Investigating Participatory Dynamics Through Social Media Using a Multideterminant ‘‘Frame’’ Approach: The Case of Climategate on YouTube

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This paper offers a framework for examining the relationship between social, instrumental, and technological determinants of participation through social media (Dahlberg, 2004) using a discursive approach based in the concepts of frames and framing (Goffman, 1974; Snow & Benford, 1992). We apply our multideterminant framework to investigate participatory dynamics on YouTube in the case of climategate. Our interpretive analysis of videos and comments shows how public responses to climategate were scripted around 3 dominant master frames, reinforced by calls to collective action and media form. Our multideterminant framework makes a contribution to the debate over the transformative potential of social media by providing a method to assess the relative value of social media in response to specific social problems.

Key words: participation, social media, climate change, YouTube, frames, social problems.

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In November 2009, University of East Anglia climate scientist’s e-mails were hacked and published on the Internet without the scientists consent. This event was named climategate, and it caused not only wide scale media attention and public reactions, but it also contributed to the polarization of opinions on anthropogenic climate change as a relatively widely accepted scientific issue. This event raised many questions and doubts about climate change and anthropogenic global warming (AGW), which surfaced across mass media and online media outlets. In social media, these questions have triggered debates that are still discussed years after the 2009 event.

Researchers have increasingly investigated the role of social media in shaping public participation and activism around such polarizing events (Antony & Thomas, 2010; Askanius & Uldam, 2011; Nah, Veenstra, & Shah, 2006; Toepfl, 2011; Vergani & Zuev, 2011). Scholars generally assume that social media have the potential to transform the way in which the general public engages social and political issues. However, the transformative potential of social media is still a matter of debate. A body of empirical evidence suggests that, on the one hand, participatory dynamics of social media fall short of
making a real difference in addressing contentious social and political issues (Fenton & Barassi, 2011; van Zoonen, Vis & Mihelj, 2011). On the other hand, emerging research shows that social media may be used to help marginalized people challenge a political elite (Vergani & Zuev, 2011) and mobilize collective action towards addressing social problems (Meek, 2011; Rojas & Puig-i-abril, 2009).

We argue that differences in the transformation debate can be attributed to the determination a research study favors. Dahlberg (2004) argued that there are three dominant determinations that researchers generally adopt in research of the Internet: social, instrumental, or technological. Scholars tend to favor a single determination, which leads to mono-causal explanations between determinants and outcomes (Dahlberg, 2004). Depending on which determination a researcher adopts, there is significant variation in what a study might conclude about the transformation potential of social media. We argue that single determinant research tends to reduce the complexity of social media dynamics, enabling the continued polarization of the transformation debate.

The aim of this study is to offer an alternative approach, which shifts the focus from questions about transformation, to more contextualized accounts of the relative value of social media in response to specific social problems. We offer a multideterminant framework (Dahlberg, 2004) which focuses on the mutual constitution of social, instrumental, and technological determinants using a discursive, meaning-centered approach based in the concepts of frames and framing (Goffman, 1974; Snow & Benford, 1992; Snow, 2004). Our frame approach conceptualizes participatory dynamics through social media as an interrelationship of 1) socially embedded master frames, 2) instrumental positioning through collective action framing, and 3) constitutive media forms. We apply our multideterminant framework to investigate participatory dynamics on YouTube in the case of climategate.

The results of our interpretive analysis show how the public responded to climategate on YouTube as a socially and politically embedded event, through three stable master frames: political scam, media frenzy, and scientific fraud. These master frames changed very little over time, providing users well-known scripts to make sense of climategate. Collective action positions reinforced these scripts through targets of blame and calls to action that mirrored the scripts of the master frames. The YouTube media forms we examined were interpretive anchors that expanded the scripts of the master frames and solidified existing positions.

Multideterminant methods (Dahlberg, 2004) advance empirical research of social media by revealing the unique nature of participation through social media in relationship to specific social problems. Understanding the nature of this participation is important as social media is increasingly studied and used during socially significant moments, such as prior to political uprisings or directly after social disruptions (Attia, Aziz, Friedman, & Elhussheiny, 2011; Burns & Eltham, 2009; Dalacoura, 2012; Sayed, 2012). Our multideterminant framework also contributes to the transformation debate by providing an assessment of the relative value of social media in response to specific social problems.

Our paper is organized as follows. First, we discuss instrumental, technological, and social determinants in research on the role of social media in activism and participation. Following this, we articulate our multideterminant frame approach and pose research questions. Next, we describe the YouTube data we collected and our interpretive methods of analysis in-depth. Finally, we present the results of our analysis and conclude by discussing the implications of our results.

Determinations of Activism and Political Participation Through Social Media
Social media have played a central role in facilitating political participation and activism (Askanius & Uldam, 2011; Edgerly, et al., 2009; Toepfli, 2011; van Zoonen et al., 2011; Vergani & Zuev, 2011). Scholars exploring these participatory dynamics generally assume that social media have the potential to transform the way in which the general public engages social and political issues. This potential for
transformation is made possible, in part, through features of social media such as user-generated content and two-way exchanges (O’Reily, 2005), which facilitate “bottom up” or “informal” engagement at a new scale and speed. Research investigating this transformation potential is concerned with critically assessing if these social media dynamics actually make a difference in people’s ability to participate and organize.

Currently, the degree of transformation enabled by social media is debated. A body of empirical evidence suggests that, on the one hand, participatory dynamics of social media fall short of making a real difference in addressing contentious social and political issues. For example, political interaction online has been shown to resemble shouting matches rather than actual deliberation or dialogue (van Zoonen et al., 2011). In a case study of social media use for activism, Fenton & Barassi (2011) found that social media promoted a self-centered participation, which was a threat to the groups involved, rather than an opportunity to create change. On the other hand, emerging research shows that social media may be used to help marginalized people challenge a political elite (Vergani & Zuev, 2011) and mobilize collective action towards addressing social problems (Meek, 2011; Rojas & Puig-i-abril, 2009). In a study of anti-FARC groups in Columbia, Neumayer & Raffl (2008) found that social software in developing countries, where there is a large social gap, fosters grassroots activism and political inclusion.

We argue that differences in this transformation debate can be attributed to the determination a research study favors. Dahlberg (2004) argued that there are three dominant determinations that researchers generally adopt: social, instrumental, or technological. Research favoring a social determination would assume that sociopolitical context determines the potential of social media to make a difference. Research favoring an instrumental determination would assume that motivations and goals of users determine the potential of social media to make a difference. Finally, research favoring a technological determination would assume that features unique to the media determine the potential of the media to make a difference. Because researchers tend to favor one of these determinations1 (Dahlberg (2004), we argue that this tendency may reduce the complexity of participatory dynamics through social media, enabling the continued polarization of the transformation debate. In the next sections, we show how activism and political participation research, favoring different determinations, lead to different conclusions about the transformative potential of social media.

Social Determination
Research favoring a social determination assumes that participation through social media is best explained as an outcome of social/political context (Burns & Eltham, 2009; Dalacoura, 2012; Fuchs, 2009; Iskander, 2011; Pauwels & Hellriegel, 2009; Toepfl, 2011; Van Dijck, 2009; Youmans & York, 2012). Using a social determination, Fuchs (2009) analyzed the Internet as embedded in the antagonisms of a capitalist society. Following this determination, social media platforms are ideological, wherein “Web 2.0 can result in the illusionary impression that citizens today can make a difference, whereas in reality they cannot influence policies and live in a world that is dominated by corporate interests and corporate control” (Fuchs, 2009, p. 83). Social media are inextricably tied to the existing capitalist society (Fuchs, 2009).

A social determination was also used to explain the role of social media in recent political uprisings. For example, Iskander (2011) investigated the role of social media in political uprisings in Egypt. The study showed how social media was embedded in an ongoing political struggle. “The use of social media represents a phase in the development of Egyptian political and social activism that is firmly embedded in a long-term process and ebb and flow of opposition organization on the one hand, and the response to it on the part of the autocratic governmental system on the other” (Iskander 2011, p. 1228). Although social media provided an essential sphere for dialogue during the uprisings, this was enabled by the history of the existing political context.
Participation on YouTube has also been examined as an outcome of social determinates. Pauwels and Hellriegel (2009) examined the strategic infrastructure and gatekeeping activities of YouTube owners and the practices of the YouTube user. They used a “hybrid media analysis model” and found that uses of the media were largely determined by strategic design. Pauwels and Hellriegel (2009) explained, “YouTube™ actively participates in constructing the image of users being in control, or at least on an equal footing with the platform producers” (p. 66). However, tactical uses of the media were only “mild forms of resistance” to the embedded cultural values and norms in YouTube’s overall structure.

Instrumental Determination
Research favoring an instrumental determination assumes that participation through social media is best explained as an outcome of the motivations, goals, and interests of the user (Ancu & Cozma, 2009; Gustafsson, 2010; Hanson, Haradakis, Cunningham, Sharma, & Ponder, 2010; Leung, 2009; Park, Kee, & Valenzuela, 2009; Sayed, 2012; Yang, Hsu, & Tan, 2010). Research examining the uses and gratifications of media assume that people are “purposive, goal directed, and motivated in their use of media” (Haridakis & Whitmore, 2006, p. 767). This research investigates which individual, social, and psychological background characteristics and motives explain the media people select and use.

An instrumental determination has also explained the role of social media in recent political uprisings. For example, Sayed (2012) investigated the role of social media in political uprisings in Egypt. The study found that young activist’s utilization of social networking sites for protest was driven by guidance and surveillance needs and correlated with offline participation. Sayed (2012) argued that gauging the young activist’s motivations for utilizing social media outlets situates this media in the “spectrum of political engagement” (p. 273). Although social media played an important role in mobilizing protest, outcomes of the protest were driven by the offline needs of the activists.

Participation on YouTube has also been examined as an outcome of instrumental determinates. Yang et al. (2010) investigated factors contributing to users’ intentions to share videos on YouTube. They employ and found support for a modified version of the technology acceptance model (TAM), which found that users share video because of perceived ease of use and positive attitudes. They also found significant difference between male and female users and intentions to share video. The use of YouTube for participation depended on the characteristics of the user and the factors that motivated users.

Technological Determination
Research favoring a technological determination assumes that participation through social media is best explained as an outcome of the media’s form or features (Dimitrova, Shehata, Stromback, & Nord, 2011; Dylko 2011; Dylko & McClusky, 2012; Enjolras, Steen-Johnsen, & Wollebaek, 2012; Gil de Zuniga, Puig-l-Abril, & Rojas, 2009). Poster (2004) examined how patterns of consumer culture were impacted by digital media, arguing that “Digital media radically transform both the cultural object and the subject position of the consumer” (p. 417). In his approach, digital technological features actually produced the users.

A technological determination has also explained the role of social media in recent political uprisings. Van Niekerk, Pillay, and Maharaj (2011) examined the role of social media in the Tunisian and Egyptian protests. They argued that the uprisings were a form of “social information warfare” because of the significant effect of social media and communication technologies on the flow of information. Information and related technologies were an offensive weapon and target. Their information warfare model included a cognitive aspect, however the “physical (hardware)” and “information (software,
logical network connections, policies)” determined much of the resulting dynamics of political unrest (Van Niekerk, Pillay, & Maharaj, 2011, p. 1407).

Participation on YouTube has also been theorized as an outcome of technological determinants. Chadwick (2012) examined the effect of Web 2.0 technology on political participation and argued that, for example, online environments such as YouTube offer a “granular” sociotechnical environment. Granularity explains how individual participation occurs on a much smaller scale in online environments, as citizens can do things that are simple and easy (ie, comment on political speeches), but that “complexity emerges from the aggregation of many simple contributions” (p. 19). He argues that the granularity of Web 2.0 “arguably form the social roots of a new phase in the evolution of political participation, collective action, and democratic innovation” (p. 5). Features of the media redefine participatory outcomes.

In summary, research favoring a social determination generally concludes that social media will fall short of transformation, or that transformation may be possible only if the sociopolitical context conditions this transformation. Research favoring an instrumental determinant generally concludes that users will seek to participate through social media when their needs and motives are met, but this does not necessarily add up to a transformation. Finally, research favoring a technological determination generally concludes that social media does enable new kinds of transformative participation. Depending on which determination a researcher favors, there is significant variation in the findings about transformation potential.

We argue that single determinant approaches reduce the complexity of participatory dynamics through social media, enabling the continued polarization of the transformation debate. Rather, we seek to shift the focus from conclusions about transformation to a contextualized account that shows the relative value of social media in relationship to specific social problems. In the next section, we articulate our framework for multideterminant research, which examines participatory dynamics through social media as the complex interplay between social, instrumental, and technological determinants (Dahlberg, 2004).

A Multideterminant “Frame” Approach

Our framework focuses on the mutual constitution of determinants using a discursive, meaning-centered approach, based on the concepts of frames and framing. Frame research examines ideational factors and interpretive processes associated with making sense of the world. A frame, drawing on the work of Goffman (1974), is defined as a “schemata of interpretation” that enables individuals to “locate, perceive, identify, and label” occurrences within their life space and the world at large (Snow, Rochford, Worden, & Benford, 1986, p. 464). Frames are distinctions that have been made by people, defining what is important and meaningful.

Research on social movement frames has documented the relationship between individual actions, broader contexts of meaning, and tools used to achieve collective action (Gamson & Modigliani, 1989; Snow et al., 1986; Snow & Benford, 1992; Snow 2004), making frame approaches in social movement research ideal for developing a multideterminant research approach. Our multideterminant approach draws on frame research to specify a priori what “counts” as social, instrumental, and technological determinants. However, the exact relationship between these three determinants is a matter of empirical investigation.

Social Determination: Master Frames

In order to account for sociopolitical contexts that shape uses and features of social media, we conceptualize participatory dynamics as socially embedded in master frames. A master frame is an
organized way of punctuating experiences of the world (Snow & Benford, 1992). These frames exceed any single individual because their meanings are tied to events and develop similarly across different types of groups. For example, in social movement research, master frames are the overarching schemata of interpretation that have been shown to guide large swathes of social movement activity as integrative, organizing devices (Snow, 2004). Gerhards and Rucht (1992) showed how very different master frames worked as an integrative mechanism across different groups and movements. However, studies examining how master frames organize social movement activity (e.g. Snow, 2004) have also shown the importance of context specific meanings of frames as they emerge within groups, cultures, or situations. Master frames can change as groups (re)constitute the target of their activity in light of new events occurring in the world (Snow, 2004). We attend to master frames to learn how individual experience is socially situated and collectively organized. Participatory dynamics through social media are sociopolitically embedded in master frames.

**Instrumental Determination: Collective Action Positions**

In order to account for users deployment of social media towards some end goal, we conceptualize participatory dynamics as forming positions through **collective action framing**. Collective action framing is an “active, process-derived phenomenon that implies agency and contention at the level of reality construction” (Snow & Benford, 1992, p. 136). Specifically, collective action framing describes a process of forming positions on an issue of concern through different discourses that call others to action. For example, in social movement research, collective action framing has been shown to garner support for causes and demobilize antagonists (Snow & Benford, 1992). We attend to collective action framing to learn how agents create positions in response to an issue and how these positions are used to call others to action. Action is goal-oriented, but shifts from an individual to a collective focus as different users call forth each other to act. Collective action occurs as the public become “audiences” to each other through the use of social media.

**Technological Determinant: Media Form**

In order to account for how features of social media affect user end goals and sociopolitical contexts, we conceptualize participatory dynamics as constituted by **media forms**. Media forms are the affordances of the media, or the activity the features of the media permit (Dylko & McCluskey, 2012; Enjolras et al., 2012). We use form(s) of media to explain how different types of media carry different ways of shaping interpretations (Gamson & Modigliani, 1989). Features of social media participate in enabling or constraining certain types of frames and framing. For example, research on frames in the media has shown how different forms of media carry different “media packages,” permitting certain sorts of frames (Gamson & Modigliani, 1989). In a longitudinal study of media discourse and public opinion of nuclear power, Gamson & Modigliani (1989) found that frames promoted by different forms of traditional media were significant to the public response on nuclear power. We apply the concept of media packages to attend to social media form, and in particular the unique Web 2.0 features of the media. Media form includes features of social media that are significant to master frames and collective action positioning.

In the remainder of the paper, we apply our multidetermination framework to examine participatory dynamics through social media. Following our frame approach, our investigation asked:

- **RQ1**: What master frames organize participatory dynamics through social media?
- **RQ2**: What collective action positions form in participatory dynamics through social media?
- **RQ3**: What social media forms are significant to master frames and collective action positions?
- **RQ4**: How do master frames, collective action positions, and media forms interrelate?
Research Context

In November 2009, e-mails of climate scientists at the University of East Anglia, Climate Research Unit (CRU), were hacked and posted online. These casual e-mails between climate scientists within and outside of the CRU revealed scientists discussions about “tricks” in dealing with climate data. Blogs, and later on newspapers, picked up this event, which caused a peak in public attention to climate sciences. The event was coined “climategate,” enforcing associations of hidden agendas from the previous Watergate scandal, in climate sciences (Nerlich, 2010).

Climategate was a unique event because it polarized the scientific consensus on anthropogenic climate change. Anthropogenic global warming (AGW) was questioned in the public debate that followed the leak of the e-mails. In April 2010, the CRU scientists were cleared of any unethical behavior, as the terms “trick” were used in their scientific meaning, instead of the negative associations attached to tricking and forcing in lay contexts. However, the clearing of scientists gained much less media attention than the climategate event itself.

We chose to investigate climategate because the event was heavily debated in the public domain, and much of the public debate took place through social media. We chose to examine the debate on YouTube because it has become a forum for political expression (Edgerly et al., 2009). Climategate was a widely discussed event on YouTube, with more than 650 videos tagged with “climategate” that were posted within a few weeks of the start of the climategate debate in 2009.

YouTube has an “architecture of participation,” or technical capability, which is like a social networking site. YouTube allows users to share videos, create public and semipublic profiles, connect to other users profiles, create “channels” or personal pages to upload content, and maintain friends, favorites and subscriptions to channels (Lange, 2007). YouTube also has an interactive format for participation through commenting on videos and direct reply to comments. The media is known for a broadcast capability, so that users do not need to be friends with other users or followers of the media to view and share video content.

Methodology

Data Collection

The data analyzed for this paper comes from the two most popular climategate related videos on YouTube posted in November-December 2009. We chose these videos because they had the highest number of views and comments at the time of our analysis. We expected important master frames would emerge in the most popular videos, given that master frames are theorized to govern large swaths of social behavior (Snow & Benford, 1992). We also chose these videos because each video depicted a different point of view about climategate, either using climategate to discredit or defend AGW. We expected formation of positions to emerge across videos with opposing views, given that the formation of positions in collective action framing is theorized as contested agency between actors.

The first video, titled “Al Gore Confronted on Climategate in Chicago,” (hereafter called “Gore”) was posted on November 30th, 2009 (views: 279, 354; comments: 7,405) (WeAreChangeChicago, 2009). The Gore video was created by an activist group and designed to discredit climate change science and anthropogenic global warming (AGW). Dark and ominous music plays in the background as actual protestors from an activist group in Chicago approach Al Gore at book signings with aggressive questions about climategate.

The second video, titled “Climate Change—Those hacked e-mails,” (hereafter referred to as “Hacked e-mails”) was posted on December 4th, 2009 (views: 248,388; comments: 5,275) (Potholer54,
2009). Hacked e-mails was created by an individual and designed to defend climate change science and AGW. Coverage of climategate from “right-wing” media outlets were edited together in the video to depict this media as repetitively cherry picking quotes from the leaked e-mails. A voice over using a calm and reasoned tone describes how quotes emphasized in the right wing media do not provide evidence for so-called “fudged” data.

Video Comments
Comments provided the qualitative content to understand frames, positions, and their relationship to media form. For each video, roughly 100 consecutive comments were selected from three identical time periods. These three points in time were selected in order to analyze durability of frames over time. First, the earliest 100 comments, posted in November-early of December 2009, directly after the climategate event occurred and the videos were published in YouTube, were selected from each video. Second, around 100 comments were selected from each video from the April 2010 time period, after the clearing of the climategate scientists. Finally, around 100 comments were selected from each video from the August 2011 time period, reflecting the most recent comments. In each set, consecutive comments were chosen in order to analyze the formation of positions. 100 comments for each time period were sufficient for a dominant pattern of master frames and response positions to emerge.

Data Analysis
Instead of using frame categories identified in earlier research into climate change communication, such as “social progress,” “economic development,” or “runaway science” (e.g. Nisbet, 2010), we used qualitative, inductive coding to analyze the two videos and sets of video comments for frames emergently. First, we expected master frames to be the dominant meanings in our corpus of data, made evident by references to events, people, and issues. Each comment was analyzed as an individual unit, read in full, and coded for events, actors, or issues that made sense of climategate within a broader field of meaning. Frequencies of usage and meanings of master frames were then compared for changes over time from November 2009, April 2010, and August 2011. Second, each comment was coded for a collective action position and for specific calls to action within those positions. This resulted in three positions: pro-AGW (n=223), anti-AGW (n=253) and nonapplicable, or N/A (n=152). Finally, we investigated media affordances, or the “type of action or a characteristic of actions that a technology enables through its design” (Enjolras et al., 2012, p. 2). A unique affordance of YouTube is the platform’s broadcasting capability, enabling many-to-many forms of communication, combined with communication tools such as comments and comment replies that afford one-to one forms of communication (Enjolras et al., 2012, p. 2). Based on these affordances, we chose to investigate the relationship between video content and comment content, which has been studied, but not extensively (Edgerly et al., 2009; Edgerly, Vraga, Dalrymple, Macafee, & Fung, 2013; van Zoonen et al., 2008), and the comment reply affordance. First, we coded both videos for master frames and compared those to the frames formed in the comments to link master frames of the YouTube video to the master frames of comments. Next, we coded the comments for the number of authors and the number of interactive exchanges to link the comment reply feature of YouTube to the formation of collective action positions.

Findings
We found three primary master frames: political scam, media hype, and scientific fraud, all of which remained stable over time. We found three primary collective action positions: seeking justice against
political conspiracy, sharing information to counteract media hype, and showing evidence to reveal scientific dishonesty, all of which mirrored the dominant master frames. Finally, we found that the comments associated with each video shared the same dominant master frame as the video itself and that interactive comment chains enabled users to solidify their own positions and facilitated mutual opposition. In the next sections, we present the analysis of each master frame and the corresponding collective action positions, followed by a presentation of the analysis of media form.

Master Frames & Collective Action Positions

Climategate as Political Scam: Seeking Justice Against Political Conspiracy

The first dominant master frame was politics. In this frame, the public made sense of climategate as a political scam. The frame consisted of an ongoing script about political scams and hoaxes that described a “global government” or “international order” with unchecked power that sought to use climate change to expand their corrupt power:

“Climate changes” were created by the very same people who want one world government. enough said. Pleaseeeeeeeee Bankster save me from Man made Global Warming, we will pay you Taxes’ (April 2010, Gore).

At the center of the political script were well-known political actors such as Al Gore. Politicians such as Gore served as the central villains of the script, a symbol used to make sense of climategate, and climate change generally, as hypocritical:

“Al Gore leaves the book signing imploring everyone to conserve, use less energy, carpool, reduce your carbon footprint by living in a smaller home and buying local. Al Gore hops in his chauffer driven SUV, heads to the airport where his private jet is waiting, and flys home to one of his sprawling mansions. Al Gore: Total disingenuous fraud” (Aug. 2011, Gore).

The master frame of politics provided the public a consistent and well-known script for making sense of climategate as a “hoax” or “scam” that was part of a broader international government plan to gain power and control.

Collective action positions consisted of calls to action against targets of blame. The most dominant collective position was seeking justice against political conspiracy. This position was stimulated by the political scam master frame, and formed by antagonists of AGW who placed blame on corrupt political systems and greedy politicians for falsely promoting the existence and reality of AGW:

“Gore is a fraud. This time they will not succeed in hiding the truth. Climate change is a HOAX. Hopefully coming revolution will take care of these freaks who would like to tax us for breathing” (Nov. 2009, Gore).

Antagonists made metaphorical connections to Nazis in order to build support for the blame of corrupt politics:

“America is the last great hope of humanity, yet again, not the corrupt government but the american people . . . they still will not give up their guns cause they know what the UN nazis have in the plan for them” (Aug. 2011, Gore, italics in metaphors added).
Antagonist’s position on AGW as a political conspiracy prompted calls to expose conspiracy and bring political figures to justice. Antagonists called for forms of corporeal punishment and other physical acts in response to the conspiracy:

“AL Gore should be charged with treason.” (commentor A); “get a rope!!!” (commentor B); “The same one used on saddam.” (commentor C); “Jail? people are killed for treason, you will never see him in jail ;)” (commentor D) (Nov. 2009, Gore).

Antagonist’s calls to seek justice mirrored those typically associated with corrupt and violent political figures; the very sorts of politicians that the antagonists were blaming for falsely promoting the reality of AGW.

Climategate as Media Hype: Sharing Information to Counteract the Media Frenzy
The second dominant master frame was media. In this frame, climategate was made sense of by the public as hype, resulting from media frenzy. This frame consisted of a script about media bias specifically describing how “right-wing media” and conservative media outlets used climategate to promote and push their conservative agendas: “People are brainwashed by fox news” (Aug. 2011, Hacked Emails). “The public is inundated with controversy given to them by the media. The media’s unwillingness to communicate scientific facts to the public is worrying” (Nov. 2009, Hacked Emails).

At the center of the media script were well-known right wing media figures such as Alex Jones. Conservative media figures such as Jones served as the central villain of this script, a symbol used to make sense of climategate, and the denial of climate change more generally, as the result of uneducated opinions: “Wow, Limbaugh, Beck, and Alex Jones, that’s a trifecta of mental ineptitude. If any of Hacked cretins says anything, it’s usually safe to assume that the opposite is true” (Aug. 2011, Hacked Emails). The media master frame provided the public a consistent and well-known script for making sense of climategate as “hype” that was part of a broader conservative media agenda.

The second most dominant collective action position was sharing information to counteract the media frenzy. This position was stimulated by the media hype master frame, and formed by adherents of AGW who placed blame on the media and conservative media figures for calling into question the already established reality of AGW:

“If you can disregard the enormous wealth of peer reviewed literature that can be shown demonstrably to be true by taking a few cherry-picked out-of-context quotes from a few e-mails from a handful of scientists and claim ‘reasonable doubt’ then there is nothing reasonable about your conclusions. If you have any real evidence against AGW there’s a nobel prize waiting” (Nov. 2009, Hacked Emails).

Adherents made metaphorical connections to other events in the common past, such as Galileo and witch hunts, in order to build support for blaming the media:

“Incredible video. Modern day witch hunt. Incredible how the scientists have to be treated like galileo even today. Incredible how the people have to be indoctrinated through Radio and TV by assholes that have the degree of comic and gossip story tellers” (April 2010, Hacked E-mails, italics in metaphors added).
Adherent’s position on AGW as an established reality, called into question only by a media frenzy, prompted calls for action to use media outlets and the Internet to spread messages and share information about the wrongful claims of antagonists: “Great video mate, you need your own TV station so not EVERYONE will be exposed to the likes of glen beck” (Nov. 2009, Hacked Emails). Adherents also promoted others to use social media to share information and respond to the antagonists directly: “Thanks for the video post. Shame you didn’t post it as a video reply to one of the loonie ones” (Nov. 2009, Hacked Emails). Adherent’s calls to share information via different forms of media mirrored the actions of the media outlets they blamed; yet they called for using new forms of social media to counteract the dominant media outlets.

**Climategate as Scientific Fraud: Showing Evidence to Reveal Scientific Dishonesty**

The final dominant master frame was science. In this frame, climategate was made sense of by the public as scientific fraud. This frame consisted of a script about the role of science in society that specifically described the importance of “truth” or “honesty” in science, to depict the activity reflected in the climategate emails as dishonest:

“We are not faithists here. We are not supposed to take scientists on trust, the way religionists accept the word of their priests. Scientists are not supposed to lie and evade when asked to show how they arrived at their conclusions . . . they are not supposed to delete the key data on which their findings are based. It is good for science when such malfeasance is uncovered. What matters in science is “truth”” (Nov. 2009, Hacked Emails).

At the center of the science master frame were corrupt climate scientists. Climategate scientists served as the central villain of this script, a symbol used to make sense of climategate as an effect of corruption in climate science more generally: “If those who claim to expand human knowledge pick and choose data to push the enveloped answers demanded by sponsors and political masters, the integrity of their reports are suspect” (Aug. 2011, Hacked Emails). The science master frame provided the public a consistent and well-known script for making sense of climategate as scientific fraud that was part of a wider problem with corruption in the climate sciences.

The final collective action position was showing evidence to reveal scientific dishonesty. This position was stimulated by the scientific fraud master frame, but extended into antagonism of AGW more generally by blaming the culture of climate sciences and the scientists themselves for falsely promoting the reality of AGW:

“I know this video is trying to “disprove” the “hysteria” about the exposure of the leaked info to the public eye. But whatever reasons one can conceivably offer to the public so as to maintain some credibility for professional scientists, the truth remains for all to see. [There is a] bandwagon effect [in climate sciences] and the professional fear of being out in the cold. Massage data?” (Aug. 2011, Hacked Emails).

Antagonists made metaphorical connections between climate scientists and religious figures in order to build support for the blame of scientists: “In my opinion, AGW supporters have been more like evangelists than scientists - and foul-mouthed ones at that. The video here is a prime example” (April 2010, Hacked E-mails).

Antagonist’s position on AGW, as a false reality validated by a systemic problem in the climate sciences, prompted calls for action to show “evidence” from honest scientists to counter adherents
claims: “To be fair there’s a list of 31,000 that dismiss man-made global warming, and 26,000 of those are PhDs” (Nov. 2009, Hacked Emails); “Dr. Borchert finds from satellite measurements that global warming between about 1980 to 2008 was “not anthropogenic but caused by natural activities of the Sun surface” (April 2010, Hacked Emails). Antagonist’s calls to show evidence from science mirrored those actions typically associated with science, as the practices of science were not called into question, just the practices of climate change scientists supporting AGW.

Media Form

Video-Comment Relationship

The two most dominant master frames in the comments were politics and media and these matched the master frames found in the two corresponding videos. In the “Al Gore” video, the political nature of climategate was highlighted through the depiction of Al Gore as a crooked political figure. The majority of comments for this video drew on the stimulus of the political master frame promoted by this video. In the “Hacked Emails” video, the media frenzy around climategate was highlighted through the depiction of right-wing media commentators as pushing their agenda. The majority of comments for this video drew on the stimulus of the media master frame promoted by this video.

These videos, each watched over 245,000 times, together with the reinforcing comments they garnered, indicates an information cascade, where users make decisions based on seeing decisions of others in the social network. This is a form of influence, as users draw rational inferences from visible decisions, and imitate those decisions on the basis of their inferences (Enjolras et al., 2012). The relationship between video and comment frames was reinforcing.

Chains of Comments

The chains of comments we examined did not show a change of position by either adherents or antagonists of AGW. The use of the comment reply feature was not very prominent, but when used, it was for elaborating on the same position repeatedly. For the “Al Gore” video, the initial set of comments in November 2009 included only two interactive exchanges and no comment chains. However, in the initial set of comments for the “Hacked Emails” video, 24 interactive exchanges occurred, including several chains of comments.

These chains of comments constituted a form of “sparring” between two or more users. An important characteristic of these sparring chains was that exchanges ended with no change of position by either contributor. Rather, as the chains developed, each contributor solidified their own positions through elaboration of their position, facilitating their mutual opposition.

Users garth31 and oester22 “sparred” about the truth of AGW over 30 consecutive comments. Garth31’s position is an adherent of AGW while Oester22’s position is an antagonist of AGW. Garth31 begins the exchange by arguing that renewable energy is an important business investment. Oester22 responds by questioning the intentions of the government in promoting alternative energy:

Garth31: “@oester22: Many of the other developed countries are also making renewable energy a priority when it comes to their energy policy... soon we’ll have to import such alternatives from China rather than making them at home if we don’t invest in it.

Oester22: @garth31: We should be looking to alternatives but currently the government wants to force this upon us and their intentions are not for our well-being.
Garth31 responds by arguing that it is the truth of AGW that matters, and that government action is a separate issue. Oester22 responds to this by providing a link to “evidence” online that AGW is not real. Garth31 then responds by arguing that Oester22’s source of evidence is not valid, to which Oester22 responds by defending his evidence. This comment chain continued for several more turns, but ended with no position change by either participant. Chains of comments we examined reinforced user’s initial positions through elaboration of positions and facilitation of mutual opposition.

Discussion

The aim of this paper was to offer a framework to investigate participatory dynamics through social media as the complex interplay between social, instrumental, and technological determinants (Dahlberg, 2004). Our frame approach conceptualized participatory dynamics as an interrelationship of 1) socially embedded master frames, 2) instrumental positioning through collective action framing, and 3) constitutive media forms. In this section, we discuss how our multideterminant frame approach contributes to the transformation debate by providing an assessment of the relative value of social media in response to specific social problems.

The complex interplay between social, instrumental, and technological determinants provides a contextualized account of participation through social media. Participatory dynamics around climategate on YouTube were embedded in longstanding public narratives about politics, science, and media in society. Our analysis specifically showed how scripts from broader socio-political discourses in the climate change debate conditioned this context of participation. Despite changes in events, such as the 2010 clearing of the scientists, frames in comments stayed stable over time. Scripts also influenced user’s active expression of positions and attempts to motivate others to action. Our analysis revealed how calls to action by users followed more or less “ready made” positions that mirrored the dominant master frames. Collective action positions reinforced scripts through the perpetuation of positions by the media form. Our analysis showed how the technological affordances for action on YouTube acted as interpretive anchors by elaborating already determined positions and facilitating mutual opposition. This interrelationship between frames, positions, and media form constitute a unique mode of response to the social problem of AGW in the context of the climategate event.

Contextualized accounts are important to understand participation through social media in socially significant moments. For example, social media has increasingly been studied during important moments prior to political uprisings or directly after social disruptions (Attia, Aziz, Friedman, & Elhussheiny, 2011; Burns & Eltham, 2009; Dalacoura, 2012; Sayed, 2012). These social media dynamics constitute a mode of organizing distinct from dynamics studied in the tradition of CMC research, and new frameworks are needed to understand social media in these contexts (Enjolras et al., 2012). A multideterminant framework features the important circumstances of context, revealing the unique nature of participation through social media in socially significant moments.

Our multideterminant framework contributes to the transformation debate by providing an assessment of the relative value of social media in relationship to specific social problems. Relative value is assessed by what facets of the social problem become important through social media participation. In our case, we can assess that YouTube responses to climategate participated in the shifting consensus around AGW. Further, we might assess that these responses created a relatively polarized representation of the climate change debate. We might imagine how this would look different given a different social problem and social media with different affordances. This assessment is significant because it shows...
how participatory dynamics of social media promote particular understandings of social problems in society.

Limitations
This study has limitations. First, our analysis is one interpretive reading of a small sample of data. In order to apply our frame approach and conduct an in-depth qualitative analysis, we chose to limit the amount of comments we analyzed. As such, the overall corpus of comments analyzed in this paper represent only a fraction of the total comments posted in response to these videos. Future studies should combine an in-depth analysis with additional forms of analysis that examine a broader corpus of comments. Second, other interpretations are possible, depending on the definition of the determination. For example, one might choose a broader investigation of the socioeconomic or cultural factors, or to examine the agency of video-makers on YouTube, or finally how different aspects of the Internet, such as search engine rankings, figure as part of social media form. Finally, our results are limited in what they represent about the public’s understanding climategate. We chose to examine responses to climategate videos on YouTube, which represents only a small portion of the total online public discourse about climategate. Future studies should consider a comparative analysis of public discourse surrounding the event across different social media platforms.

Conclusion
The debate over the transformative potential of social media has polarized, in part, due to research that favors a single determinant. Our multideterminant frame approach challenges conceptual boundaries of single determinant approaches and instead offers a method of investigation to assess the relative value of participatory dynamics through social media in relationship to specific social problems. This method is useful for scholars who seek to understand and problematize social media as a unique mode of organizing with problem-based consequences in society.

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Notes
1 This tendency does not preclude awareness of the other determinations. Researchers can (and often do) have awareness of all three determinations, but tend to foreground one more prominently.
2 There are many possible ways to conduct multideterminant research (i.e. examining each determination in a separate study). Our frame approach is one interpretive approach, focused on doing multideterminant research within a single study.
3 The number of views and comments reflect the total numbers at the time of our analysis, July 2011.
4 Both videos were still garnering comments on a weekly basis at the time of our analysis, July 2011, some year and a half after they were posted.
5 Other scholars have also cited a similar number of comments as sufficient for qualitative investigation of meanings through online media (Turnsek & Janowski, 2010).
6 N/A was assigned to comments that could not be discerned as having a clear position on the debate. In some cases, comments consisting of very short postings, such as “YEEHHH!” were not coded as part of the framing processes. This methodological decision was made in reflection that these “bits” of social media data do not reflect enough meaning to constitute a position.

7 These view counts were from the time of our analysis in July 2011.

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