures and to extoll those who said or did so, across multiple sites.

By early April 2020, the COVID-19 pandemic saw roughly a third of the world's population experiencing some restrictions to its mobility (Koh, 2020). Whereas the majority of people outwardly adhered to the various limitations – including on public gatherings – in place to reduce the spread of the virus, others challenged these measures (Brennan, 2020). This opposition eventually seeded a wave of anti-lockdown protests across the globe (Gerbaudo, 2020), with demonstrations encompassing both conspiracists and activists, including some with links to far-right organizations (Donovan, 2020). As with other social movements, such as the Occupy Movement (Hopke, 2015) and more recently Black Lives Matter (Clark, 2016), social media played an important part in these events (Crawford, 2021). Yet, differently from these mobilizations, the information circulated about COVID-19 on social media, as well as the ensuing social restrictions, have frequently been called into question

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(Zarocostas, 2020). In February 2020, for instance, the World Health Organization declared an 'infodemic' of COVID-19 misinformation that undermined trust in science and state-mandated restrictions (Zarocostas, 2020).

In response, Facebook – a hotbed for activism against measures to combat viruses (N. Smith & Graham, 2019), and against social isolation measures during the pandemic (Schradie, 2020) – took the uncharacteristic decision to prohibit users from organizing events that explicitly opposed governmental guidance on social distancing and stay-at-home orders, requiring pages to state that an advertised demonstration would respect public mandates (Sandler, 2020). Facebook's injunction, at the start of the pandemic, meant that groups challenging public health measures were still able to do so, providing advertised events alluded to social distancing.

Predicated on an analytical departure from a more common focus on the social media usage of protest participants (Mosca & Quaranta, 2016), the exigency of this article is to show how locations are made visible in protest-related Facebook posts. More specifically, our aim is to develop an understanding of the transnational scope of the movement opposing COVID-19 restrictions by examining the articulation between location, the framing of the protests and collective identities expressed on Facebook.

A composite – network and textual – analysis of communication on 96 public Facebook groups and pages publicizing protests opposing COVID-19 policies from January to December 2020, our study revolves around questions that interrogate

(1) Whether posts referencing geographical locations on public Facebook groups and pages helped to connect the opposition to the public health measures?
(2) How posts containing references to locations framed the opposition to those measures, including through the deployment of previously observed conspiratorial language?
(3) How being an anti-lockdown activist was portrayed across protests taking place in different locations?

In the following section, we present the theoretical groundwork for these research questions and introduce three hypotheses that flow from them. Our research design, which we outline next, integrates the three distinct interests in the structure of the communication network weaved with posts referencing geographical locations, the interpretation of the protests and of participation in them. We used computational methods to collect and prepare the Facebook data for the network analysis whereby we considered our first research question. To discuss the second and third questions, we then scrutinized those posts with social-psychological, quantitative and qualitative tools for content analysis. Our research findings, reviewed in the latter sections of this article, point to a movement which, although publicly sparsely connected on Facebook, was transnational in scope and used a common language in geo-indexed posts to document geographical scale, frame its protests and the identity of the activists involved, cohesively.

We found evidence of a common transnational vocabulary and frames. Anti-lockdown activists used *geo-indexing* to document the opposition to lockdowns across the world. Building on Ince et al. (2017, p. 1817) and Maier et al. (2022), by geo-indexing we refer to a communicative practice whereby social media users curate, tag or draw attention to content, thus constructing *translocal* meaning that surfaces 'relations

between (distant) locations'. The practice highlighted the scope of the collective action in a socio-political context hostile to physical assembly by social movement actors. The same communication disseminated questionable information (cf. Bennett & Livingston, 2018) about health measures and the pandemic.

The theoretical significance of these findings is three-fold. First, geo-indexing aids in the communication of the geographical scale of a movement. People opposed to COVID-19 restrictions used geo-indexed posts on Facebook to show 'solidarity beyond the state' (J. Smith et al., 1998). Geo-indexing attested to how social media posts can be used by movement actors to overcome obstacles to collective action and, specifically, to attain *structural equivalence* (Tarrow, 2005, p. 64) among discrete protests, connecting them as part of a global protest network. Second, we advance the analysis of movement framing processes as they relate to location, a shared collective identity and connections among them. Geo-indexed posts aided the framing of the COVID-19 protests transversally, as a democratic reaction to an illiberal overreach by the state, including through the reclaiming of the physical space for collective action. Third, we show that geo-indexed posts can help the valorization of protests, across different sites, e.g., of the demonstrations opposing public health restrictions, of previously stigmatized identities associated with them and the dedication of movement members to the cause, despite the restrictions they faced.

Ultimately, linguistically distinct from the larger body of Facebook posts in this analysis, geo-indexed posts served to portray a coherent opposition, underscoring its 'worthiness, unity, numbers and commitment' – what Tilly (1999) famously called WUNC displays. These WUNC displays were presented for consumption not only by members of the public, as the theory posits, but, more importantly, by a movement challenged in its efforts to stage protests. Used by COVID-19 protestors principally to evidence the numbers of protests, of participants and unity among them, geo-indexed posts can assist a movement in building cohesion among protest locations.

Background

Mobilizations against public health measures responding to the COVID-19 pandemic were prominent in the United States by as early as April 2020 (Bratich, 2021). Soon after this, similar actions occurred in the United Kingdom, for instance, where the UK Freedom Movement organized anti-lockdown protests in Hyde Park, in May 2020. These demonstrations were followed by other large gatherings later that summer (Gerbaudo, 2020, p. 68). Likewise, in November 2020, there were freedom marches in Melbourne, Australia, that similarly drew large crowds (Convery, 2020). These rallies continued the tradition of many transnational movements of parallel pressure campaigns focused on national governments and local conditions (J. Smith, 2008, p. 109). At the heart of them was the belief that the constraints put in place by governments were not designed to protect the public, but were instead part of a wider conspiracy weaved by 'fraudulent experts' at the expense of ordinary people, deprived of jobs and forced to wear masks (Gerbaudo, 2020).

These anti-lockdown demonstrations were significant. In the US, the five-day rolling average of protests in mid-April 2020, for example, equaled the level of protesting activity, nationally, in July 2019 (Brennan, 2020). As Schradie comments, these events

were 'likely just the tip of a far larger iceberg of right-wing resentment that is stewing at home as [people] read and transmit the tweets and Facebook posts' (2020, p. 128). Significantly, the set of demonstrations that started in April 2020 quickly gathered momentum when President Trump called on his Twitter followers to 'LIBERATE Virginia, Michigan, and Minnesota' (original emphasis, Brennan, 2020, p. 5).

Linking protests to place on social media

The impact of social media usage, of course, is far from one-dimensional. Social media affords activists greater visibility, which many use to assemble, narrate and scale their collective action (Uldam, 2017). To this end, social network services (SNS), in particular, help social movements recruit new activists (Gaby & Caren, 2012), strengthen existing connections (Mundt et al., 2018), organize demonstrations (Clark, 2016; Hensby, 2017), and frame contentious issues (Carney, 2016) in a manner that might *feel* more authentic than the communications of more traditional media (Gaby & Caren, 2012). Accordingly, social media presents an important opportunity for diverse actors to form unifying links (Chávez, 2011). In turn, these links can be leveraged to build at scale 'interpersonal networks or coalitions by enabling personalized and organizational sharing' (Mundt et al., 2018, p. 2). This process is at once social and semantic as movement actors construct interpretations of topical issues designed to resonate with target audiences such as their supporters, on an increasingly personal level (Bennett & Segerberg, 2012).

Equally, movements may coalesce and forge connections between otherwise disparate groups or content through indexing practices (e.g., with hashtags, Ince et al., 2017). Importantly, Ince and colleagues stress that 'indexing behaviors are a form of distributed framing' (Ince et al., 2017, 1818) whereby movements arrive at shared interpretations of issues and their resolution through networked communication (see also Meraz & Papacharissi, 2013). And these 'shared interpretations' seemingly extend beyond a specific geographical site.

In this study, we advance the concept of geo-indexing to move forward the analysis of distributed framing beyond a focus on hashtags. In their article, Ince et al. (2017) concentrated on BLM twitter hashtags and coded their usage inductively (e.g., as related to movement tactics or police violence). Delving empirically into the personalization of collective action (Bennett & Segerberg, 2012), those authors describe how social media users participate in the production of meaning associated with a movement. While place names (e.g., New York, Los Angeles) were present in their data, Ince et al. (2017), p. did not consider their significance. In our turn, we add geographical and psycho-linguistic insights to the analysis of distributed framing, using bespoke dictionaries along with a deductive coding scheme for framing tasks and WUNC displays. We then discuss its significance for the opposition to COVID-19 measures, specifically, and transnational movements, more generally.

Social media and protest location

While social media usage ostensibly enables social movements to configure disparate connections transgressing physical space, the specificity of concrete places should not be ignored. As Ince and colleagues highlight, 'we are rarely able to observe where social

media users are located, to see if they are responding to local conditions' (2017, p. 1828). Yet, location is significant when studying protest-related dynamics on social media. For instance, following Trump's tweet asking to 'LIBERATE Virginia, Michigan, and Minnesota' (original emphasis, Brennan, 2020, p. 5) on April 17 April 2020, there was a surge in anti-lockdown protest in those states. Our first research question (**RQ1**) thus asks whether geo-indexing helped connect the opposition to COVID-19 public health restrictions, transnationally?

In the earlier case of Occupy Wall Street, building links among protestors was a granular and highly decentralized processes – involving the input of vast collections of individuals – that was nevertheless rooted directly in physical encampments. Over several months, those connections acted as 'structuring arenas' (i.e., organizational hubs grounding the online support base of the movement and its actions, Bennett et al., 2014, p. 237). Following the disbandment of the movement, a virtual organization, *InterOccupy*, became the mainstay for 'synchronized action across multiple groups, locations and issues' (Donovan, 2018, p. 2). Altogether, such insights allude to public SNS communication being tied to location, on the one hand; and, on the other, tying locations – including – transnationally in a network of terms common across them (Mercea, 2018).

The transnational opposition to COVID-19 policies was a collection of recurring protests. However, unlike Occupy Wall Street, it did not develop local structuring arenas that would continue to exist over several months or a pivotal virtual organization like *InterOccupy* (Kowalewski, 2021). Therefore, we hypothesize that geo-indexing helped develop connections between locations confined within national boundaries and trans-nationally (**H1**).

Geo-indexing and protest framing

Movements perform three sets of framing tasks (Benford & Snow, 2000): *diagnostic* framing, which involves problem identification and attribution; *prognostic* framing, which refers to the articulation of alternatives to the current situation and plans to remedy it; and *motivational* framing, namely the encouragement of movement partici-pants and society at large to take action. Movement actors perform these framing tasks as they identify a shared concern, who or what is the source of it and the reasons why it has to be addressed through their collective action along with alternatives to the status quo and ideas for how others can contribute to the common effort to effect change (Benford & Snow, 2000, p. 615). The three tasks are pursued so as to develop cohesion inside a movement ('consensus mobilization') and a readiness to undertake collective action to secure change ('action mobilization', Benford & Snow, 2000, p. 615).

Activists' messages may combine several framing tasks at once. For instance, while the diagnostic task pinpoints a problem and its perpetrator, the resulting interpretation of the situation can circumscribe the range of solutions to it and thus the prognostic task (Benford & Snow, 2000, p. 516). Additionally, prognostic framing transpires within a wider field wherein movement actors vie against other agents such as their opponents or competitors, and their solutions. Accordingly, prognostic framing may entail the rebuttal of opponents or competitors, an action termed 'counterframing'. A recent example of counterframing is the 120 db transnational campaign by far-right activists

who sought to reframe and undermine the discourse of the #metoo movement, on social media, by arguing that unchecked immigration threatens the security of women in Europe (Knüpfer et al., 2022). As we examine the framing tasks undertaken by the transnational opposition to COVID-19 policies, our second research question (**RQ2a**) asks: how did geo-indexed posts frame the protests opposing COVID-19 restrictions?

Communication on social media challenging public COVID-19 health measures was interwoven with 'pandemic conspiracy theories' (Donovan, 2020). Conspiracy theories contest scientific knowledge, cultivating misguided beliefs over the truth and attributing causal agency over historical events to small groups (Keeley, 1999). Indeed, Donovan's research describes a conspiracy originating in the so-called 'reopen' rallies in the US predicated on the idea that the pandemic was a 'hoax' orchestrated by global as well as American elites opposed to the then White House incumbent, Donald Trump (Donovan, 2020). Similarly, and topically, exponents of the COVID-19 anti-vaccination (anti-vaxx) movement on Twitter later that year decried a conspiracy by global elites to extract value from a supposedly contrived pandemic while at the same time using it as an excuse to roll out population control measures (Gokhale, 2020) and thus, to curb established rights and freedoms in liberal democracies. Therefore, we posit that the geo-indexed posts would foreground counter-frames laden with conspiracy theory that portrayed an active and cohesive movement, defiant of public restrictions (**H2**). As we scrutinize the framing tasks performed with the geo-indexed posts, we consider also whether conspiratorial language was employed not only diagnostically (as suggested by Gokhale, 2020) but also prognostically and motivationally (i.e., to build consensus for collective action by a transnational movement of parallel pressure campaigns, **RQ2b**)?

Geo-indexing and internal movement perceptions of WUNC

Framing, as highlighted above, serves to construct a coherent social group, acting as an ideological bridge between individuals and the collective (Benford & Snow, 2000, p. 632). Equally, it allows for the collective to materialize, when separate protests are painted as structurally equivalent (Tarrow, 2005). *Structural equivalence* represents the occurrence of discrete protests, transnationally, in the absence of 'evident coordination across borders' (Tarrow, 2005, p. 65), e.g., as a parallel reaction to a perceived threat such as stay-at-home orders. Collective identity frames, specifically, connect protest participants by placing them 'in time and space' and highlighting shared characteristics which are the basis for the development of relationships both among them and their collective action (Hunt et al., 1994, p. 185).

Those questioning COVID-19 restrictions or COVID-19 itself, specifically, have been branded conspiracy theorists (Buranyi, 2020). Previous studies have stressed that individuals tend to avoid associating themselves with stigmatized identities. In those cases where such identities are internalized, members of those communities often avoid participating in groups or public displays which highlight that stigma (Goffman, 1990). Hence, social movements mobilizing stigmatized communities often try to gain control over the meaning of collective identities and reconstruct them with positive terms appealing to group members (Santos, 2020). Such remedial work is not inevitable, particularly among conspiracists or far-right activists. Indeed, the opposite may be true

of, for instance, the incel movement coalescing online around the denouncement of others – and above all women – for its members' lack of 'sexual success' (Ging, 2017, p. 640). Accordingly, our third research question considers the collective identity framing performed by the opposition to COVID-19 restrictions on Facebook and asks: how were collective identities articulated in the geo-indexed posts (**RQ3**)?

As such, the public expression of collective identities is integral to a wider drive by a movement to project its WUNC (Tilly, 1999). That is, to present a united front as a cohesive collective actor determined to pursue what it regards as a critical common cause while representing a considerable section of society driven by the same common purpose (Laschever, 2017). In the attempt to gain support as well as to legitimize its claims and actions in the eyes of authorities, the public and the media, a movement will *display* its WUNC physically – e.g., through mass gatherings in public spaces, chanting and marching – and through immaterial shared symbols such as endorsements by community leaders and statements of commitment in the face of risks and attacks by opponents (Tilly, 1999, p. 261).

When a movement's main motive appears illegitimate – e.g., because it flouts widely accepted public health restrictions – being on one side of an intergroup conflict becomes the primary basis for collective action (McGarthy et al., 2014, p. 729). Thus, we expect geo-indexed posts to be used to demarcate the opposition as an in-group, to be distin-guished from an out-group (e.g., with comparison words, 'us' vs. 'them', McGarthy et al., 2014, p. 729, **H3a**). Furthermore, differently from previous works that identified WUNC displays as aimed at convincing external publics (i.e., political incumbents and public opinion, Cheng et al., 2023; Tilly, 1999, also by digital means, see Freelon et al., 2018 and), given the aforementioned controls on gatherings in public spaces (Kowalewski, 2021), we expect geo-indexed posts to be used to increase WUNC perceptions among the move-ment's base (i.e., anti-lockdown Facebook users), depicting an oppositional movement of structurally equivalent protests able to attain a positive, in-group, collective identity and WUNC, despite national restrictions (**H3b**).

Data and methods

The project data was collected in early January 2021 using the CrowdTangle API (CrowdTangleTeam, 2020). CrowdTangle is Facebook's proprietary analytics platform providing access to public group, page and verified profile data to registered partners. First, we formulated a keyword Boolean search to identify public groups and pages with a dyadic combination of the terms 'lockdown', 'covid', 'covid-19', 'coronavirus' and 'protest'. The selection protocol is outlined in the online appendix. Relying on a sequential purposive sampling protocol (Palinkas et al., 2015), we identified public outlets used by actors opposing COVID-19 restrictions and retrieved a collection of 53,289 principally English-language posts published on 96 groups and pages between January and December 2020.

In the second step, we employed criterion sampling (Palinkas et al., 2015) to pre-process this dataset of activist outlets for the analysis of geo-indexed posts. Using the Python package Geograpy (Morgan, 2014), we extracted names of places from all the posts in the combined page and group dataset. We chose this approach to identifying locations because such information is altogether missing from public Facebook metadata

(Shiffman, 2019). We thus compiled a subset of 10,054 posts containing a reference to at least one location and used the Python library Geonamescache (Gomez, 2020) to add geographic data such as latitude and longitude for all the locations in the subset.

Third, the names of all located places and the geographic information in the subset of 10,054 posts were manually validated for false positive results (in line with Hoffmann & Heft, 2020). To do so, the authors first drew a random sample of 100 entries and checked for inter-coder reliability (Krippendorff, 1980) among them, attaining a Krippendorff α score of 0.91. The resulting set of 9,038 geo-indexed entries (17% of the initial dataset) was then filtered once more for posts unrelated to the opposition to COVID-19 restrictions (e.g., published on groups and pages acting as protest clearing houses such as Protest Livestream, a group used by various protestors to stream events including, for instance, by anti-lockdown and BLM activists). A final set of 4,373 posts (or 8% of the initial dataset) was retained for analysis. The percentage represents a fraction of the proportion of free-text geotagged information identified in similar studies, albeit ones using exclusively Twitter data (see Knüpfer et al., 2022). However, this dataset constitutes the basis for a single, *unusual* case study (Yin, 2018) of geo-indexed Facebook communication taking place against the exceptional backdrop of restrictions to physical mobility and assembly.

The analysis of the geo-indexed network

To address **RQ1** and form an understanding of the degree to which geo-indexed posts connected Facebook outlets (groups and pages), transnationally, we first constructed a bipartite network wherein geo-indexed locations represented one set of nodes and the Facebook groups and pages another, with network edges as the links between these two sets of nodes. We then explored relevant structural characteristics for measuring those connections, namely the density, modularity, and group internal-external ties. Density pertains to the ratio between the number of ties in a network and all possible connections therein (Borgatti et al., 2018). It has been associated with effective coordination thanks to the high volume of communication taking place in a densely connected network (Hossain & Kit Guan, 2012).

Modularity is a measure for assessing the density of connections within a network by comparing the observed distribution of ties in network subgroups to a random distribution of links in that network. When more ties are found in subgroups than expected by chance, modularity indicates the presence of cohesive subgroups in the network and gaps separating them, i.e., structural holes (Borgatti et al., 2018, pp. 221–222). The fewer the connections across those subgroups, the higher the modularity score of the network.

Additionally, to understand the extent to which geo-indexed posts contributed to the formation of transnational ties, we added a variable recording the country of the posts, the Facebook groups and pages. We then used that variable and the E-I index (Krackhardt & Stern, 1988) to measure, at the level of the entire network, the extent to which geo-references helped establish ties across countries. The E-I index compares the number of ties within a node category (here, a specific country) to the number of ties between node categories (here, across countries). The index takes values from −1 (or complete homophily, i.e., all ties are inside a country) to + 1 (complete heterophily, i.e., all ties are external to a country).

The analysis of frames in the geo-indexed communication

To analyze how, on the one hand, the opposition against COVID-19 (**RQ2a, b**) and, on the other anti-lockdown activists (**RQ3**) were framed in the geo-indexed posts, we relied on a combination of quantitative, psycholinguistic and qualitative, frame analyses. To measure the use of comparison words as well as the emotionality, conspiratorial language and group processes expressed in the Facebook posts, we employed predefined dictionaries embedded in the Linguistic Inquiry and Word Count (LIWC) software package. Similarly employed by Fong et al. (2021), the LIWC dictionaries cover a large range of psycholinguistic categories developed over more than a decade, which were manually and statistically validated (Tauszcik & Pennebaker, 2009). We enlisted LIWC-22 to gain insights into the use of the following types of psycholinguistic terms: pronouns indicating a sense of group identity (e.g. 'we', 'us' and 'our', Tauszcik & Pennebaker, 2009, p. 31); or which may designate an outgroup (e.g."they", 'them' or 'their'); words connoting positive (e.g. 'love', 'nice') or negative ('hurt', 'nasty') emotions, including anger; cognitive processes and causal words ('know', 'cause', 'because', 'effect'); recurrent themes in popular conspiratorial narratives associated with power, death and religion (Fong et al., 2021); and words relating to social relationships, especially group processes such as affiliation and cohesion (e.g., through the use of the first-person plural or of assent through terms such as 'agree', 'OK', Tauszcik & Pennebaker, 2009, p. 33).

The LIWC-22 processor checked each individual post against its own dictionaries and outputted the rate at which category words (e.g., subsumed to positive emotions) appeared in a post. We then compared the rates for the geo-indexed posts with those for the rest of the non-geo-indexed data so as to form a sense of the distinctiveness or otherwise of the language in the former posts. Ultimately, a key advantage of LIWC is that it can classify large text corpora. A shortcoming of the software, nonetheless, is that it cannot account for the context in which category words occur (Tauszcik & Pennebaker, 2009). Therefore, the frame analysis (Benford & Snow, 2000) – performed on the geo-indexed posts – supplemented the network and quantitative textual analyses with a qualitative review of each post to identify core framing tasks, the articulation of collective identities and WUNC displays.

Two of the authors developed and tested a coding manual based on a close reading of relevant theory reviewed in the previous section (see online appendix for description of the manual). Recent scholarship on the strategic use of Twitter by political activists has proposed an operationalization of WUNC based on metrics for identifying hashtag user communities and measuring their dispersal (unity); on the count of unique users per day (numbers) and on the rate of users who posted again at least once in the subsequent three days (Commitment, see Cheng et al., 2023, pp. 3–4; Freelon et al., 2018). While that approach enabled researchers to measure Twitter users' participation, unity and commitment to protest, the purpose of the coding manual for this analysis was notably

Table 1. Inter-coder reliability scores for the coding of framing tasks (Krippendorf's α).

Diagnostic	Prognostic	Motivational	Identity	Worthiness	Unity	Numbers	Commitment
0.954	0.908	0.942	0.935	0.942	0.841	1	0.898

dissimilar. Instead of seeking to quantify different WUNC measures, our manual was designed for a close, qualitative, reading of the language used in public Facebook posts, and the discursive strategies used to generate the expression of WUNC therein that was visible to other users.

Using the manual, the two authors independently categorized a random sample of 100 posts. Resulting inter-coder reliability scores confirmed a strong agreement between the coders (see Table 1). Using the same coding manual, they then hand-labelled the rest of the geo-indexed posts before proceeding with a close reading of the coded material (similarly, see Oden Choi et al., 2021). Together, the network, quantitative and qualitative exploration of the posts allowed us to characterize systematically and sensitively the social and textual connections between protest
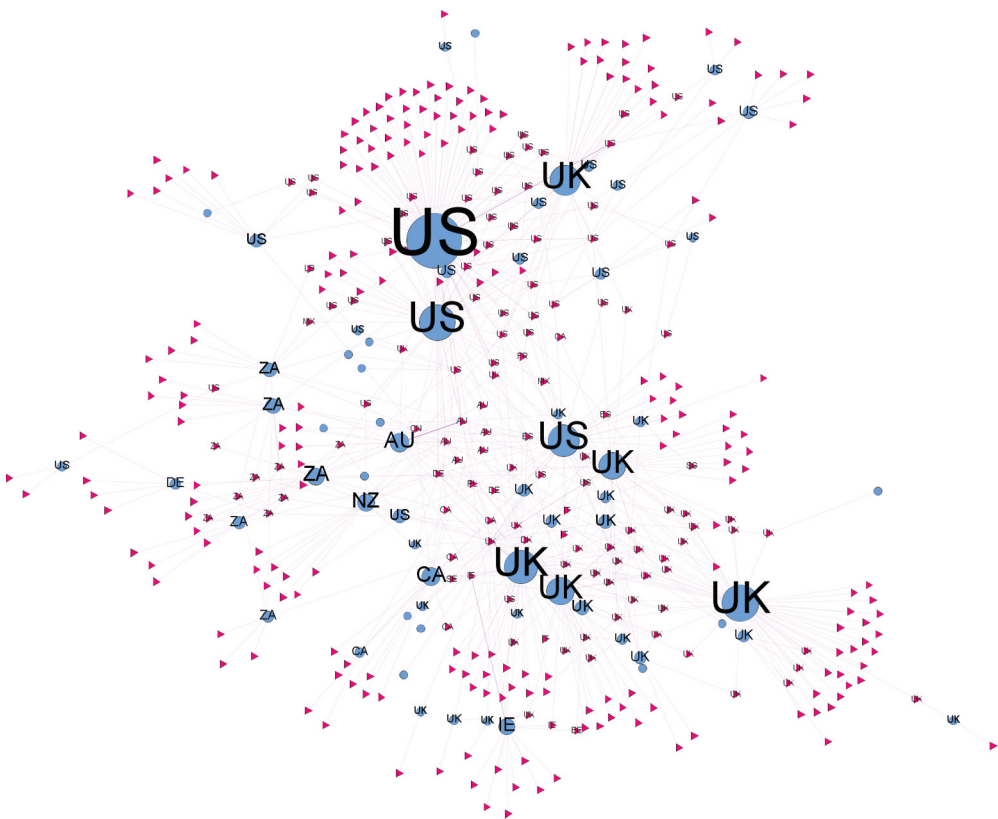
Figure 1. Directed bipartite geo-indexed network of connections between Facebook outlets (blue circles) and geo-indexed locations (red triangles). Nodes sized by out-degree. Pendant nodes with degree of 1, connected to a single outlet, are unlabelled.

Table 2. Descriptive network statistics.

Geo-indexed directed network				
Nodes	Edges	Density	Modularity	E/I index
409	688	0.004	0.629	−0.284

groups from across the world and the collective framing of the movement, transnationally.

Results

Our analysis began with an overview of the connections in the geo-indexed network. In Figure 1, the edges are ties between Facebook outlets, on the one hand, and geo-indexed locations, on the other. The figure was rendered in Gephi using the Yifan Hu (2006) algorithm. In the figure, blue circular nodes represent outlets and red triangular nodes are geo-indexed locations. The visualization reveals multiple clusters of shared locations, e.g., US-based outlets where many geo-indexed places were likewise located in the US, as well as some connections across countries.

Turning to the network metrics (Table 2), the geo-indexed network was sparse and divided into several subgroups. More specifically, the network was characterized by a low density of links among outlets and posts. Further, the network exhibited relatively high modularity while its E-I index was −0.284. In other words, there were multiple cohesive subgroups ($n = 15$) in the network but also an important number of connections across countries. Ultimately, the E-I index for the country variable indicated that despite geo-indexed references and outlets being sparsely connected and tending to cluster in the same countries, there was also clear evidence of transnational ties across countries (e.g., of geo-indexed locations in Germany, Italy and the US referenced by outlets in the UK). Next, we examined such ties through the textual analysis.

Framing the opposition to Covid-19 restrictions

When considering how the opposition was framed (**RQ2**), the qualitative analysis of the geo-indexed posts revealed that while the identification of problems through diagnostic frames was the most common task across locations, posts combined a variety of framing tasks. Below, we illustrate these framing tasks with direct quotes from Facebook posts. First, diagnostic framing delineated a necessary injustice frame by emphasizing the catastrophic social and economic consequences of public health measures for the population, workers and businesses. It depicted those consequences with vivid examples of hardship suffered by workers who were made redundant; or those who faced the risk of contracting the virus due to the negligence of their employers; or of businesses and public institutions shuttered by lockdown and social distancing measures. These frames attributed the injustice to a politically motivated choice by governments to disregard the limited impact of the virus, understood as the small proportion of people infected, compared to the total population placed under lockdown.

> All the parties are unified in Westminster, there is virtually no opposition to any of the restrictions . . . Everything goes through, making parliament a tyrannical entity . . . The only real opposition is us, the ordinary person.

Diagnostic framing asserted the apparent repression suffered by those questioning official messages about COVID-19 and lockdown restrictions who were, moreover, portrayed as scorned by the media or persecuted by the authorities.

> Let's not forget that the WHOLE reason for lockdown, social distancing and face masks is because 'they' don't want the NHS [British National Healthcare Service] to be overrun? The beds are empty and the doctors and nurses have been warned that they will lose there [sic.] job for speaking up.

Closely following the diagnosis of the injustices endured at the behest of governments, prognostic framing chiefly transpired as counterframing directed at debunking prevalent justifications for restrictions and disparaging their sources. Counterframing spotlighted alleged falsehoods perpetuated by government or mainstream media. Whether predicated on the contestation of mask, social distancing and vaccine mandates or of the institutional processes used to introduce them, prognostic framing conjured a narrow range of solutions to the existing state of affairs that were premised on a radical return to an imagined status quo ante: of individual freedom and responsibility; mythical common sense and patriotism; greater democratic accountability directly to citizens and the restoration of meaningful pluralism in public communication.

Motivational framing channeled such arguments by encouraging others to act on righteous beliefs and knowledge; to take part in demonstrations, break mask-wearing mandates and support various forms of collective action ranging from demonstrations to petitions and donations to anti-lockdown organizations.

> I just want to say what a crock of loaded crap when they say they have this Fake virus contained in a couple months ... Study pathology and biology... No viruses can be airborne... I'm waiting for people to wake up to this non sense [sic.] and start making a stand and not to mention stop the 5 G towers that actually created this pandemic ... And fight back for what is [sic] our rights!

When present, such conspiratorial language was weaved not only into diagnostic framing but also prognostic counterframing that flowed, in some cases, into the motivation provided for collective action. With the assistance of the LIWC dictionaries, we then ascertained that words pertaining to cognitive processes were the most frequent in all Facebook posts, whether geo-indexed or not. In the geo-indexed posts, users reflected on their circumstances while saying relatively less about what had caused them (causal language was more limited, as was the use of words connoting assent, Tausczik & Pennebaker, 2009). References to religion and death-related words were more infrequent than terms relating to power, in both geo-indexed and non-indexed posts. Moreover, geo-indexed posts comprised fewer expressions of emotion than the subset of group and page posts that did not contain references to location (see Table 3). Indeed, a Kruskal-Wallis non-parametric H test for the distribution of two or more independent samples confirmed – for the word categories of interest – the distinctiveness of the geo-indexed posts. The test showed a significant overall difference in median LIWC values between the geo-indexed and all the other posts in the Facebook dataset (H = 29.625, $p < 0.001$).

A close inspection with LIWC, of language in the geo-indexed posts pertaining to identity, (**RQ3**), indicated that the strongest statistically significant correlations among the language categories of interest were between references to the ingroup ('we') and affiliation. On the other hand, mentions of the outgroup ('they') and causal language were correlated (Figure 2). The articulation of an ingroup identity (the collective 'we') was marginally more common than the delineation of an outgroup ('they', see Table 3). Nonetheless, the correlations depicted in Figure 2 pointed to a stronger relation between

Table 3. Mean LIWC scores for word categories in the geo-indexed and non-geo-indexed data.

Word category	Cognitive processes	Power	Affiliation	Causal words	We/Us	Negative emotions	They/Them	Positive emotions	Death	Religion	Anger	Assent
Geo-indexed posts												
Mean score	7.090	2.505	1.692	0.883	0.873	0.702	0.534	0.448	0.172	0.147	0.055	0.054
Non-geo-indexed posts												
Mean score	6.828	1.936	2.949	1.027	1.441	2.728	0.537	0.697	0.236	0.218	0.073	0.187
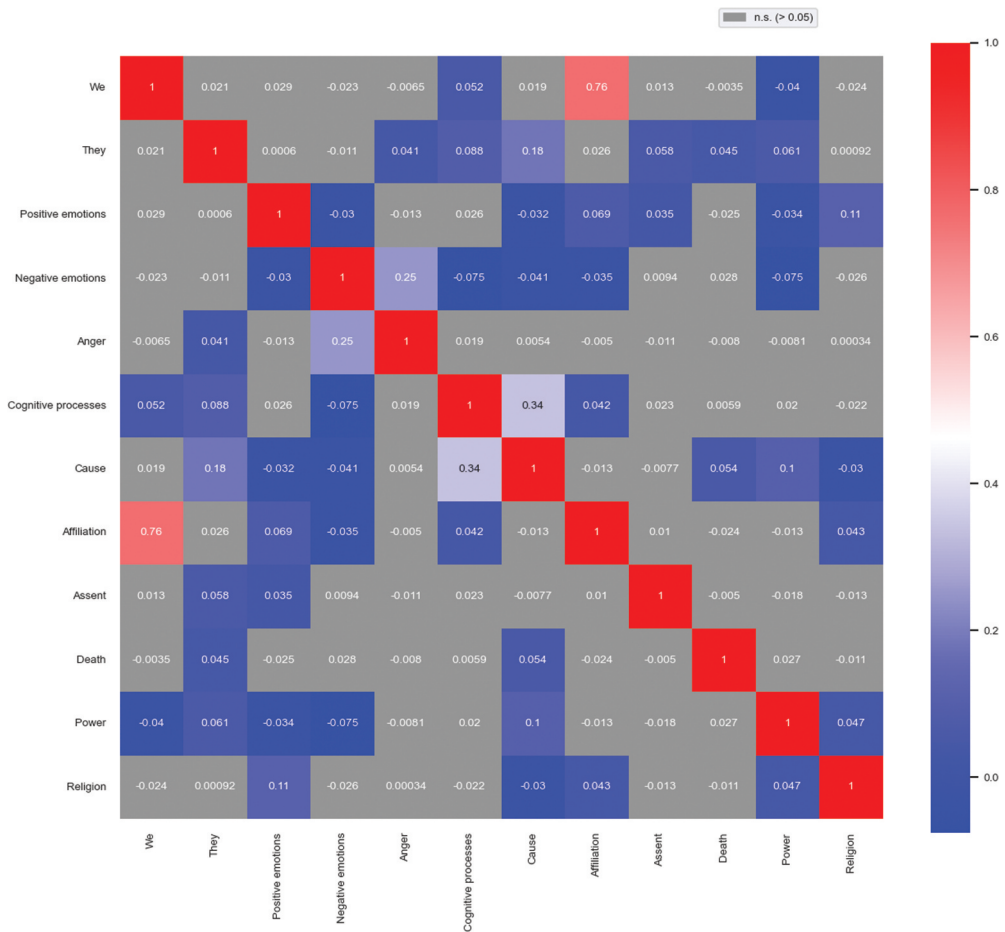
Figure 2. Heatmap of correlations between psycholinguistic word categories in the geo-indexed dataset (Pearson's r, non-significant values of $p > 0.05$ shaded in grey).

causal words and references to the outgroup than to the ingroup. Causal agency was attributed to the outgroup which was additionally referenced in relation to terms encountered in conspiratorial narratives pertaining to power, death and assent. Notably, also, anger was only correlated with references to the outgroup.

Tentatively, these results suggested, on the one hand, that communication reinforcing ingroup/outgroup identification was integral to the geo-indexed communication. On the other, language demarcating an outgroup along with words connoting causality implied that, in part, the posts provided an explanation for recounted events attributable to the outgroup (see Tausczik & Pennebaker, 2009, pp. 35-36s). Also, while relatively limited in scope, some of the language appeared conspiratorial.

Additionally, an important element of the collective identity framing we encountered in the geo-indexed posts was the combatting of stigma associated with anti-lockdown positions through the praising of protest participants (**RQ3**). Instead of hiding what it described as stigmatized views, a geographically pinpointed opposition to lockdowns celebrated its collective action and the courage of protest participants across the world.

Table 4. Count of framing tasks and WUNC displays in the geo-indexed dataset.

Framing task (any)			Collective Identity	WUNC (any)			
2232 (51.04% of total posts)			411 (9.40% of total posts)	1131 (25.86% of total posts)			
Diagnostic	Prognostic	Motivational		Worthiness	Unity	Numbers	Commitment
1549 (35.42% of total posts; 69.40% of posts containing framing tasks)	786 (17.97% of total posts; 35.22% of posts containing framing tasks)	802 (18.34% of total posts; 35.93% of posts containing framing tasks)		332 (7.59% of total posts; 29.35% of posts displaying WUNC)	426 (9.74% of total posts; 37.67% of posts displaying WUNC)	608 (13.90% of total posts; 53.76% of posts displaying WUNC)	294 (6.72% of total posts; 25.99% of posts displaying WUNC)

Making the protesting of restrictions visible in this way was accompanied by pleas for outspoken avowals of anti-lockdown views, of solidarity and appeals to participation in similar actions.

> You are not alone, in the UK curfews, restrictions . . . threats from the Authorities, Local Lockdowns, and now leaked documents show they are going to try and force people to take Tests, have Vaccines . . . This was a 30k protest in London today, and was later broken up by riot Police. Stand Strong people of Australia, we are in this together.

Geo-indexed posts moreover displayed the WUNC of the anti-lockdown movement. As can be observed in Table 4, the greatest proportion of messages containing WUNC displays emphasized the large scale and the unity of the movement. As protesters were not legally allowed to gather in public spaces and society condemned such behavior, anti-lockdown activists used geo-indexed posts to catalogue protests across the world, hail their number or frequency and turnouts.

The occupation of public space in various locations across the world was celebrated as a demonstration of scale as well as a reason for solidarity and a show of unity.

> Look what we gone and done! Epic turn out! There were 700 - 1000 freedom loving individuals from the most diverse backgrounds, causes, interests, and ethnicities – but all united by an overwhelming drive to correct the biggest and most unnecessary catastrophe in generations: the Lockdowns. And this was just Auckland – so many other venues had such encouraging turnouts.

Recurrently, Facebook posts addressed a recognized stigma associated with anti-lockdown views by emphasizing the worthiness of those involved in the opposition. Posts often framed protest participants as 'freedom fighters' and patriots reinforcing a positive in-group identity seeking to foster the willingness to participate in street protests. Articulating a contrast to social narratives presenting anti-lockdown views and the denial of the impacts of COVID-19 as ignorant and irrational, protestors were presented as agents fighting for the cause of freedom and for their nations. The frame fed into a narrative of virtue and authenticity, as any stigma associated with conspiratorial ideation was replaced with the defense of higher moral values rooted in libertarian orthodoxy and a righteous defiance of public health mandates.

> Beautiful Freedom Fighters. We must support each other during these difficult times. We hope to see you on 28th November, 12 pm at Battersea Park, London, where we can all unite as one.

Finally, anti-lockdown activists posting on Facebook emphasized the commitment of the opposition to the cause. In some cases, this type of messages showcased a determination to break lockdown rules. Other posts highlighted a resolve to continue participating in public protest despite perceived acts of repression by governments and any social condemnation.

> Liverpool AGAIN Stands DEFIANT To Lockdown Tyranny (14/11/20) Despite repeated threats through social media & mainstream media from Merseyside police . . . [residents] chose to IGNORE the warnings & threats from the police and headed out onto the streets of Liverpool en masse. (original emphasis)

The will to stand up for individual freedoms and against perceived authoritarian rules was reinforced by claims – some derived from apparent conspiracy theories – that the in-group was persecuted by elites (e.g., through mass arrests and an unwillingness to give voice to alternative accounts about the course of the pandemic). Posts singled out the media and public authorities as responsible for silencing them and, equally, for making the consequences of the pandemic worse through their actions. Such posts attempted to countervail marginalization and stigma with a drive to paint the actions of such actors as corrupt.

> So, the CDC releases new information that shows 6% of the death total can actually be attributed to COVID and all social media platforms are banning this from being posted. And the media is silent. My previous post on this, from the CDC, was 'Fact Checked' as false information ... It's all about the U.S elections and Trump not wanting to be part of the WORLD ECONOMIC FORUM. (New World Order)

Discussion and conclusions

Building on the conception of indexing practices on social media as distributed framing (Ince et al., 2017), this article explored geo-indexing on Facebook groups and pages explicitly associated with the opposition to COVID-19 restrictions. The analysis pursued three research questions. First, we investigated whether geo-indexing helped connect the predominately English-language Facebook outlets that nevertheless encompassed an array of countries (**RQ1**). While connections among outlets and geo-indexed locations tended to cluster in the same countries, we found evidence of transnational ties across countries that corroborated and nuanced **H1**. Our analysis suggested that geo-indexed posts can be used to gain visibility for protests, despite any risks to activists from being monitored (Uldam, 2017). Such visibility can help materialize relations between locations even in exceptional circumstances such as during a period when concerted efforts were made precisely to limit gatherings, in the interest of public health.

The geo-indexed posts publicized actions not only within countries but also transnationally. They allowed the opposition to public health measures to counterframe restrictions to its scope. In that way, geo-indexing helped to rhetorically attain a structural equivalence (**RQ2a**) on which to build a shared collective identity and perceptions of WUNC among the ingroup. Instrumental to the attainment of structural equivalence, we would ask if geo-indexing can preface more sustained coordination. While the topic is outside the remit of this article, we reviewed textual evidence from the Facebook posts pointing to parallelism among physically enacted protests – some of which happened simultaneously whereas others were invoked as exemplary precedents.

Thus, geo-indexing demonstrations, we argue, can be a concerted means to reconfigure the geography of physical space – especially when it is officially closed to protest – so as to not only garner the attention of the authorities (Salmenkari, 2009, p. 241), but, symbolically more significantly, to reclaim it for collective action. Accordingly, we see geo-indexing as having theoretically important practical implications. It is a communication practice that can aid a social movement – including one with a stigmatized identity – build a social infrastructure that may be hard to contain, locally (cf. Ging, 2017); one that is not only embedded in

a specific political context (González-Bailón & Wang, 2016), but which also seeks to redefine it – e.g., as open for protest despite any lockdowns – including transnationally.

Second, our analysis of the language in the geo-indexed posts and of the framing tasks displayed partly supported **H2**. It painted the opposition as unified around an interpretation contesting public health measures as excessive and its members as democratic patriots rising against a socio-economically unjust and undemocratic public health regime described as common across multiple jurisdictions. Yet, whereas an earlier case study of the anti-lockdown mobilization online (Innes & Innes, 2021, p. 7) argued that there was a nexus between 'conspiracies and real-world action' by the opposition to the public health measures, markedly conspiratorial language in the geo-indexed Facebook posts was, nevertheless, less prominent than that of COVID-19 conspiracy-peddling influencers and their followings on Twitter (Fong et al., 2021). Similarly to COVID-19 conspiracy-laden talk on Twitter (Darius & Urquhart, 2021), the geo-indexed communication on Facebook that we investigated was orientated towards cohering the stigmatized activist in-group; and, we can add, less towards attributing causal blame to a hostile outgroup.

Our article further evidenced a common vocabulary among members of the transnational opposition outwardly signposted with geo-indexed posts. That vocabulary was used to diagnose perceived common injustices as well as to counterframe actions by a hostile outgroup; and, moreover, to motivate the ingroup's counteractions to restore lost rights and values (**RQ2b**). In as much as movements challenging the information order have so far been spotlighted for their disruptive narratives – e.g., for spreading dubious information about the corruption of public institutions and the malevolence of mainstream media (Bennett & Livingston, 2018) – the counterframing performed with geo-indexed posts was disruptive, albeit with a more limited than expected use of conspiratorial language, as well as remedial. It celebrated an ingroup spread across a multitude of countries, its values, motives, identity and the WUNC of its collective action. Consequently, our integrated analysis of framing tasks encourages a contextual reading of disruptive narratives and their deployment. In the case of the geo-indexed posts, disruption to the information order was allied but secondary to a more immediate goal to mobilize both a consensus and action (Benford & Snow, 2000) among an opposition facing restrictions to public gathering and to self-expression on Facebook.

Third, the articulation of a collective identity in the geo-indexed posts served a similar mobilizing purpose. Word categories pertaining to the in-group and affiliation were most strongly correlated in the LIWC analysis, suggesting that the geo-indexed posts were used to cohere the opposition and demarcate it by reference to an outgroup that prominently included the government and the media. The anti-lockdown protestor was framed as an authentic and virtuous defender of democratic freedoms and rights (**RQ3**), outwardly encouraged to regard herself as engaging in a righteous effort.

We interpret this identity work as another important characteristic of the opposition to the extent that its collective identity was predicated not just on reclaiming, for the ingroup, stigmatized identities (Santos, 2020) – namely ones associated with mistrust of science and individualism – but also on turning them into more widely celebrated identity categories such as that of the 'patriot' or the 'freedom fighter'. In line with **H3a** and **H3b**, then, the geo-indexed posts helped surface in-group understandings of what it meant to be opposed to public health

restrictions and likewise to bolster perceptions of the WUNC of the movement, on Facebook. The posts affirmed the virtue of transgressing public health measures, extolling those who said or did so, in various jurisdictions. Such posts, we would contend, may contribute to the consolidation of the in-group (Darius & Urquhart, 2021, p. 9) in a specific way, viz. by defining, making visible and positioning the ingroup geographically, in relation to its multiple constituents as well as to its out-group. That visibility may be particularly valuable to a movement in a context – such as that of the COVID-19 pandemic – where its collective action is constrained.

Comparative analyses may look at the extent to which geo-indexed posts are deployed strategically, on Facebook and other social platforms, by investigating the balance that movements strike between the four elements of WUNC displays, in transnational as well as nationally circumscribed and local protests, and in circumstances different to those of the COVID-19 pandemic. Drawing on our findings, we would hypothesize that geo-indexed posts are used chiefly to evidence numbers – of protests and participants – and unity among them. Such usage may be particularly important for fledgling or transgressive movements like the COVID-19 opposition (Kowalewski, 2021) attempting to secure their internal cohesion across multiple locations, to build momentum and in-group motivation at the same time as they fight to gain public legitimacy.

To further situate these observations in the literature on protest participation, we recall that exposure to information about protest on social media increases identification with a movement's cause as well as individual efficacy. These factors then act as mediators between social media usage and participation in street protests (Hsiao, 2018). A fertile medium for such exposure, the geo-indexed posts illustrated how in-group identity can be tied together with location and how both are deployed to bolster participation by asserting solidarity, a positive collective identity and scale.

Equally, we would invite research into relationships between the display of WUNC elements on social media and protest locations. Although this was not the focus of the research presented in this article, one further question to probe is whether the size of a place bears any relation to the type of WUNC elements displayed; and, more specifically, whether some WUNC elements such as commitment are more likely to be displayed in small localities where close physical proximity and the kinship that aid protest mobilization may be more readily available than in a larger place (see Charrad & Reith, 2019, on mobilization in the Tunisian village of Sidi Bou Zid, which became the spark for the Arab Spring). In our case, commitment displays were distributed across a spectrum of localities whose median population was, however, above 1 million inhabitants.

Finally, the geo-indexed data offers only a narrow snapshot of the public communication on Facebook groups and pages. This is a substantial limitation – albeit one that cannot be surmounted with the existing level of access afforded by Facebook to independent researchers. This data only provided the opportunity to analyze the use of place names in public posts and primarily in English (see online appendix). Consequently, it was the basis for an exploration that we are unable to generalize to other language communities and one which precludes insights into organic communication between individual users variably located around the world. Nonetheless, this research illuminates the studied COVID-19

opposition as a transnational movement unified in its expression. It draws attention to geo-indexing as deserving of scholarly attention as a communication practice that has implications both internal and external to social movements, transnational or otherwise.

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