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van Haperen, S. ; Uitermark, J. ; van der Zeeuw, A.

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MEDIATED INTERACTION RITUALS: A GEOGRAPHY OF EVERYDAY LIFE AND CONTENTION IN BLACK LIVES MATTER*

Sander van Haperen, Justus Uitermark, and Alex van der Zeeuw†

The Movement for Black Lives has connected millions of people online. How are their outrage and hope mediated through social media? To address this question, this article extends Randall Collins's Interaction Ritual Theory to social media. Employing semisupervised image recognition methods on a million Instagram posts with the hashtag #blacklivesmatter, we identify four different interaction ritual types, each with distinct geographies. Instagram posts featuring interactions with physical copresence are concentrated in urban areas. We identify two different types of such areas: arenas where contention plays out and milieus where movement identities are affirmed. Instagram posts that do not feature physical copresence are more geographically dispersed. These posts, including memes and selfies, allow people to engage with the movement even when they are not embedded in activist environments. Our analysis helps to understand how different forms of engagement are embedded in particular places and connected through the circulation of social media posts.

On July 13, 2013, Alicia Garza shared her emotions on social media after hearing the verdict in the case of Trayvon Martin's death:

"I was sad, I was angry, I was rageful," she says, [posting] what she describes as a "love letter to black folks" on Facebook. . . . "Black people. I love you. I love us. Our lives matter." (King 2015: n.p.).

About seeing that post, her fellow organizer Patrisse Cullors says it "hit me in the gut. . . . I slapped a hashtag on it because I understood the power of spreading messages" (Martin 2015). By sharing these emotions online, they (together with Opal Tometi) catalyzed a transnational Movement for Black Lives, demonstrating how digital connectivity "can help create, set, and maintain a mood in a protest [and] allow the protest to feel bigger than the location" (Tufekci 2017: 111). By engaging in interactions on social media, we share love, anger, and sadness, potentially forging social movements with people both near and far.

Understanding how emotions are shared is a cornerstone of social movement research (Aminzade and McAdam 2002; Flam and King 2005; Goodwin, Jasper, and Polletta 2009; Jasper 2011). Interaction ritual theory is a compelling avenue for understanding mediated emotions in social movements, particularly because it highlights that the social movement experience is based in different kinds of activity (Collins 2004). Randall Collins suggests that emotional energy is generated in interaction rituals (IRs), which are characterized by four ritual ingredients: barriers to outsiders, shared moods, a mutual focus of attention, and bodily copresence (Collins 2004: 48). Interaction rituals contribute to feelings of solidarity and group membership. This process is powerfully at play in social movements: as people participate in interaction rituals, they come to identify as part of and with a movement, its causes, and its symbols (Collins 2001).

* We are grateful that the owners allowed us to share the images they posted on Instagram. We thank the anonymous reviewers and Randall Collins for thoughtful and thought-provoking comments on this article.

† Sander van Haperen is postdoctoral researcher at the Institute for Social Science Research at the University of Amsterdam. Justus Uitermark is Professor of Urban Geography at the Institute for Social Social Research at the University of Amsterdam. Alex van der Zeeuw is Ph.D. candidate at the University of Twente. Please direct all correspondence to s.p.f.vanhaperen@uva.nl.

However, even though social media have become entangled with every stage of social movement development (Juris 2009; Tufekci 2017), it is insufficiently clear how emotions are mediated through digital networks. Ostensibly, social media allow for the sharing of emotions across places, that is, rituals where participants interact without physical copresence using digital communication methods. Considering how “new electronic media are changing the conditions for IRs” (Collins 2011: n.p.), Collins suggests that electronic media mostly supplement and feed off offline relationships, arguing that entrainment and synchronization are more difficult in the absence of bodily copresence and that mediated interactions are therefore unlikely to arouse high levels of emotional energy (Collins 2004: 62). At the same time, research consistently indicates the potential of digital media for fostering communities, emotions, and solidarity without face-to-face contact (Beneito-Montagut 2015; Crossley 2015; Stieglitz and Dang-Xuan 2013; Vasi and Suh 2016). Nevertheless, to our knowledge there is no prior research employing interaction ritual theory to study emotions in digitally networked movements. Thus, our main question is how are emotions mediated online in digitally networked movements?

To answer that question, this article examines the types of mediated interactions people have in digitally networked movements. Based on theoretical review and preliminary analysis, we identify four interaction ritual types by distinguishing two dimensions: the presence or absence of physical copresence and the presence or absence of conflict. This typology helps to explain the different ways in which people across the country engage with the Movement for Black Lives, and where the emotional energy is created that is necessary for sustaining social movements.

MEDIATED INTERACTION RITUALS AND SOCIAL MOVEMENTS

Interaction ritual theory proposes that the development of social movements depends on empirical mechanisms through which emotions are shared and transformed (Collins 2001, 2004). Collins asserts that four ingredients determine the intensity of interaction rituals (2004: 48). Together, these ingredients contribute to the generation of emotional energy and thus how successful the interaction ritual is in generating the feelings of solidarity, strength, and initiative necessary for sustaining social movements, which Emile Durkheim called collective effervescence (1912). First, barriers to outsiders provide a sense of group membership among participants, while excluding others. Second, participants focus their attention on an activity or object about which they communicate a shared awareness. Typically, only a small number of things can be focused on, meaning that the attention space in a group is limited. Third, participants come to share a common mood, such as anger or joy, fostering interpersonal emotions. Fourth, Collins considers in depth the necessity of bodily copresence (2004: 53–64, 2011), arguing that the intensity of rituals is diminished in the absence of verbal and visual microcues that facilitate attunement.

These four ingredients are interrelated. For instance, a shared focus of attention and shared mood feed into one another, allowing closer synchronization of microcoordination such as body language between participants, stimulating stronger entrainment. We focus on the configuration of these ritual ingredients in mediated interactions, to understand better the development of digitally networked social movements.

Contentious and Affirmative Mood and Focus

Media can be the conduits of powerful contentious emotions, allowing for a mutual focus and shared mood among large numbers of individuals. Even in 1963, shocked television audiences felt they were “first hand witnesses” after viewing live broadcasts of Kennedy’s assassination, making it “clear that television and electronic media, in general, have greatly changed the significance of physical presence in the experience of social events” (Meyrowitz 1987: vii). A shared mood is invoked when rituals are viewed and shared *en masse*.

Compared with the indirect channels of traditional media, the personal networks characterizing social media may make content even more contagious (Törnberg 2018). Consider the

death of Oscar Grant, as one example from among too many similar tragedies. At 22, he died on January 1st, 2009 in the Oakland Fruitvale station where he had been pulled out of a train and then shot in the back while in handcuffs (Antony and Thomas 2010). Videos taken by subway commuters using cellphones showed his arrest from multiple perspectives, which were then shared on social media. Within days, a crowd of about 500 people gathered at the Fruitvale station to protest the shooting. The power of contagiously mediated outrage was such a concern that it led the judge to impose gag orders during the trial and to ban the use of cell phones in the courtroom, moving the trial to Los Angeles even ten months later due to “the specter of possible unrest” (Lee and Bulwa 2009: n.p.). Compared to broadcast media, the diffusion of information in personal networks is difficult to control.

But social media are more than conduits for information exchange, as they also allow for the sharing of emotions based on shared interests. By considering online interactions as mediated interaction rituals, we want to emphasize the importance of sharing everyday movement experiences. Patricia Hill Collins noted how social science “typically focuses on public, official, visible political activity even though unofficial, private, and seemingly invisible spheres of social life and organization may be equally important” (P. Collins 2000: 202), and the social movement literature has similarly tended to overemphasize contentious politics (Snow 2004: 19). Communities, and activists especially, rely on everyday solidarities that arise from sharing a focus and mood (Collins 2001). Social media are designed to do just that: share personal experiences (O’Reilly 2007), and we know that a sense of community can thrive online (Beyer 2014; Rheingold 2000; Turkle 1995). In online communities, peer groups are found by sharing a focus rather than meeting people in your vicinity and finding out whether interests and values match: “the topic is the address” (Rheingold 2000: 11). Such mediated, interest-based communities can develop and foster strong notions of shared identities (Clark 2014; Norton 2012), which are critical for undertaking collective action (Gamson 1995; Hunt and Benford 2004; Melucci 1996).

In short, social media allow us to share experiences through personal networks. Doing so constitutes mediated interaction rituals by facilitating a shared focus and mood. Ranging from contentious to affirmative, a shared mood and focus emotionally fuel digitally networked communities of “outrage and hope” (Castells 2012: 2).

The Absence of Physical Copresence

Social media allow for sharing emotions without physical copresence. Because physical copresence is a key ingredient for interaction rituals, Collins is generally skeptical that media allow emotional energy to animate and sustain movements (Collins 2011). He suggests that mediated interaction rituals are likely to be superficial because without bodily copresence it is easy to contrive information to present a favorable frontstage image (cf., Goffman 1959). Also, because microcoordination is more difficult, entrainment is less likely. He acknowledges that mediated interactions can generate emotional energy and foster ties as second-order circulations of original rituals (Collins 2004: 95), in which the celebration of precharged symbols is repeated. Nevertheless, Collins suggests such disembodied interactions are unlikely to create the strong emotional energy associated with effervescence, which is necessary in social movements.

Social movements, however, do not only rely on mass gatherings characterized by bodily copresence. Movements survive and are effective to the degree that they win out in the competition for limited public attention, which crucially depends on how activities and experiences reach others through media conduits (Baumgartner and Mahoney 2008; Collins 2001; Hilgartner and Bosk 1988; Jones 1994; Woodyly 2015). Social media have further reinforced the dynamics of the “attention economy” (Tufekci 2017: 79), given the particular affordances of social media, such as visibility and continual connectedness, which allow for mutual attunement among people (Evans, Pearce, Vitak, and Treem 2017). When interacting online, participants become attuned to each other to the extent that their emotions and actions synchronize and they experience entrainment. For example, Collins mentions how low-level entrainment can occur in email exchanges by repeatedly reinforcing the urgency of a call to action by sending messages to

numerous recipients who can (but often do not) relay the message to others (Collins 2012: n.p.). More intense examples of online entrainment include tweet storms on Twitter (Tufekci 2017: 178–180), high-level coordination in online multiplayer games, live stream broadcasts from within direct actions, or Anonymous' trolling and hacking operations (Uitermark 2017). On social media, a trending hashtag and the accompanying awareness that many others are using it can be exhilarating, providing a sense of being in the thick of things.

The absence of physical copresence raises questions about boundaries between insiders and outsiders. The establishment of a collective identity, “a sense of ‘we’” (Taylor and Whittier 1992: 105), crucially depends on determining who is part of that collective. That may be difficult on social media. The affordances of visibility and (semi-)public nature of social media allow multiple audiences to be simultaneously aware of interactions (Evans et al. 2017). This leads to a collapse of the contexts which otherwise inform how audiences are addressed and delineated (boyd 2014; Meyrowitz 1987). In terms of interaction rituals, context collapse leads boundaries between insiders and outsiders to become increasingly ambiguous.

Still, experiences that are shared online occur in the places where we live and gather with others. Interactions on social media are intricately entangled with the geography of everyday life (Nicholls, Uitermark, and van Haperen 2016). A key reason for this is that different settings are conducive to different types of gatherings (Collins 2004), and social-movement-related interactions may be more common in certain locations. For example, the infrastructural conditions suitable for contentious actions on a mass scale are found primarily in cities and particular places within them (Nicholls 2009). Such gatherings rely on the availability of suitable locations for staging contentious performances or the enactment of oppositional identities. Those are especially likely in central areas with high visibility and symbolic significance, including central squares and city halls or monuments (Rafail 2016). Another reason may be that performances are especially likely in neighborhoods with a social and cultural infrastructure that supports gatherings or that has a history of social movement mobilization: for instance, Harlem (Eyerman 2001). Thus, rituals relying on physical copresence likely remain strongly rooted in geographies.

Social media may allow for other kinds of rituals that rely less on infrastructural boundaries. Such mediated rituals would for the most part neither rely on others being physically present nor on the physical availability of places for contention or social gathering, and as a result, interaction rituals not relying on physical copresence may have a more dispersed geography. Although the dispositions and skills to comment on current affairs or to create memes are not evenly distributed across the population and (hence) space, these types of posts do not rely upon the infrastructure of particular places or neighborhoods. While interactions online remain organized by proximity (van Haperen, Nicholls, and Uitermark 2018; Yardi and boyd 2010), social media allow people to experience and share messages and images with others beyond their immediate vicinity. Thus, some rituals would not require bodily copresence and, theoretically, might be aspatial.

In sum, we think that social movements are emotionally fueled through series of interaction ritual chains, and that the mediation of such interactions through social media allows activists to share a focus and mood with diverse publics without physical copresence. We seek to understand this process by not just considering contentious events, but also other ways in which people engage online with respect to social movements. This may help to explain how and where mediated interaction rituals fuel the development of social movements in the digital age.

METHODOLOGY

In order to study how and where emotions are mediated in a digitally networked movement, we examine how participants share a focus of attention and mood on social media, with or without physical copresence. To that end, we collected photos from Instagram, developing a typology of interaction rituals. We then algorithmically examined geocoded posts according to that typology and their locations.

Launched in 2010, Instagram ranks among the world's foremost social media platforms, used by 32% of the online adult American population in 2016, with more users and more active daily

users than Twitter (Greenwood, Perrin, and Duggan 2016). Instagram is designed as a platform for sharing photographs, stimulating people to share daily life with followers through images. This serves our analytical focus on the transmission of emotions by emphasizing follower interactions. Data were collected from the Instagram API using the tool Kijkeens (Boy 2016). We collected the metadata of 1,127,248 Instagram posts tagged with #blacklivesmatter in the ten-month period between June 15, 2015 and March 15, 2016. Of these, 91,818 included geotags.

Examining the Ingredients of Mediated Interaction Rituals

We conducted preliminary analysis to familiarize ourselves with the data and assess technical feasibility. We drew a sample of 156 geotagged posts, selected randomly from images posted on three separate days: 59 posts on August 27, 2015; 56 posts on February 16, 2016; and 47 posts on March 19, 2016. These dates were selected for offering the largest number of unique users per day, while separated by substantial intervals. We discussed screenshots of these posts (including captions and comments), then used Atlas.ti to assign codes informed by the ritual ingredients: a shared mood and focus, group boundaries, and physical copresence. This preliminary analysis led to the typology of interaction rituals reported in table 1.

We distinguish two key dimensions. The first axis differentiates posts according to whether they are characterized by bodily copresence or not. The second axis differentiates posts according to whether the focus of attention is contentious or affirmative. This delineates four types of mediated interaction ritual: a contentious focus and physical copresence (direct action), an affirmative focus and physical copresence (everyday solidarity), a contentious focus but no physical copresence (conflict memes), and an affirmative focus but no physical copresence (iconic lifestyle).

Table 1. Mediated Interaction Ritual Types

		Contentious Focus	Affirmative focus
Bodily Copresence		<i>Type 1: Direct actions</i>	<i>Type 2: Solidarity</i>
	Geography	Arenas: City hall, streets, squares	Milieu: city, venues, sports
	Examples	Rallies, marches	Concert, sports match, family
	Typical image keywords	Crowds, signs, police	Performers, athletes, children
	Percent of images	2.64%	33.39%
No Bodily Copresence		<i>Type 3: Conflict memes</i>	<i>Type 4: Iconic lifestyle</i>
	Geography	Isolated from milieu & arenas	Milieu: city, barbershops, galleries
	Examples	Malcolm X quote	Food, selfies, cats, paintings
	Typical image keywords	Text, no persons	Selfies, Fashion, Objects, texture
	Percent of images	24.89%	39.08%

Image Recognition and Classification

Having determined what kind of mediated interaction rituals people engage in, we then used machine learning to examine the prevalence and relevance of these rituals in a digitally networked movement. We developed a semisupervised categorization of photos using image recognition. This allowed us to determine which elements are typically associated with ritual ingredients and to train an algorithm to classify a large number of photos accordingly. The procedure consisted of the following steps.

First, we employed an image recognition algorithm on a large number of photos. To that end, all geotagged photos were processed using the image recognition service Clarifai. This service was chosen for using a deep convolutional neural network outperforming ImageNet classification benchmarks (Zeiler and Fergus 2014). A list of twenty keywords was returned for each photo,

including “corresponding probabilities of how likely it is these concepts are contained within the image or video” (Clarifai 2017: n.p.). These keywords describe concepts such as “outdoors,” “no person,” and “crowd.” Corresponding probabilities represent the classification model’s performance, calculated by Clarifai as AUC-ROC scores (Zeiler and Fergus 2014). Ranging between 0 (reversed class separation) and 1 (perfect class separation), we sought a high level of accuracy and imposed a threshold of 0.95 (24,350 or 7.2% of all 337,140 keyword matches)¹. In total this procedure yielded 2,901 different keywords for our dataset.

Second, we used these image-recognition keywords to classify each photo as one of four corresponding interaction ritual types. A training sample of 918 posts (1%) was randomly drawn from the geotagged and Clarifai-labeled photos. The keywords of each image in this training sample were evaluated manually and assigned to the ritual ingredients. For instance, the keywords “no person” and “typescript” were interpreted as indicators of the absence of bodily copresence (further examples for each type are provided in table 1). Note that not all 2,901 available keywords were assigned to a ritual type, and because we are interested in different configurations of the same ingredients, keywords were not assigned exclusively to a single ritual type (e.g. the keyword “no person” applies to two ritual types). The accuracy of the algorithm was iteratively refined by manual examination of the training sample. Although requiring more interpretation than a strictly statistical approach (e.g. logistical regression), an exploratory approach allowed us to develop a robust familiarity with the data in the interest of validity. This supervised procedure resulted in a lexicon: corresponding combinations of keywords for each of the four ritual types.

Third, we used this lexicon to algorithmically classify the rest of the geotagged photos in the dataset. The twenty keywords and corresponding prediction scores assigned to each image were referenced against the lexicon for each of the four ritual types. Assignment to a ritual type was based on a cumulative prediction score. This was calculated as the proportion of probability scores for which keywords matching each ritual type account, out of the total scores for all of the image’s twenty keywords. An image was assigned the ritual type with the highest cumulative score. Our procedure led to the classification of 44,493 geotagged images (3.9% of all images, and 48% of all geotagged images) as one of the four ritual types.

Assessment of the Classification Algorithm

To assess how well the algorithmic classification performs, we estimated reliability and consistency scores. First, the reliability of the algorithm was assessed formally in a pilot test conducted independently of the authors. Two human coders were trained individually by providing and discussing four photos as examples for each ritual type. After training, each human coder was independently presented with the same sample of 300 Instagram posts, without captions, comments, or corresponding image keywords. In order to incorporate the reliability sample into the full set of images, we compared any coding disagreements with the authors’ coded sample and decided by majority rule.

Second, from the coded result we estimated Krippendorff’s alpha (2004), a nonparametric measure of intercoder agreement. We note that data independence cannot be assumed, as multiple photos may originate from the same user, and because we have theoretical expectations about the geographic concentrations of certain ritual types. The coefficient was calculated using the “irr” package in R (Gamer, Lemon, Fellows, and Singh 2012). We decided to aid interpretation of the results based on Richard Landis and Gary Koch (1977): 0-0.2 slight agreement, 0.21-0.40 fair agreement, .041-.060 moderate agreement, 0.61-0.80 substantial agreement, 0.81-1 near perfect agreement. We report the coefficients between human coders and algorithmic classification and solely between human coders, to assess the accuracy of the algorithm compared to human coders.

The Krippendorff’s alpha value for the combined sample data set (algorithmic and human coded) was equal to 0.71 with a 95% confidence interval (0.66, 0.76). Based on Landis and Koch’s framework, this represents substantial agreement among human and algorithmic classifications. Solely among the human coders, the alpha was 0.69, likewise indicating substantial, albeit slightly less, agreement. For the coders compared individually to the algorithmic classification,

Krippendorff's alpha values were 0.76 and 0.63, respectively. It should be noted that the algorithm coded 100% of the sample data, while the human coders classified 99% and 97% as one of the four ritual types, suggesting that the typology is both sufficiently exhaustive and exclusive.

Third, for comparison purposes, we also estimated the intraclass correlation coefficient (ICC) (Finn 1970). Whereas the Krippendorff's alpha indicates overall agreement between coders, ICC measures reproducibility between coders. It shows how consistent coders are so that any systematic differences, which result, for instance, from differences in training, can be taken into account. For our purposes, it is also an indicator of how consistent the algorithmic classification is. The ICC values were equal to 0.76 for the combined algorithmic and human coding sample, and 0.74 between the human coders when the model was tested for consistency. By comparison, ICC values for the combined sample were slightly higher than Krippendorff's alpha, which is to be expected. Taken together, these statistics indicate that the algorithmic classification is both substantially reliable and consistent in comparison to human classifications.

Geographies of Interaction Rituals

To chart where different interaction rituals take place, we examined the geotags that Instagram users may choose to attach to their posts. Of the 1,127,248 posts in the dataset, 91,818 (8.1%) are geotagged. These geotags provide the exact latitude and longitude coordinates of the location from which users post. We explored the geography of mediated interaction rituals at the national and neighborhood levels to find both broader patterns and specific locations that stand out as sites for the four types of interaction rituals. At the neighborhood level, we expected that certain neighborhoods with symbolic sites would serve as arenas for contentious interaction rituals (e.g., centrally located squares, city halls), whereas other neighborhoods should provide the milieus conducive to the affirmation of shared experiences (e.g., concert venues, churches). To test this expectation, we examined neighborhoods at the level of postal codes. We used the Google Maps geocoding service (Google 2014) to aggregate coordinates at various administrative levels, including city and postal code. We calculated a concentration ratio for each of the four ritual types in comparison to the user base in specific neighborhoods. User bases were computed as the fraction of users who posted from the region, compared to all users in the dataset with a determinable location. A region's overall ritual type was determined as the percentage of posts of coded with a particular interaction ritual type shared from that location.

Limitations

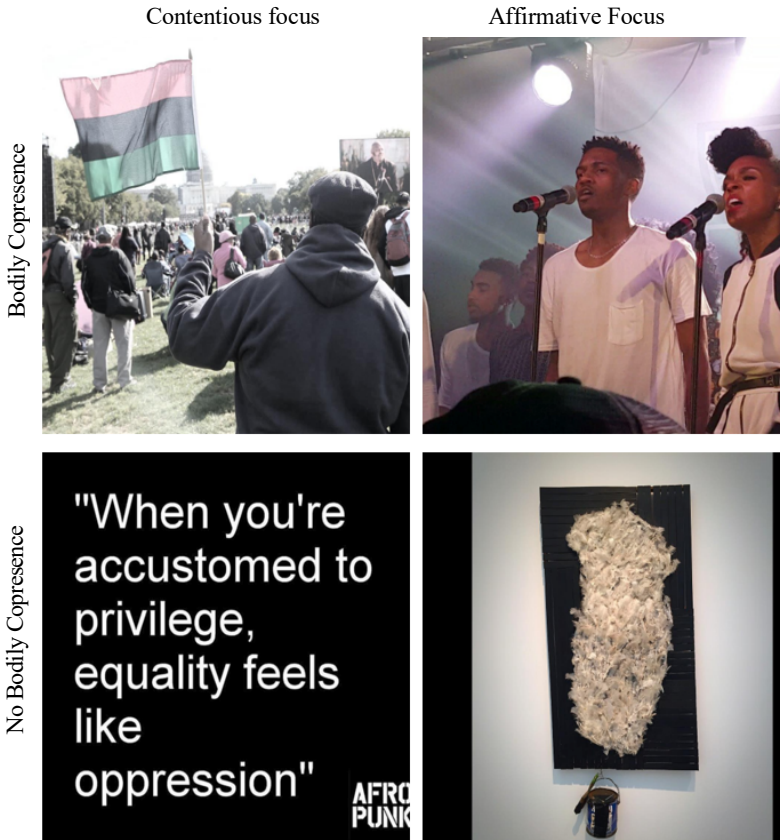
Likely selection biases are an important limitation of Instagram data, as we know that not everyone uses Instagram in the same way (González-Bailón, Wang, Rivero, Borge-Holthoefer, and Moreno 2014; Tufekci 2014). Posts on Instagram are selective representations about selective topics from selective individuals (Boy and Uitermark 2016). Instagram's user base is estimated to consist of 62% females and 38% males, who tend to be young (median ages eighteen and twenty-three respectively), and the relationship between culture and usage of the platform is complex (Greenwood et al. 2016; Souza, de Las Casas, Flores, Youn, Cha, Quercia, and Almeida 2015). Importantly, access to and uses of social media are not only stratified by gender, but also by class and race (Murthy 2008). Similarly, not all users are equally likely to disclose their location (Rainie, Kiesler, and Madden 2013). This is particularly true for activists engaged in contentious politics due to risks and inequalities both external and internal to the movement (Clark 2014; Sobieraj 2017). Experience as users of Instagram as well as familiarity with the population and content (particularly photos without geotags from the same dataset) may go some way to ameliorate this selection bias. Consequentially, we are careful not to equate our dataset of activity and users related to the hashtag #blacklivesmatter on Instagram with the social movement in general. We think of these posts as curated representations, interactions made visible on social media: "a carefully crafted performance through which self-presentation is achieved under optimal conditions" (Papacharissi 2002: 348).

Data were collected as per the Instagram terms of service in force at the time of collection, stipulating uses of data and user consent (Instagram 2013)². Addressing concerns about risk of harm to users, particularly in the context of individuals engaged in contentious actions, we stored metadata encrypted and on privately owned servers for educational and analytical purposes in the public interest (Moreno, Goniu, Moreno, and Diekema 2013). Media files such as photos were not stored, but in specific cases retrieved later for content analysis, ensuring that when users did not wish to display content publicly and had since removed or made content private, their data are not included in content analysis. No identifiable information is reported, and we contacted specific individuals requesting permission to publish their photography. Their participation was voluntary and could be withdrawn at any time during the research, and we believe their participation does not cause risk of harm. They were informed about the context in which their information would be used, including the reported description and interpretation. To reduce risk of harm and to ameliorate ethical concerns about pinpointing specific activist locations or groups, we report information on aggregate geographical levels.

FINDINGS

How are emotions mediated online in digitally networked movements? We reason that emotions are shared in interactions, and examine #blacklivesmatter interactions that people engage in on Instagram. Based on Collins’s ritual ingredients, we describe in detail four different types of interactions and their locations. We propose a typology that delineates social media posts along two axes that represent ritual ingredients. Typical examples are shown in figure 1.

Figure 1. Visual Exemplars of the Four Types of Interaction Ritual



Most #blacklivesmatter interactions on Instagram are about daily life, without a contentious focus. Many posts do not rely on physical copresence. About half of the photos show gatherings of people (47% of 44,493 geocoded and labeled posts), the other half are rituals without physical copresence, including selfies, inspirational quotes, or first-person perspectives. About half of the photos (53%) do not have a contentious focus. Only 18% of posts with physical copresence have a contentious focus. In short, most posts did not have a contentious focus; instead, people typically engage with #blacklivesmatter by affirming the movement in relation to aspects of everyday life.

Description of Type 1: Direct Action (Contentious Focus and Physical Copresence). Social movements are often analyzed as a series of contentious performances (Tilly 2008). Collins (2001:31) ascribes central importance to these types of contentious actions, arguing that periodic confrontations with targets or enemies are an effective way to infuse movements with renewed emotional energy. During such events, the configuration of ritual ingredients generates strong emotional energy: many people share physical copresence, and symbols that emphasize group boundaries abound, such as signs or particular clothing styles. The mood at direct actions can be relaxed or tense, with slogans and singing stimulating high levels of rhythmic entrainment.

On social media, reports bear witness from inside direct actions such as rallies, marches, or sit-ins (“die-ins”). These are eyewitness accounts of a protest event, framing symbolic elements at the center of shared attention, while signaling a commitment to contentious oppositional identities. For instance, photos show groups of friends in the middle of a rally, or stand-offs with law enforcement. The emotional intensity of the moment depicted may spill over to other people on social media, who were not present physically but bear secondhand witness to the symbols depicted. Followers may be inspired to undertake action themselves in other locations, while their reactions in the form of likes and comments may help to galvanize the agency of the original poster. Typically, photos of such rituals depict crowds, signs and banners, and police.

This type of direct-action ritual is concentrated in geographical locations, which serve as the movement arenas. The National Mall in Washington D.C. is arguably the prime such arena in the United States. Not only are key sites of government power concentrated here, its meaning as a place for direct actions has developed over time as a result of key events in the history of the nation. Consider, for example, October 10, 2015, when people travelled from far and wide to the capital for the twentieth anniversary of the Million Man March. For the crowd shown in figure 1, the focus of attention is the speaker currently on stage, displayed on large screens. The Capitol is another important focal point, seen in the background of the photo, while serving as the symbolic backdrop for the event itself. The image’s low color saturation, approximating black and white, echoes earlier events that have occurred in this same place. Such symbols and objects are imbued with symbolism specific to the location. These arenas serve as collective symbols, both conveying meaning and being charged with meaning during the event, and its representation online.

Description of Type 2: Everyday Solidarities (Affirmative Focus and Physical Copresence). The public enactment of everyday experiences constitutes categorical and reputational identities (Collins 2004: 273–75; cf. Goffman 1959). Social media users enact collective identities together when they attach the movement’s symbols (such as the #blacklivesmatter hashtag) to everyday activities like attending an organizational meeting, sharing dinner conversation, or being at a party or concert. Such everyday enactments are not spectacular and may not reach traditional news outlets, but they are important in reaffirming commitment at the grassroots level. Posing for a picture during a social occasion and publicly posting it online reaffirms shared commitments and group boundaries. By indexing these images and messages with the #blacklivesmatter hashtag, users create “personalized paths to political engagement” that allow them to relate to “common problems” (Bennett and Segerberg 2013: 56). They set an emotional tone and invite followers to witness and interact. In doing so, group boundaries are demarcated, solidifying communities that are brought to life by these Instagram posts.

Sometimes such photos are taken at a natural moment; more often they involve a degree of posing for the photograph, and as such, they follow a general set of rules or stereotyped formalities (Collins 2004: 49). Formal rituals of this type are more susceptible to failure (Collins 2004: 51), but failed rituals are seldom posted on Instagram. People orchestrate ritual behavior such as the

distance between themselves and the one taking the picture, smiling, striking a pose, and looking into the camera. These behaviors suggest an awareness of audiences not present at the moment in which the photo is taken: followers on social media viewing the image. It is common for people posing for a photo to display a shared mood and emotional state. This display of consensus may carry over to others on Instagram. Typically, photos of these rituals depict two or more people, sharing food, and having parties.

Social gatherings take place in specific locations, although affirmative rituals are not as geographically concentrated as contentious actions. Affirmative rituals are more likely to occur in certain environments because we are prone to seeking out interactions, and by extension locations, where we experienced positive emotional energy (Collins 2004). Some locations cater to social gatherings, such as concert venues and restaurants. Other locations are the home of particular communities, like churches. Clusters of these locations in particular neighborhoods form a movement's milieu. Affirmative social movement experiences are deeply interwoven with milieu, as people share their daily life with others in these places.

Consider, for instance, the concert shown in figure 1. On August 18, 2015, Janelle Monáe performed at the Concord Music Hall in Chicago at 2047 N. Milwaukee Avenue, on the Wondaland Records Eephus tour, with a show that explicitly affirms the movement:

Wondaland's protest song is simple and powerful: a recitation of the names of men and women killed by police to rolling and thrumming drumbeats, followed by urgent exhortations to say their names. Monáe yelling Sandra Bland's name took on a particular poignancy, as the artists had just led a rally alongside Bland's mother at The Bean earlier that day, a ritual Wondaland is carrying out in each city they visit. (Gwee 2015: n.p.)

Posting an image about this show on Instagram shares an affirmation of the movement, inviting others to relate to that experience. The event itself relies on a milieu (e.g. venues available and chosen) that makes the gathering accessible. Reports of the event on Instagram allow others who were not present to subsequently relate to the experience.

Description of Type 3: Conflict Memes (Contentious Focus and No Physical Copresence). Memes, a common sort of post on social media, adopt text and icons to invoke and construct symbolic meaning. Their recognizable aesthetic suggests they are created in awareness of others and "circulated, imitated, and transformed" by others (Shifman 2014: 341). Memes reify ideas into condensed symbols that are easily distributed on Instagram in the form of cultural icons or hashtags. For example, the quote shown in figure 1c presents a particular framing of the movement. These posts do not rely on physical copresence, but do effectively communicate a focus and group boundaries by marking symbols of social relationships and addressing standards of morality (Collins 2004: 48). As individual commentaries and observations, memes allow for individual expressiveness and, as such, capture well what Lance Bennett and Alexandra Segerberg (2012: 743) refer to as personal action frames: individualized and easily shareable (political) orientations. By using and recombining ideas in a particular movement at large, these posts direct the attention of viewers and suggest a mood by providing an actionable commentary to which others can relate. Instagram posts of this type invoke symbols of social relations (Collins 2004: 48) that are celebrated or charged through social media activities like reposting, liking, or commenting on them. In doing so they rely on the symbolism with which the icon is charged, to give the present movement a place in relation to specific meaningful histories. Typically, these posts depict creative texts, iconic images, or inspirational quotes. Examples include a quote from Assata Shakur or Malcolm X, a portrait of Sandra Bland, or a provocative statement about a presidential candidate.

Anyone can use memes to engage with the movement without having to rely on physical presence. As a result, this type of ritual is geographically dispersed, while more frequent in rural and suburban areas in comparison to the other ritual types. Far away or isolated from hotspots, people can use social media to engage others with information, symbolism, and interpretations of the world. For instance, an activist in rural Pennsylvania without access to major arenas or milieu can use Instagram to connect with likeminded individuals in the lively milieu of San Francisco or New York City.

Description of Type 4: Iconic Lifestyle (Affirmative Focus and No Physical Copresence). Many posts on Instagram are reports of individual activities. Selfies and images of coffee art and pets are ubiquitous, perhaps even generation-defining art forms (Gibbs, Meese, Arnold, Nansen, and Carter 2015; Souza et al. 2015). We think of these as “lifestyle” reports that invite others to see daily life from a poster’s perspective, commonly emphasized by the use of careful compositions and close-ups. Instagram posts using a first-person perspective invite followers to interact. The act of taking and posting such photographs can be understood as an affirmation of identity, which is communicated to others (Goffman 1959). For example, figure 1d shows a work of art with political connotations. Its online representation relates it to #blacklivesmatter, serving as an invitation for further interactions with the work as a focal point.

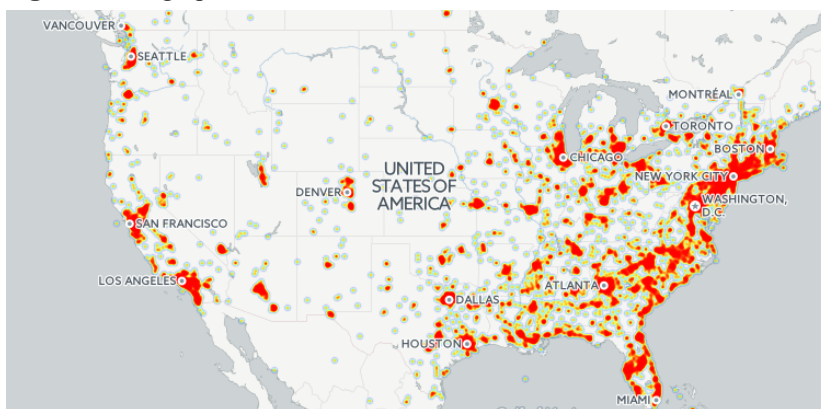
In social movements, membership is reaffirmed by attaching the movement’s symbols to the everyday activities undertaken alone and then shared with others online. In contrast to the embodied social gatherings of what we called everyday solidarities, this type of ritual without physical copresence represents an individualized affirmation of movement identities. These rituals fuel social movements by extending frames beyond individual perspectives, generating emotional energy not by relying on outright contention but by politicizing personal experiences (Hanisch 2000). In subsequent online interactions, others can relate and attune to these personal experiences. While these affirmations do not require physical copresence, the sharing of such posts presents a view of, and commentary upon, everyday life to others, constituting a communicative act. For example, using the hashtag #blacklivesmatter to report a visit to a local barbershop, salon, or stylist conveys a set of politically relevant meanings and histories. These relatable everyday experiences allow others to attune to the movement when undertaking similar activities. Other examples include book recommendations, paintings, or songs; typical photo elements are self-portraits, food, artwork, and pets.

These individualized affirmative interactions occur in places where people associate personal experiences with the movement. This type of ritual is less geographically concentrated than contentious interactions or social gatherings, as an occasion to post can be found anywhere someone lives or visits. Still, it is commonplace to share outings to galleries, concert venues, or restaurants. These tend to be concentrated in particular locations with the cultural infrastructure that facilitates lifestyle experiences.

Geography of Interaction Ritual Types

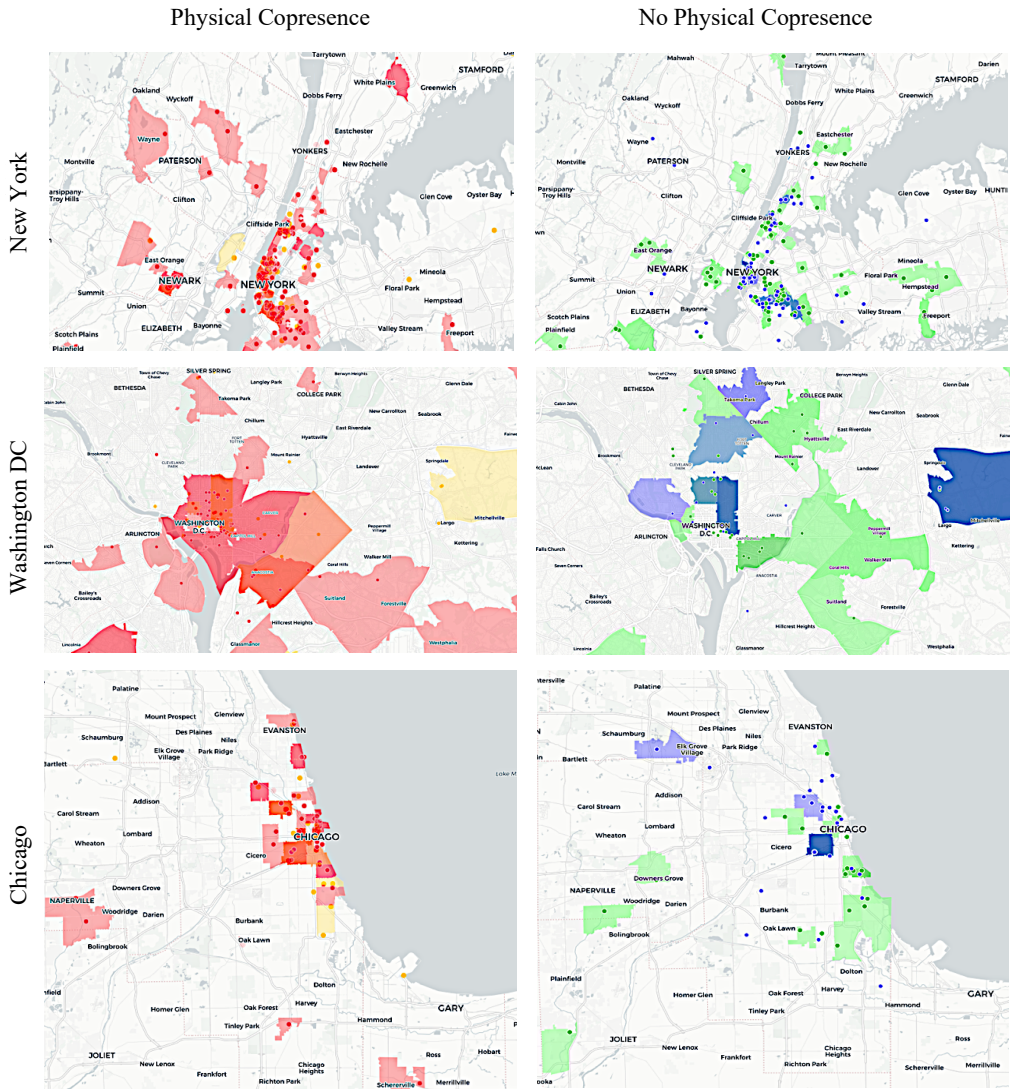
While people all over the U.S. use #blacklivesmatter to share emotions, there is a distinct geography to how they do so. Generally, we find activity concentrates in specific urban areas. Activity outside those cities is more dispersed. Some relatively isolated activity exists in rural areas. Some locations are hotspots where numerous posts originate (figure 2). The various kinds of interaction

Figure 2. Geographic Pattern in the U.S., June 15, 2015 to March 15, 2016



Heat map of geotagged images between dates. Total number of posts aggregated: 91,818 (8.1% of all posts). (Map created with carto.com: ©OpenStreetMap contributors ©CARTO).

Figure 3. Geographic Concentration of Ritual Types



Top row: New York City (type 1:269 users, type 2:68, type 3:215, type 4:55); Second row: Washington DC (type 1:203 users, type 2:27, type 3:14, type 4:22), bottom row: Chicago (type 1:233 users, type 2:30, type 3:13, type 4:15). Legend: Red (type 1: direct action), Yellow (type 2: solidarity), Green (type 3: conflict memes), Blue (type 4: iconic lifestyle). Areas are colored by frequency (shown as points), with color overlap. (Maps created with carto.com: ©OpenStreetMap contributors ©CARTO).

rituals each have distinct geographies. Differentiation by type shows concentration of specific activity in cities such as Los Angeles, New York, Chicago, and Washington DC. This pattern is illustrated in a comparison of the four most active cities, as depicted in figure 3.

This overall pattern, i.e., the concentration of various types of activity in particular locations, is refracted within cities. Contentious mass gatherings take place almost exclusively in city centers, with affirmative social and iconic lifestyle rituals situated in a broader variety of milieus. Further away from downtown areas, in suburbs, small towns, and rural areas, conflict memes are much more common than other rituals.

On the neighborhood level, various types of activity are concentrated in specific areas. For example, in Harlem, protest marches were organized around 125th Street, while the location also provided a rich cultural infrastructure for other social gatherings. There are other neighbor-

Table 2. Concentration by Postal Code of IR Types*

<i>Neighborhood and Function</i>	<i>Percent of all users</i>	<i>No. of posts type 1</i>	<i>No. of posts type 2</i>	<i>No. of posts type 3</i>	<i>No. of posts type 4</i>
Mt. Vernon Square, DC (movement arena)	1.96	40	304	31	147
Downtown, WH, DC (movement arena)	1.57	13	218	33	134
Tribeca, NYC (movement arena)	1.50	19	130	100	191
Pilsen, Chicago (movement arena)	1.37	27	161	57	125
Chinatown, Los Angeles (movement arena)	1.20	11	86	70	137
East Village, NYC (movement arena)	0.97	23	97	27	65
Downtown, Oakland (movement arena)	0.97	9	109	32	84
Mall, DC (movement arena)	0.86	22	152	10	61
Morningside Heights, NYC (movement milieu)	0.85	3	104	20	62
Near North, Minneapolis (movement arena)	0.78	40	243	9	42
Old Town, Baltimore (movement arena)	0.71	8	63	17	78
CBD, Seattle (movement arena)	0.71	29	119	10	26
Clinton, NYC (movement arena)	0.70	20	67	24	44
Downtown, Chicago (movement arena)	0.65	32	106	7	33
Inner Mission, San Francisco (movement milieu)	0.63	6	96	25	40
Chelsea, NYC (movement milieu)	0.60	5	70	23	44
Van Ness, San Francisco (movement arena)	0.57	21	124	22	40
Downtown, Atlanta (movement arena)	0.57	2	40	32	120
South of Market, San Francisco (movement milieu)	0.55	4	70	20	55
Downtown Brooklyn, NYC (movement milieu)	0.54	6	45	9	45

* Type 1: direct action; type 2: solidarity; type 3: conflict memes; type 4: iconic lifestyle

hoods that serve as particularly active arenas and milieus. Table 2 shows the proportion of the user base and ritual type in the twenty most active neighborhoods. The ratios allow for a comparison of concentrations of ritual types in particular neighborhoods.

Some neighborhoods are hotspots for people posting #blacklivesmatter. Correcting for the number of people posting from a location, contentious rituals are more geographically concentrated than the affirmative everyday solidarity and iconic lifestyle posts. Rituals that do not rely on physical copresence are more dispersed than those that do.

In short, direct action rituals are concentrated in specific arenas, affirmative rituals occur primarily in specific milieus, while posts that do not require physical copresence allow people to engage with the movement in isolation from such arenas and milieus.

DISCUSSION AND CONCLUSION

The Movement for Black Lives provides a powerful demonstration of how social media are used to share outrage and hope (Castells 2012). To understand how emotion is mediated through social media, we turned to interaction ritual theory, reasoning that online interactions are part of how a social movement develops and, in essence, contain the same ingredients as any other ritual (Collins 2001, 2004). However, the digitally mediated nature of these interactions suggests different ingredient compositions. We note two distinctions: whether the ritual includes physical assembly, and whether there is a contentious or affirmative shared focus of attention. We find, in short, that digitally networked movements rely on disembodied as well as positive rituals more than the literature suggests. Here we discuss and interpret our findings about mediated emotions in light of the development of digitally networked movements.

The first important finding is that a substantial amount of mediated rituals—and the vast majority in our sample of Instagram posts indexed with #blacklivesmatter—do not depend on physical copresence. Even if easily misconstrued as frivolous or superficial, selfies and memes

are ubiquitous on social media. As communicative acts, these posts employ aesthetics, symbols, texts, or other highly personalized content that draws attention. This shared focus of attention can generate commitment to a cause. They are an invitation for others, who are not physically present, to interact and relate the frame to similar experiences. As such, this type of ritual facilitates the development of digitally networked movements by allowing dispersed audiences to engage with a social movement without the necessity of physical presence.

Memes are typically designed to be recognizable and easy to share. Often intended as humorous or provocative, in the case of social movements memes are often explicitly moral and contentious. Such conflict memes serve as what James Jasper and Jane Poulsen (1995: 498) call condensing symbols, “verbal or visual images that neatly capture—both cognitively and emotionally—a range of meanings and convey a frame, master frame, or theme”; they point out that activists use symbols “to recruit members, especially strangers.” Mediation of such symbols has the potential of expanding conscience constituencies (Collins 2001: 30). Memes charged with high symbolic value are ideal for this purpose, making them effective action frames (Bennett and Segerberg 2012). Because memes are highly recognizable, they are particularly effective at signifying the symbols of a movement, which are charged with emotional energy, and as such, function to reaffirm commitment to likeminded observers (Gal, Shifman, and Kampf 2016; cf. Beraldo 2017).

However, given the (semi-)public nature of social media, it is not immediately apparent who those likeminded observers are. Collins suggests that interaction rituals establish group boundaries between those who are present and those who are not. That social media allow for interactions without physical presence calls into question how group boundaries, an essential ingredient of interaction rituals in Collins’s understanding, are established. This is closely related to the concept of context collapse, as “social media collapse diverse social contexts into one, making it difficult for people to engage in the complex negotiations needed to vary identity presentation, manage impressions, and save face” (boyd 2014:123; cf. Meyrowitz 1987).

As our analysis shows, online mediation complicates boundaries between different social contexts in the sense that it is not straightforward where the interaction ritual originates and achieves its effects. Collins addresses such circulation in terms of first and higher order rituals (2004: 214). At the first-order level, a photo documents a ritual, showing people engaged in interaction and providing an insider perspective of that ritual *in situ*. There is a clear boundary between those who are present and those who are not. At higher-order levels, reporting that ritual by posting a photo on social media is a communicative act that addresses another audience, involving a different ensemble of insiders and outsiders. As a result, group boundaries become ambiguous, “only loosely disciplined by the imagined audience” (Collins 2004: 214).

In addition to the individuals depicted, following, tagged, or mentioned, anyone encountering this second-order ritual while browsing Instagram might feel addressed as a public, be they supporters, opponents, or sociologists. These disembodied interactions can form more than merely imagined audiences, establishing new communities and strong group boundaries (Maloney 2013; Rheingold 2000). Whether depicting people engaging in rituals physically present or not, the post becomes the focus of attention in itself, inviting subsequent online interactions. The audiences of those subsequent interactions have tremendous growth potential in increasingly wider networks (Borge-Holthoefer, Baños, González-Bailón, and Moreno 2013; Guadagno, Rempala, Murphy, and Okdie 2013; Sharma 2013). The ambiguous group boundaries of these higher-order interactions allow people to feel affinity as an insider, even if not originally present during the depicted ritual. Collins suggests that disembodied rituals are unlikely to arouse sufficient emotional energy to maintain social movements (Collins 2004: 62). Even if their engagement is not as intense, there are very many of them, and these “peripheral participants are critical in increasing the reach of protest messages and generating online content at levels that are comparable to core participants” (Barberá, Wang, Bonneau, Jost, Nagler, Tucker, and González-Bailón 2015: 1). Others have found that entrainment online stimulates persistent subsequent engagement (DiMaggio, Bernier, Hockscher, and Mimno 2017). Further research could attempt to measure entrainment for different orders of ritual, for instance whether embodied rituals

generate more persistent engagement with a movement. Based on our current findings, we propose that the sheer number of online rituals without bodily copresence makes up for what they lack in immediate intensity.

A second important finding is that contentious gatherings by no means provide the sole focus of attention in mediated interaction rituals. A substantial number of posts—again, the vast majority in our sample—are not contentious, but instead affirm everyday movement experiences. The acts of sharing, viewing, and interacting online are interaction rituals just as are rallies that occur on the ground. Such everyday solidarities are essential to social movements, and the unique window into daily life provided by social media underscores this powerfully (Jackson 2018). While contentious performances may be important for generating intense emotions, these are only possible if movement supporters have accumulated prior emotional energy in supportive and protective environments (Collins 2000; Scott 1992; Squires 2002; Taylor and Whittier 1992). Such affirmative experiences embolden activists to take stances and undertake actions by framing individual experiences in light of collective emotions.

Our findings confirm that partaking in the seemingly mundane activities of everyday life helps to generate the energy and commitment necessary for sustaining digitally networked movements. Collins notes how mass gatherings are crucial to a movement's dynamics, as these are the rituals in which the intense emotional energy is generated that is necessary for sustaining engagement among participants (2001). In terms of Collins's argument, these are the rituals during which people gather the energy necessary for engaging in large contentious gatherings that demand bodily copresence. What might be easily disregarded as mundane is made visible on social media: people painting signs together before a street rally, groups attending a concert, or friends sharing conversation over dinner. Based on our findings, we suggest that witnessing or interacting with such posts helps to gather the energy necessary for undertaking the intense rituals of contentious direct action. Inspired by research of contentious actions in specific locations (Williamson, Trump, and Einstein 2018), further analysis could show in more detail how posting or viewing noncontentious media online corresponds with direct action frequencies in specific locations.

A third important finding is that different kinds of places accommodate different kinds of mediated interaction rituals. In other words, the different types of mediated interaction ritual bear distinct geographies. The findings confirm our expectation that interaction rituals that rely on physical copresence occur more often in the arenas and milieus of the movement (Nicholls and Uitermark 2017). Contentious direct actions take place in arenas, visible places highly charged with symbolic value. Other locations provide the infrastructure for less contentious social events. Certain milieus, like Harlem, are steeped in history and harbor venues of significance to the movement (Watson 1995). We think that for the development of digitally networked movements, the increased salience of interconnected milieus increases the importance of the ability to "operate effectively in multiple milieus among widely differing audiences [...] to convey unfamiliar issues to distant audiences in terms that are comprehensible, sympathetic, and motivating" (Nepstad and Bob 2006: 4). Sharing relatable experiences and activities from everyday life on social media is ideal for that purpose. Rituals that do not require people to convene, memes especially, rely less on symbolic or material infrastructures. Our findings show this type of ritual is more geographically dispersed throughout suburbs and other places outside of the major cities and coastal states. In the absence of nearby venues to conveniently meet, social media offer spaces to socialize with others of like mind. In other words, while proximity remains a key factor for mediated emotions, we suggest that social movements benefit from rituals that do not require physical copresence, because these allow for engaging with others independent of pre-existing activist arenas and milieus.

While the Movement for Black Lives is unique in many ways, we expect that these three findings are to some degree generalizable to other digitally networked movements. The use of social media in general and Instagram specifically allows for the circulation of highly personalized frames in personal networks. Other recent movements such as #metoo and March for Our Lives allow a wide range of people to recognize such frames as meaningful and adapt it to make sense

of personal experiences (Benford and Snow 2000; Melucci 1996). Digital networking has become, and will likely remain, intricately intertwined with all stages of social movement development. How interactions are mediated may benefit social movements in years to come.

In conclusion, mediated emotions have contributed to the development of the Movement for Black Lives, connecting the experiences of millions of people nation- and worldwide. Randall Collins's theory of interaction ritual chains provides a foundational understanding for the emotional dynamics involved in social movements. We extend that theory to consider the mediation of interactions that take place on social media, reflecting on various configurations of the ritual ingredients. We show that contentious mass gatherings, as well as the experiences of everyday life, generate distinctly territorialized online engagement. This helps scholars to understand the remarkable and sustained vitality of the Movement for Black Lives online, with people across the nation sharing emotions and experiences in the struggles for social and racial justice.

ENDNOTES

¹ From among a wide variety of keywords, some typical examples with low AUC-ROC scores include more abstract keywords such as: "travel," "business," "attractive," and "safety."

² Note that Instagram has since adopted Facebook's terms and conditions of API use in 2018 (Instagram 2018).

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