CULTURAL PRODUCTION OF PROTEST FRAMES AND TACTICS: CYBERMEDIARIES AND THE SOPA MOVEMENT

Completed Research Paper

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Abstract

On the surface, the recent mobilization of opposition to the Stop Online Piracy Act (SOPA) over the internet appears to be yet another cyberactivism success. Yet, the anti-SOPA movement should have been doomed to failure for two reasons. First, the issue was too abstract to mobilize local kinship and friendship groups. Second, because mass media interests were served by the bill, mass media was unmotivated to diffuse the anti-SOPA message. Our analysis of this movement suggests it succeeded because of cybermediaries, internet companies that used their sites to diffuse the anti-SOPA message. They accomplished this through cultural productions of protest frames and tactics – technology-based verbal, graphical, and experiential representations of the SOPA protest frame and technology-based toolkits for use at the cybermediaries' sites as well as for use at visitors' sites. Our key contribution lies in identifying the nature and relative impact of these frames and tactics in cyberactivism.

Keywords: Cyber activism, Social issues, Social movement, Social media, Stop Online Piracy Act (SOPA), Protest frames, Protest tactics, Cybermediaries, Cultural production

Introduction

> *"Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever does."* (Margaret Mead)

> *"The new revolutionaries are networked, mobile, and coming to a city near you."* (Cover of Wired magazine, January 2012)

Researchers within MIS and other disciplines are concerned with internet impacts on society. In particular, DiMaggio, Hargittai, Neuman, and Robinson (2001) identified three ways in which the internet impacts solidarity – an aspect of society of key importance to sociologists. First, the internet can change individuals' experiences of connection or alienation. Second, the internet can fragment or integrate society, i.e., exacerbate or attenuate a "digital divide." Third, the internet has the capability to "renew" the public sphere. Issues of alienation/connection and the digital divide have been addressed by IS researchers (e.g., Agarwal et al. 2009; Hsieh et al. 2008; Kraut et al. 2002; Kraut et al. 1998). While there is certainly room for additional research on these two issues, there is a clear opportunity for IS researchers to consider the third – the internet's impact on the public sphere. Castells (2007: 249) posited that the internet has the capacity to "change the power relations institutionalized in society." This can occur by facilitating an informed and engaged public (DiMaggio et al. 2001). Engagement typically takes the form of campaigns and social movements. In fact, the internet is facilitating activism by private, committed citizens in an unprecedented scale and fashion (Earl and Kimport 2011). The purpose of this study is to understand the internet's role in social movements, focusing specifically on the recent anti-SOPA (Stop Online Piracy Act) movement ("SOPA movement" from now). The research question this study addresses is: *How do cybermediaries, i.e., online entities that mediate information and resource flows, influence the organization and effectiveness of social movements?*

Social movements are goal-oriented actions by two or more actors, concerned with promoting or resisting social change (Snow and Soule 2010). Conventional movement wisdom suggests that the role of the internet to engage the public on SOPA issues should have been limited for two reasons. First, the collective action underlying social movements is believed to require embedded, local groups (Kim and Bearman 1997). Unlike issues such as racial or gender equity, access to economic opportunity, or basic human rights, the issues underlying SOPA are abstract and impersonal and were therefore unlikely to be discussed in most friendship and kinship groups. Therefore internet facilitation could not simply overlay these groups. The narrow window for action further constrained the role of such groups. While the internet can – and does – overlay existing local networks in general, relying on these extant networks fails to leverage the reach of the medium (Castells 2007). Second, mass media is believed to be of paramount importance in diffusing movements (Strang and Soule 1998). Mass media seeks to concentrate power-making in the hands of a few; The internet, as a "self-communication" medium, seeks to diffuse that power widely (Castells 2007; Mills 2000 [1956]). The oppositional nature of mass media and "self-communication" media was exacerbated in the SOPA movement, which directly pitted the anti-piracy interests of media companies against the freedom-from-censorship interests of internet companies. This guaranteed that the concerns of internet companies would receive little proactive coverage from mainstream media, reducing the scope of movement diffusion. Further, mass media showcases charismatic leaders, who are believed to be essential to both mobilization of action from sympathizers and positive reaction from movement targets (Morris 2000), in a way that the internet, which is believed to dampen influence by charismatic leaders, cannot (e.g., Kiesler et al. 1984).

The SOPA movement thus provided us an opportunity to discover internet-based capabilities that enable social movement success in a context where an online social movement had two major reasons to fail. Our analyses of the movement surfaced the key role played by "cybermediaries", previously considered only in the context of economic relationships (Sarkar et al. 1995), in cultural productions. *Cultural production is defined as the development of artifacts that (1) represent ideology and (2) provide toolkits for shaping action repertoires and strategies* (Swidler 1986). Cybermediaries are the organizations that mediate the online diffusion of information, frames and capabilities. In representing ideology, technology enabled the diffusion of verbally communicated information related to the movement's frame of SOPA. By verbally expressing - through articles, blogs, and webpages - why protesters were against SOPA and what

others could do to help the movement, these verbal representations of information enabled research and persuasion. Further, technology enabled graphical and experiential (i.e., interactive) representation of the movement's framing of the SOPA issues. In graphically and experientially communicating the idea of censorship – through graphics such as Justin Bieber behind bars, redactions, and blackouts – the movement enabled the uninitiated to grasp the censorship frame quickly without having to exert the effort required to read verbal information. By providing toolkits comprised of these three types of tools, technology enabled the diffusion of protest capabilities. Technically-skilled individuals devised technology-based protest tactics and shared them with less technically skilled individuals through technology. Through these representational and action-activating artifacts, the internet addressed the two key diffusion challenges for movements: diffusion of ideological frames and diffusion of protest tactics (Givan et al. 2010). Because of this effectiveness in diffusing frames and tactics, the internet was able to be effective, despite the movement's inability to mobilize through local groups or garner momentum through news media coverage.

In the following sections, we first consider the diffusion problem underlying social movements and extant research on the burgeoning phenomena of cyberactivism and online social movements. We then consider literature that views diffusion as a function of cultural productions. Next, we describe the SOPA movement and our approach to studying it. We then develop an alternate model of movement diffusion based on technology-based production of culture. We conclude by examining implications of our work for research on social impacts of technology and by considering future research directions.

The Problem of Diffusion

Protest participation entails two types of behaviors – mobilizing support from potentially-sympathetic others and directly targeting the systems of authority that protesters find problematic (Kim and Miranda 2011). Mobilizing support has been conceptualized as a diffusion problem (Kim and Bearman 1997; Strang and Soule 1998). Research on diffusion focuses on understanding "how things – ideas and practices – get from here to there" (Katz, 1999: 145). There are two core areas of diffusion investigation: (1) the objects of diffusion – or what is diffused; (2) the diffusion process – or how diffusion occurs.

Objects of Diffusion

The two key objects to be diffused in mobilizing social movements are collective action frames and protest tactics (Givan et al., 2010). Frames "help people understand complex issues and integrate these with their own prior experiences and knowledge" (Soule 2009: 42). Collective action frames are "action-oriented sets of beliefs and meaning that inspire and legitimate social movement activities and campaigns" (Benford 1993: 199). Framing is typically viewed as meaning conveyed through language. "The strict definition relates to the wording … to a semantic manipulation of prospects" relevant to a situation (Kühberger 1998: 24). Social movement researchers have observed the intrinsic relationship between framing and vocabulary, noting that we construct frames "using pre-fabricated vocabularies or schemas" (Fiss and Hirsch 2005: 31). Framing also may derive from non-verbal stimuli though – "the loose definition of framing refers to framing as an internal event that can be induced not only by semantic manipulations but may result also from other contextual features of a situation and from individual factors" (Kühberger 1998: 24).

Protest tactics are "noninstitutionalized forms of political expression" that can be used to "try to shape public opinion and put pressure on those in positions of authority" (Taylor & Van Dyke, 2004: 263). Tactics may be conventional (e.g., lobbying or letter writing), disruptive (but non-violent, e.g., draft resistance or nonviolent civil disobedience), or violent (e.g., assault, or rioting) (Tarrow and Tollefson 1994). Tactics evolve in response to changes in social structure or systems of authority or technological developments (Tilly 1995). The internet is a recent technological development that has spawned new conventional, disruptive and violent protest tactics (Costanza-Chock 2003), termed "hactivism" or "cyberactivism" (McCaughey & Ayers 2003). Conventional tactics include research, information distribution, artistic production, lobbying, and coordinating offline activities. Disruptive tactics include email or form floods, fax bombs, viruses/worms/Trojan horses, data theft or destruction, site alteration or redirection, denial of service, and virtual sit-ins (a number of people making repeated and simultaneous requests of a targeted website). Violent tactics include activities that destroy property or endanger life,

ranging from server wipeouts and data corruption to system control (e.g., air traffic control systems).

The Diffusion Process

The study of social movement diffusion has revealed two major types of diffusion mechanisms – relational and cultural mechanisms (Strang and Meyer 1993). Implicit in conceptualizations of social movement diffusion is the Katz and Lazarsfeld model of the sequencing of those mechanisms (1964 [1955]).

Relational diffusion occurs through interpersonal communication, typically within kinship and friendship networks (Givan et al. 2010). While diffusion of other ideas and artifacts may also occur through acquaintanceship networks, embedded relationships are key to relational diffusion in social movements. Embeddedness in local groups is important because both knowledge and motivation diffuse through such groups. Impersonal means, such as direct mail, are believed to be especially limiting in recruiting participants to high-risk or high-cost movements (Klandermans and Oegema 1987). In contrast, networks of relatives and friends have been found to be particularly effective in recruiting movement participants (Klandermans and Oegema 1987). Embeddedness enhances diffusion of complex or tacit knowledge (e.g., Reagans and McEvily 2003). Embeddedness therefore helps in the diffusion of collective action frames, a key challenge in social movements. In other words, embeddedness gives rise to ideological homophily.

Embeddedness also enhances cooperativeness, shared norms, and shared values, (e.g., Reagans and McEvily 2003), thereby motivating movement participation (Klandermans and Oegema 1987). Kim and Bearman (1997) identified a third mechanism through which embedded, local groups induce collective action, proposing individuals' pursuit of homophily causes them to assess their own ability to influence those around them in the presence of disparate views. People cave to local pressure to adopt certain frames when they believe *they* will be unable to influence those around them to adopt competing frames.

Cultural diffusion occurs when unconnected actors reach a common conclusion about what makes sense in their world (Givan et al. 2010). This common conclusion attains from shared meanings that is the product of "theorization" by "culturally legitimated theorists" such as scientists, intellectuals, policy analysts, and professionals (Strang and Meyer 1993: 494). Thus, while relational diffusion is geographically-circumscribed, non-relational diffusion is culturally-circumscribed. Since most people typically lack immediate access to cultural leaders, mass media has been a key intermediary in non-relational diffusion.

Figure 1: The Traditional Model of Social Movement Diffusion
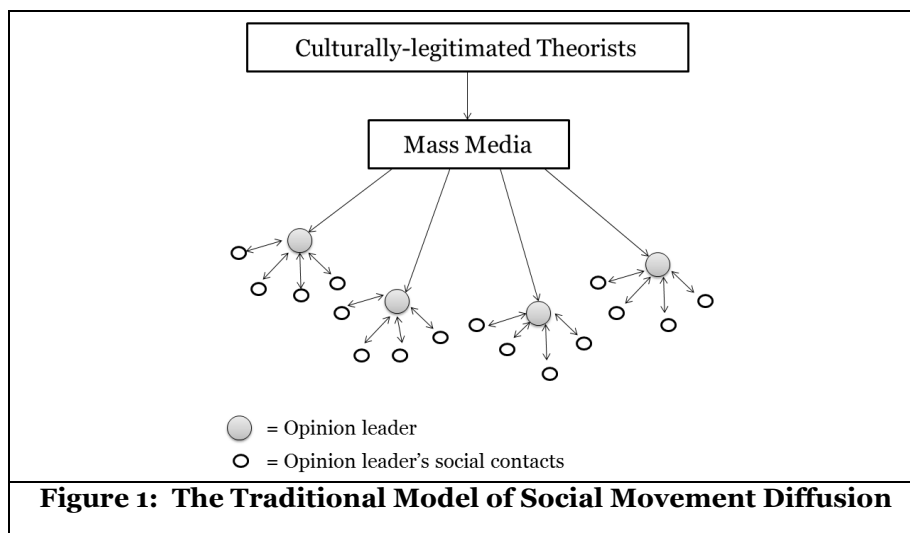
The *sequencing* of relational and cultural diffusion is captured in Katz and Lazarsfeld's (1964 [1955]) "two-step flow of communication" hypothesis, represented in Figure 1. Katz and Lazarsfeld proposed that information flows from mass media (TV, radio, and newspapers) through "opinion leaders" to "less active sections of the population" (1964 [1955]: 32). Their perspective echoes Mills's (2000 [1956]) view of mass

media as being able to communicate to large numbers of people, but permitting no feedback. Mass media thus become the producer and arbiter of cultural knowledge. Anecdotally, we see this in American Bandstand's role in legitimating rock 'n' roll musicians and in Gene Siskel and Roger Ebert as arbiters of the American moviegoers' tastes. In social movements, mass media culturally legitimates some theorists rather than others. Castells (2007: 240) noted that the "mass media system" has been the "main channel of communication between the political system and citizens."

In subsequent empirical investigation, Katz (1957) confirmed the two-step model but reported that even though they have greater exposure to mass media than the general public, opinion leaders are more influenced by other people than by media. While mass media "are not very effective in convincing and activating people" (Klandermans and Oegema 1987: 520), they play three key roles. They diffuse information about movement issues (Andrews and Biggs 2006), frame the issues (Iyengar 1994), and mobilize consensus on them (Klandermans 2004). In these roles, Castells (2007) observes, media conveys power to some entities through "mind framing."

While many, including Castells (2007), anticipate "self-communication media", i.e., the internet, dis-intermediating mass media, that has yet to happen. While the internet is gaining ascendance as the primary news source with some demographics, the dominant news source for most Americans as of 2011 was still television (Kohut et al. 2011).

Diffusion as Cultural Production

Rather than viewing culture as one of two diffusion pathways, culture theorists view culture as central to the diffusion of ideas and artifacts, whether through micro-level exchanges or via mass communication (e.g., Swidler 1986). Geertz (1973: 5) defines culture as "webs of significance [man] himself has spun." Culture provides "models of" and "models for" action (Geertz 1973: 93). In other words, culture shapes both interpretation of action and enactments.

Some models are privileged by the existing power structure though (Clemens 1993). Thus, culture has been viewed as both a constraint on and resource for diffusion (Weber and Dacin 2011). Different actors possess different cultural resources and repertoires that are activated by artifacts, yielding different perspectives on those artifacts (Leonardi 2011). By enabling actors to combine and harmonize these different perspectives, culture, as a toolkit, can help actors generate and construct new strategies of actions. However, culture, as a resource, can also constrain actors' repertoires, because public acceptance and identity-bound expectations can limit the set of actions they can draw from and the set of cultural resources they have access to (Weber 2012). Kellogg (2011) distinguished cultural toolkits that foster re-framing, shared identities, and offer repertoires for contentious action from political toolkits that enable actors to enact and coordinate change efforts. While political toolkits are embedded in formal systems of authority within an institution, cultural toolkits can be introduced by members of an organization with the goal of instigating institutional change.

A key tactic used in instigating institutional change is invoking and re-purposing familiar cultural repertoires and artifacts (Hargadon and Douglas 2001). Invoking the familiar conveys the impression that the strategic action is aligned with societal rules (Swidler 1986). This tactic entails the combination of mimicry and innovation. For example, formation of women's "clubs", a previously masculine cultural repertoire, rather than "associations" or "societies", which were more feminine repertoires, during the 19th century women's movement mitigated extant gendered identities (Clemens 1993). Re-purposing of cultural repertoires and artifacts can range from the relatively faithful appropriations of the women's movement to downright ironic appropriations such as those advocated in Lasn's (2000) notion of "culture jamming." The unit of cultural production and culture jamming is a meme (Lasn 2000), examples of which include "tunes, ideas, catch-phrases, clothes fashions, ways of making pots or of building arches" (Dawkins 2006: 192). Memes, like the analogous gene Dawkins (2006) used to conceptualize the unit of cultural production, evolve via replication (imitation) and variation.

Cultural structuration then occurs via the proliferation and evolution of memes (Dawkins 2006). "Cultural brokers" play a key role in cultural structuration, which subsequently creates a "tipping point" for field change (van Wijk et al. forthcoming).

Cyberactivism and Online Social Movements

Cyberactivism, defined as "political activism on the internet" (McCaughey and Ayers 2003: 1), covers a spectrum of activism ranging from individual protest actions to online social movements. One of the earliest documented cases of an online movement was the Lotus Marketplace protests.

In 1990, the Lotus Development Corporation developed a database of names, addresses, demographics, and purchasing behaviors of 120 million individuals in the United States. In May 1990, soon after the product was announced, Mary Culnan, a Georgetown University professor and volunteer for Computer Professionals for Social Responsibility (CPSR), brought the product to the attention of CPSR's director. CPSR began to raise questions about the ethics of storing information about ordinary citizens without the permission, mobilizing a protest that garnered political attention, including a House subcommittee. While disseminating through formal channels, CPSR concerns about the product also made their way through online groups and computer conferences (Paine and Abbott 1991). Online action was ignited though by a Wall Street Journal article discussing thought leaders' privacy concerns about the product. The article was posted to an electronic bulletin board (Gurak 1999). Comments were appended by protesters encouraging readers to write emails and letters to Lotus requesting their names be removed from the database. Lotus received 30 thousand emails requesting name removal, costing the company around $30 thousand in removal cost beyond lost revenue and public relations expenses (Gurak and Logie 2003). Though protesters represented only 0.025% of the names in the database, Lotus eventually gave in to protesters citing "the substantial, unexpected additional costs required to fully address consumer privacy issues" (Culnan & Smith, 1992: Gurak, 1999). The Lotus Development Corporation shut down Lotus MarketPlace, marking a victory for the first ever cyberactivism event (Gurak, 1999).

A second notable online protest success was the "Haunting of GeoCities." In 1999, Yahoo! bought GeoCities (http://geocities.yahoo.com), a virtual neighborhood that had encouraged "homesteaders" to build attractive sites that would enrich neighborhood value. On 6/25/1999, Yahoo! posted a policy stating its assumption of property rights over homesteaders' content and forced homesteaders to sign over these rights when they attempted to revise their webpages. This action quickly fomented protest on GeoCities. On 6/29/1999, Jim Townsend, a contract software developer, called for a Yahoo! boycott, created a protest site, and challenged graphics professionals to "design logos which don't infringe on Yahoo!'s copyrights but will give viewers the message that they are under boycott" (cited in Gurak and Logie 2003: 36). Graphic designers obliged, and within hours, sophisticated banner ads and graphics were available at Townsend's site for homesteaders to use to protest the Yahoo! policy. These actions evolved into a protest technique called "Haunting of GeoCities," featuring homepages with a battleship gray background that either obscured the original page content or replaced it with an indictment of Yahoo!'s policies. On 6/30/1999, *Wired* magazine's online edition covered the protest. On 7/1/1999, the *New York Times* print edition reported on the boycott. By 7/2/1999, Townsend's site had listed 5 hundred "haunted" homepages and had received more than a million hits. On 7/5/1999, the story appeared on the Reuters newsfeed, thus appearing on Yahoo! news sites too. On 7/6/1999, Yahoo! posted a revised policy statement, retracting its earlier ownership claims over homesteaders' intellectual property.

These early instances of cyberactivism reveal many facets of the diffusion models noted earlier. The Lotus MarketPlace protests were initiated by a "culturally-legitimated theorist," Mary Culnan, and then picked up and diffused by mass media, the Wall Street Journal article. Notably though, rather than diffusing through local embedded groups, the movement diffused across geographically dispersed groups that were homophilous with respect to attitudes toward computer privacy.

The GeoCities protests lacked a "culturally-legitimated theorist." However, information about the oppressive act prompting the protests was diffused by the oppressor – Yahoo!, creating a shared experience within and localized to the GeoCities online community. Unlike the Lotus protests that needed the issue to be re-framed from one of market opportunity to privacy invasion, the GeoCities protests required no re-framing. GeoCities had cultivated homesteaders' expectations of intellectual property ownership in the vocabulary and terms of prior policy statements (Logie 2002). This culturally-embedded expectation was violated by Yahoo!'s new intellectual property statement in much the same way as we would feel violated by someone commandeering our homes. Citizens of GeoCities neighborhoods "were faced with the confiscation of properties they had labored to build" (Logie 2002: 40). Therefore, "GeoCities protesters were able to draw upon a pre-existing group cultural grounded in their shared experience as homesteaders who had become residents in particular neighborhoods within

GeoCities" (Logie 2002: 47). Though we saw grassroots mobilization of homesteaders, only a fraction of homesteaders (500 out of 4.6 million) participated in the protest prior to media coverage. Therefore, it is doubtful the protesters would have mobilized sufficiently without media coverage.

Since then, a variety of other social movements have taken to the web in protest. While not a resounding success, protests of the 2009 Iranian elections attracted worldwide attention, particularly the poignant on-camera death of Neda. On-the-ground protests were captured in narrative, photo, and video and diffused through cyberspace, to only then be picked up by mainstream media. The Arab Spring was sparked when a 26 year old Tunisian set himself on fire after being humiliated by a policewoman while trying to sell food to provide for his widowed mother and six siblings (NPR, 2011). Bystanders recorded the young man's demonstration and uploaded videos to Facebook and YouTube. As the videos went viral, protesters took to the streets across Tunisia, resulting in a regime change within a matter of weeks (NPR, 2011). Inspired by internet coverage of this victory, protesters began to mobilize in surrounding Algeria, Libya, Lebanon, Jordan, Mauritania, Sudan, Oman, Saudi Arabia, Egypt, Yemen, Iraq, Bahrain, Kuwait, Morocco, Western Sahara, Syria, and the borders of Israel. These protests resulted in complete regime changes in Libya, Egypt, and Yemen and significant government changes in Morocco, Kuwait, Jordan, and Oman. Because the ideas underlying these movements were not abstract, but graphically and viscerally captured, they required little mediation by "culturally legitimated theorists." Notably, the movement diffused across culturally homogeneous populations, facilitated by mass media coverage.

Over the last year, the United States has seen the Occupy Wall Street movement, which used social media to connect protesters, organize rallies, and spread the word about wealth inequality. On 7/13/2011, Kalle Lasn, long-term activist and author of Culture Jam (2000), issued a call-to-arms. In his anti-consumerist magazine, Adbusters, he encouraged readers to "flood into lower Manhattan, set up tents, kitchens, peaceful barricades, and occupy Wall Street for a few months," to demand "democracy not corporatocracy" (TheWeek, 2011). Following these instructions, a small group of protesters took to the streets with the message that wealthy individuals and corporations were controlling government economic policies and disrupting natural wealth distribution such that the top 1% of households owned 34.6% of privately held wealth (Domhoff, 2012). When police evicted protesters from Manhattan, the displaced protesters re-organized via the internet. Like the Arab Spring protests, the Occupy Wall Street movement quickly spread across the country as internet users saw YouTube clips of police brutality and Facebook posts by friends saying, "We are the 99%." This instance of cyberactivism, based upon a fairly abstract and highly contentious principle of de-linking of corporate and political interests, attained its impetus from culturally-legitimated theorist, Kalle Lasn. Beside extensive coverage by online media, the movement and its initiator garnered coverage from source like CNN, NPR, and the *Wall Street Journal*.

The SOPA Movement

The Stop Online Piracy Act (H.R. 3261) was introduced by U.S. Congressman Lamar Smith (R-TX-21). The bill, largely supported by the entertainment and mass media industry, aimed to stop the spread of pirated content and provide copyright holders the ability to block access to "foreign" websites that host pirated content. Opposition to SOPA stemmed from perceptions that because the bill was too broad and not written clearly, it was open to abuse by copyright holders, internet service providers, and the government. Sites like YouTube that unknowingly hosted pirated content could be shut down without giving owners a chance to defend themselves. Justin Ruben, executive director of MoveOn, stated:

> *"Congress is playing fast and loose with Internet censorship legislation that would have people like Justin Bieber thrown in jail for uploading a video to YouTube. The Internet censorship legislation could severely restrict free speech, and put a stranglehold on one of the most innovative, job-creating industries of our time"* (cited by Ngak 2012).

As apparent from the timeline in Figure 2, the SOPA movement mobilized quickly, killing the bill in less than three months. Below, we first describe our investigative methods. We then describe the landmark and transformative events leading up to the legislative tabling of SOPA.

Figure 2: SOPA Timeline
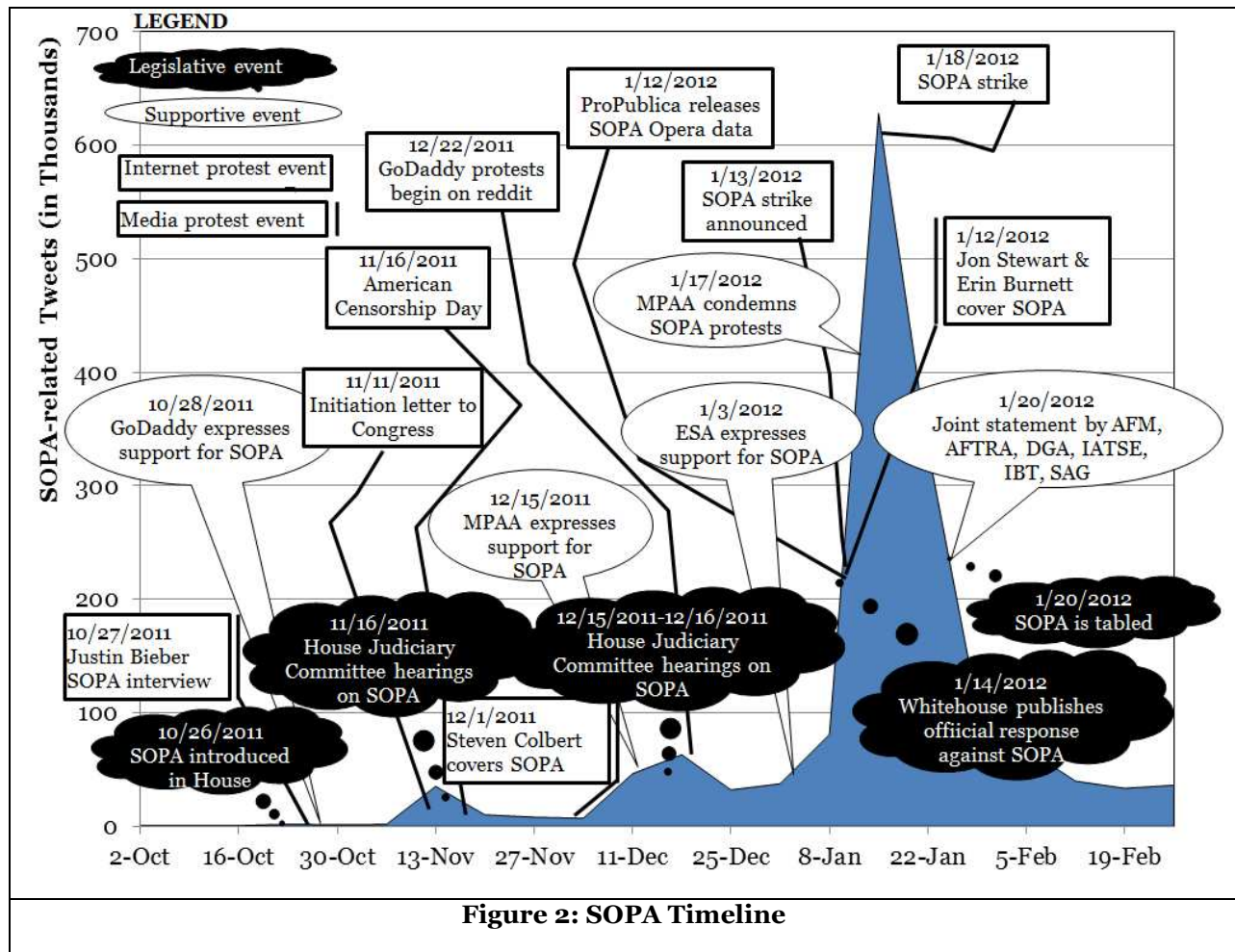
Methods

We performed an online search for influential actors in the SOPA protests. To ensure that we had a thorough understanding of protest events and the range of protest tactics employed, we then developed a sample of 23 organizations and sites that contributed to the protest, taking care to sample key players from activist, internet, and gaming organizations. The key players were identified by the crucial role they played in the SOPA movement, and the public involvement they garnered. Two authors researched each organization, maximizing information capture and minimizing potential interpretative biases. Sources included official and personal websites, press releases, articles, tweets, and videos containing information about ways in which each actor participated in the protest. The culmination of this research was two independent narratives for each organization/site studied. We were mindful of Golden-Biddle and Locke's (2007: 5) admonition to both describe key events and uncover "the potential storylines that explained the turn of events" while developing these narratives. We generated a total of 664 pages of narrative by collecting articles, links, text, pictures, and screenshots from the sources we mentioned above. We then read these narratives, identified the key players and events, and discussed the role of the organizations, and the development and outcomes of major events, in order to surface the major insights reported below.

Finally, to assess the impact each actor studied had on the SOPA movement, we examined the volume of tweets relating to SOPA archived at Topsy (http://topsy.com). In agreement with Twitter, Topsy indexes and archives all tweets, providing the most comprehensive tweet archive (Sullivan 2010; also private communication from Library of Congress representative). Consequently, it is being used as a data source in political science research (e.g., Kim and Park 2012). Topsy uses a proprietary robot to collect tweets from users with public privacy settings. While less than 20% of Twitter users have public privacy settings

(Madden 2012), limiting our assessment of actors' impact to Tweets emanating from public accounts does not jeopardize validity because those have broader visibility and impact than ones emanating from accounts with private settings. We identified the number of SOPA-related tweets that mentioned each actor studied for the weeks between 10/2/2011 and 2/26/2012. Descriptions of the organizations, narrative highlights, and the SOPA-related tweets mentioning each actor is provided in Table 1. (Narratives themselves are available from the authors upon request).

Table 1: Narrative Summaries and Actor Impacts	
Organization Description and Narrative Highlights	**Tweets**
Activist Organizations	
Electronic Frontier Foundation (http://eff.org) is a non-profit organization that seeks to defend privacy, consumer rights, free speech, and innovation on the internet. It provided several informational pages on SOPA, as well as an "action center" that enabled people to contact congress members.	33,420
Fight for the Future (http://fightforthefuture.org) is a non-profit organization focusing on individual freedoms and Internet users' rights. This organization played a key role in organizing the American Censorship Day, the SOPA Strike, and several anti-SOPA websites including freebieber.org and iworkfortheinternet.org.	12,821
MoveOn (http://moveon.org) blacked out its home page on 1/18/2012. In the days leading up to the blackout date, MoveOn published five articles on SOPA and explained the need for collective resistance.	1,498
SOPA Opera (http://projects.propublica.org/sopa) is a website created by Dan Nguyen, a developer for a non-profit news organization called Pro Publica. It presented congress members' position and public statements about SOPA, as well as campaign receipts from the media and internet companies.	2,686
Internet Organizations	
AOL (http://aol.com) has interests on both sides of the issue, so AOL's SOPA protest strategy was tempered. Yet, on the SOPA Strike day, Huffington Post, a news website owned by AOL, posted an article that proposed six ways to participate in the strike. Two other websites owned by AOL, namely TechCrunch and TUAW, also officially stated that they were against SOPA, but did not actively participate (i.e., blackout) in the protest.	28,764
Boing Boing (http://boingboing.net), actively promoted awareness of SOPA for months before the SOPA Strike. On 1/14/2012, Boing Boing announced the website would go dark on the 18th, SOPA Strike day. The blackout page provided a link to sign the petition against SOPA, as well as some links to informational websites.	6,720
Craigslist (http://craigslist.org) blacked out its U.S. sites on SOPA Strike day. Earlier that week, Craigslist also posted an informative banner about SOPA. Both the banner and the blackout page contained links to Craigslist's SOPA page, which had numerous links to news and informational sites on SOPA, as well as a link to Progressive Change Campaign Committee (PCCC) for calling members of Congress. According to Craigslist, over 40,000 Craigslist users placed calls on the SOPA Strike day. The informational page also pointed fingers at several brands that supported SOPA (e.g., Nike and Sony).	9,427
eBay (http://ebay.com) did not participate in the SOPA Strike, as originally planned. It did, however release an official statement regarding its position against SOPA.	1,939
Facebook (http://facebook.com) CEO Mark Zuckerberg posted an anti-SOPA message on his Facebook wall, but the company did not actively participate in the SOPA Strike. However, numerous Facebook users created events and community pages that were used for discussion and organization.	47,847
GoDaddy (http://godaddy.com) is a major domain name provider. It initially expressed support for SOPA in October 2011, after the bill was introduced in House. After losing 72,354 domains in one week as a result of the 12/22/2011 protest organized on reddit though, GoDaddy backed off its support on the 23rd and then expressed opposition to SOPA on the 29th after backing away from supporting SOPA did not suffice protesters.	88,861
Google (http://google.com) left the U.S. Chamber of Commerce after a dispute over their support of SOPA. On1/17/2012, Google posted an official anti-SOPA statement on the company blog, which had a link to a petition where people could add their names in opposition to SOPA. By the end of the day on the 17th, Google's petition had 3 million names. Then, on the 18th, Google redacted its logo and added the statement, "Tell Congress: Please don't censor the web!" which also linked to the petition website. By the end of the day on the 18th, over 7 million people had petitioned Congress through Google's petition. Google also slowed its indexing on the SOPA Strike day, in order to maintain the rankings of the websites that were protesting. Google also offered Google Chrome users an app that would notify them if they visited a SOPA supporter's domain name, enabling SOPA opponents to easily identify and boycott SOPA supporters.	55,639
LinkedIn (http://linkedin.com) did not actively participate in the protest, except by enabling groups and discussion boards.	1,129
Mozilla (http://mozilla.org) redirected users to an action page, where users were invited to voice their concerns. Mozilla estimates that approximately 30 million people in the U.S. saw their blacked out page,	38,950

Table 1: Narrative Summaries and Actor Impacts	
Organization Description and Narrative Highlights	**Tweets**
1.8 million people visited their informational page, and 360 thousand people sent emails to the members of Congress.	
Pinterest (http://pinterest.com) is an online pinboard that allows people to organize and share the material they found online, such as videos, screenshots, images, and infographics. Hundreds of users protested SOPA on Pinterest (e.g., SOPA Resources) by uploading blank, black, or censored images, as well as by posting infographics and screenshots from the websites protesting SOPA. As of 4/1/2012, there were 568 SOPA-related pinboards on Pinterest. Even though it did not actively participate in the SOPA Strike day, Pinterest tweeted "Join us & change your profile picture to protest SOPA" on 1/13/2012.	1,033
reddit (http://reddit.com) blacked out its homepage on the SOPA Strike day. The visitors encountered a message about SOPA and a link to further information about the bill and how visitors could take action to forestall it.	90,253
Tumblr (http://tumblr.com) was one of the first websites to protest SOPA. On the American Censorship Day, Tumblr censored user dashboards and posted a link at the top their pages, which prompted them to call their House Representatives. On 11/16/2011, Tumblr generated 87,834 phone calls. With a similar blackout page on the SOPA Strike day, Tumblr generated around 140 thousand more calls to the Congress.	17,851
Twitter (http://twitter.com) did not join the protest, but Twitter's CEO and co-founder tweeted SOPA messages. Twitter users also used the platform to protest SOPA. There were 741,379 #SOPA Tweets from 11/17/2011 to 1/17/2012 and 325,940 #SOPA Tweets on the SOPA Strike day.	31,894
The *Wikipedia* (http://wikipedia.org) community stated that if the SOPA bill passed, it would be devastating to the free and open web. Over 1,800 Wikipedians discussed what action to take against the bill. The proposed actions included a blackout (full vs. soft, US-only vs. global), displaying banners, blocking SOPA supporters, etc. The discussion lasted three days, and resulted in a full 24-hour global blackout. All Wikipedia articles were redirected to a blackout page starting from 23:00 CST on 1/17/2012. The blackout page included a brief message, a link to an informational page, and a tool to contact Congress representatives.	76,183
WordPress (http://wordpress.org) went offline on the SOPA Strike day. The official statement on the blackout page contained instructions for participating in the protest. Wordpress provided numerous plugins and widgets for its users to blackout or censor their pages.	15,035
Yahoo! (http://www.yahoo.com) did not actively participate in the SOPA Strike day. Yahoo! left the U.S. Chamber of Commerce as an expression of opposition. Flickr, a photograph sharing site owned by Yahoo!, participated in the protest by letting its users darken their photos.	3,072
Gaming Organizations	
Minecraft (http://www.minecraft.net) blacked out its home page on the SOPA Strike day. As of 3/16/2012there were over 750 Minecraft forums dedicated to SOPA-related issues.	4,565
Zynga (http://zynga.com) posted an official statement about their stance against SOPA on 1/18/2012, which contained links to informational websites. The official statement also contained some screenshots of SOPA messages embedded in Zynga's popular games.	2,130
News Media Organizations	
Wired (http://wired.com) joined the SOPA debate later than some tech organizations, but their protest tactics made a big impact because Wired provided cohesion to the protest and coordination between different protesting organizations. Wired chose not to black out on the SOPA Strike day, but the organization redacted certain content from the web page using black bars in order to graphically catch the attention of visitors as the site loaded. Despite the inconvenience of having to scroll over black bars to reveal the words underneath, visitors accessed stories and videos Wired posted denouncing the bill. Throughout the protest, Wired contributors updated information about the protest tactics others were using and urged even small organizations to join the protest.	11,408

Landmark Events

SOPA first came to the public's attention on 10/27/2011, when Justin Bieber expressed his opinion on the bill during an interview with radio host Kane on HOT 99.5, and stated that its legislator should be "locked up." However, SOPA did not receive much mainstream media coverage after this interview. Major media players such as ABC, CBS, MSNBC, NBC News, Fox News, and CNN supported the bill. In fact, from the date SOPA was introduced (10/26/2011) until the SOPA strike was announced (01/13/2012), major TV news outlets had mostly ignored SOPA during their evening broadcasts, with the exception of CNN's Erin Burnett on 01/12/2012 (MediaMatters, 2012). This is important to note because mass media has historically played a key role in widespread movement diffusion. Though the SOPA protests received limited coverage from popular television hosts Steven Colbert (12/1/2011) and Jon Stewart (1/12/2012),

key "culturally legitimated theorist" identified in the SOPA movement were Fight for the Future and Wikipedia. Despite the lack of traditional mass-media coverage, the cybermediaries were able to make most of the public aware of SOPA; a poll on January 10-12. 2012 showed that about 60% of likely voters were aware of the bill (IBOPE Zogby, 2012). Of these individuals, 68% opposed SOPA because it infringed on First Amendment rights, whereas only 19% said that SOPA was needed to protect intellectual property rights.

Four landmark events punctuated the SOPA protests. The first was the "initiation letter." Congress was scheduled to hold hearings on SOPA on 11/16/2011. Worried that Congress would pass the bill, making it difficult for them to continue operating, several web companies collaborated to write a letter to Congress opposing the bill. Although dated 11/15/2011, the letter was sent on 11/9/2011. The nine co-signers to this letter were AOL, eBay, Facebook, Google, LinkedIn, Mozilla, Twitter, Yahoo, and Zynga. Though popular TV channels did not cover this story, this open letter contributed to individuals' awareness of SOPA, by attracting coverage by online news and technology sites, personal blogs, and social media sites. This event did not initiate much SOPA-related buzz on Twitter.

The second landmark event was "American Censorship Day" on 11/16/2011, organized to coincide with the judiciary hearing on SOPA. Supported by groups like Electronic Frontier Foundation and Fight for the Future, the protesters aimed to draw attention to SOPA and pressure Congress representatives towards rejecting it, by calling the representatives, blacking out their webpages, or by simply spreading the word among their visitors and friends. The main organizer, Fight for the Future, reported that over 6 thousand websites participated, over two million people signed the petition, and the event generated 80 thousand calls to Congress. From our Twitter data (not depicted due to space constraints), we observed an elevation in SOPA-related buzz.

The third landmark event was the release of legislators' contact information and their SOPA positions vis-à-vis their campaign finance sources by ProPublica on 1/12/2012. This data, released on the SOPA Opera site, was critical for three reasons. First, it enabled the public to check whether their legislators were for or against SOPA. Second, it provided them with the contact information in case they wanted to speak to their representatives. Third, it highlighted the relationship between legislators' SOPA stance and their receipts of campaign funding from media versus internet sources, demonstrating incontrovertibly the link between campaign finance and legislator positions. Specifically, the data the site made available to individuals revealed that SOPA supporters had taken in significantly more campaign financing from the entertainment industry and SOPA opposers from the computer and internet industry ($p=0.0000$). While we noted a continued elevation in SOPA-related buzz on Twitter during this period, this might be attributable, in part to emergent discussions about the possibility of a SOPA-related "strike" event.

The fourth landmark event, the SOPA strike, took place on 1/18/2012. Organized once again by Fight for the Future, it was reportedly the largest online protest of all time: over 1 billion people were exposed to the anti-SOPA messages on this day; over 75 thousand websites participated in the strike. Among the most famous participants, Google redacted its logo (Figure 3A) and Wikipedia blacked out its homepage and all articles (Figure 3B). These and other participating websites directed users to informational pages on SOPA. The impact of this event on SOPA awareness was significant. People browsing the internet that day were forced to pay attention to SOPA, as most websites were either shut down or were protesting SOPA in another visible way. Wikipedia alone estimates that over 162 million people saw its blackout page. Before 1/18/2012, 3 million people had signed Google's petition; on the day of the strike over 4.5 million more people signed it.

Participation Risks and Costs

Actors weigh benefits of participating against the risks entailed in and the effort necessary to do so (Turner & Killian, 1987). Our observations of the SOPA movement point to the role technology in increasing perceived participation benefits by diffusing the anti-SOPA frame and in decreasing participation costs by providing participants with the capability to enact protest repertoires.

As noted earlier, movement participation entails two types of behaviors – inducing collective action from potentially-sympathetic others and persuading targeted systems of authority to change their position.

Participation occurred at two levels – at the organizational level and at the level of individual members of communities who were enabled by some of the internet organizations. Both risks and costs were salient to organizational participation; individual participation was mainly an issue of cost. Organizations faced two key risks: alienating existing or prospective shareholders and alienating community members or customers. Paul Tassi (2012) noted organizations' consideration of shareholder sentiments in Facebook's dis-inclination to observe the 1/18/2012 blackout because "they're still circling a possible IPO". reddit leadership acknowledged their concerns about alienating community members in their blog post recognizing that "support for a blackout isn't unanimous" and noting: "Blacking out reddit is a hard choice, but we feel focusing on a day of action is the best way we can amplify the voice of the community" (reddit 2012). Organizational exposure was most apparent with GoDaddy, which lost customers due to its initial pro-SOPA stance, even though it subsequently reversed this position in response to community protests. Organizational costs included time allocated to compiling information related to the SOPA legislation, considering the organization's response to SOPA, communicating with their communities and customers about that response, and developing and hosting protest tactics and capabilities.
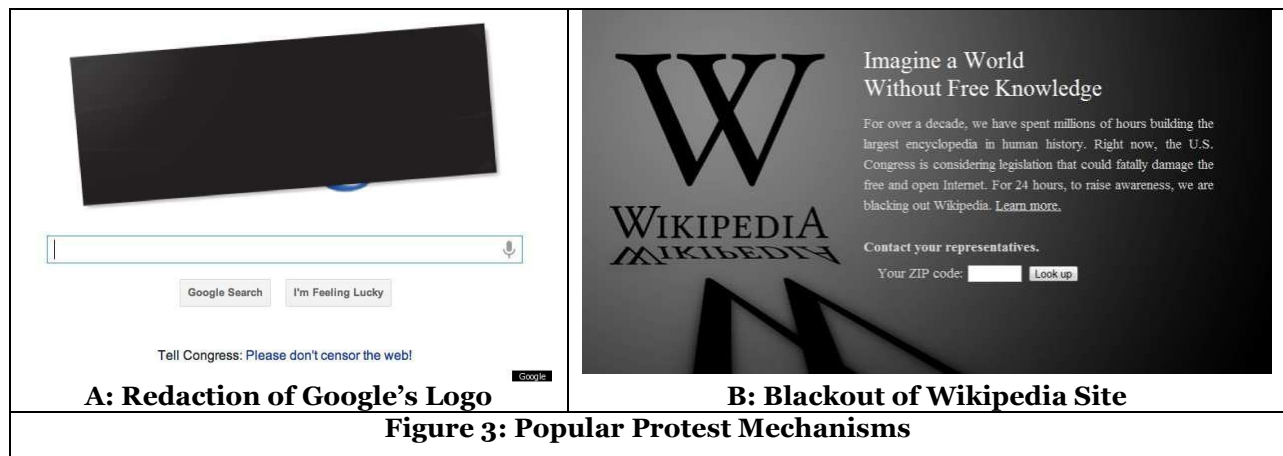

A: Redaction of Google's Logo	B: Blackout of Wikipedia Site

Figure 3: Popular Protest Mechanisms

Risks associated with individual-level participation were negligible. Unlike more restrictive societies where blogging carries a threat of imprisonment or worse (PITPI, 2012), Americans enjoy considerable security under our prevailing principles of freedom of speech and expression. Further, because SOPA issues discriminated among organizational, not individual, interests, individuals speaking out regarding SOPA were unlikely to personally offend – and therefore incur the risk of retribution – from other individuals. Cost, in the form of time, was an issue for individuals though, for each form of participation – inducing others to participate and lobbying their legislators. The movement's challenge therefore was to highlight participation benefits and reduce participation costs. Absent mass media coverage and mobilization through embedded ties over time, the role of the internet was key.

Production of Culture: An Alternate Conceptualization of Diffusion

Movements utilize different types of resources – material resources such as money and physical space, human resources such as unskilled worker time, specialized skills, and leadership, organizational resources, moral resources such as legitimacy and solidarity, and cultural resources (Snow & Soule, 2010). While other types of resources are important to movements, cultural resources are key because of their ability to influence action (Swidler 1986). They do so by shaping values and repertoires (Swidler 1986).

In this section, we suggest that the SOPA movement success attained from cybermediaries' production of cultural resources – specifically production of displayable frames and enactable tactics. Displayable frames targeted prospective movement recruits' values and enactable tactics supplied action repertoires. Such cultural production was done by "cybermediaries" that supplemented the largely-absent mass media in movement diffusion. Cultural productions of frames and tactics are summarized in Table 2. The Table also depicts the relative impact each actor had on mobilizing attention for SOPA based on Twitter data. To account for disparities in general attention each actor garners, the number of SOPA-related Tweets mentioning each of the organizations was divided by the total number of Tweets mentioning that

organization for the period between 10/2/2011 and 3/3/2012. The last column therefore provides an estimate of an organization's SOPA impact relative to its possible impact.

Organization	Frame Displays			Tactic Enactments		% of Tweets
	Verbal	Graphical	Experiential	Use	Diffuse	
Activist Organizations						
Electronic Frontier Foundation	③④	⑧		⑮⑰⑲	⑳	5.03%
Fight for the Future	③④⑦	⑧⑩		⑮⑰⑲	⑳❶	5.10%
MoveOn	③	⑧	⑬	⑰	⑳❸	0.29%
SOPA Opera	④	⑧		⑰	⑳	85.97%
Internet Organizations						
AOL	⑤					0.37%
Boing Boing	⑥⑦	⑧⑨⑩	⑬	⑮⑰	⑳❸	1.92%
Craigslist	④	⑧	⑬	⑱		0.19%
eBay	⑤⑦					0.11%
Facebook	②⑤⑥⑦	⑨			⑳❸	2.03%
Google	②④⑤⑦	⑧⑨⑩		⑮⑰	⑳❸	2.92%
LinkedIn	⑤				❸	0.04%
Mozilla	①④⑤⑥⑦	⑧	⑬	⑰⑱	⑳❷❸	2.10%
Pinterest	②③④⑦	⑧⑨⑩	⑫	⑰	⑳	0.15%
reddit	②④⑦	⑧⑩	⑬	⑮⑰⑱	⑳⓿❸	4.40%
Tumblr	①③④⑦	⑧	⑫⑬	⑰⑱	⑳❸	0.91%
Twitter	⑤⑦				❸	1.92%
Wikipedia	③④⑦	⑧	⑬	⑰	⑳❸	4.54%
WordPress	①④	⑧⑩	⑬	⑯	⓿❸	0.44%
Yahoo	①⑤	⑧			❸	0.15%
Gaming Organizations						
Minecraft	⑥	⑧⑩	⑬⑭		❸	0.32%
Zynga	①⑤⑦	⑧			⑳	0.23%
News Organizations						
Wired	③④⑦	⑧⑨⑪		⑰⑱	⑳❸	0.25%

Legend: ①Blog ②Community pages ③Informational articles ④Informational webpages ⑤Initiation letter ⑥Social media posts by executives ⑦Official statements ⑧Infographics ⑨Redaction ⑩Videos ⑪Interactive redaction ⑫Censored dashboards ⑬Blackout ⑭SOPA games ⑮Petition link ⑯Platform for designing plug-ins and widgets ⑰Platform for research ⑱Platform to call legislators ⑲Platform to email legislators ⑳Information sharing tools ⓪Platform for sharing plug-ins and widgets ⓿Provided blackout code ❶Provided censoring code ❷SOPA add-ons ❸Platform for discussion

Table 2: Internet-based Cultural Productions through the SOPA Movement

Dis-intermediation and Cybermediation

While movement researchers have noted the key role played by mass media in movement diffusion, media researchers have noted the tendency for mass media to render audiences spectators of rather than participants in public affairs (Gamson et al. 1992). In contrast, researchers are noting the ability of the internet to mobilize collective problem solving for corporate (Howe 2006) as well social problems (e.g., McGonigal 2011). The device through which this occurs is cultural production.

The internet has been found to lower costs of development and diffusion of shared meanings in the area of industry standards (e.g., Markus et al., 2006). It has begun to replace mass-media-based cultural arbiters (Castells 2007). For example, would-be musicians can now post their efforts on YouTube, dis-intermediating shows such as American Bandstand; Flixster provides moviegoers access not only to

"critics" ratings, but also those of the movie-going public. A Pew report noted that the internet bypassed television as the preferred news source for younger demographics (Kohut et al. 2011). Traditionally, mass media has mediated culturally-legitimated theorists and lay individuals. Castells (2007) predicted that the internet, as a "self-communication" medium, would dis-intermediate this relationship. We found that instead of replacing mass media, the internet served as a platform for emerging cybermediaries. Cybermediaries complemented mass media, providing individuals with access to a greater quantity and diversity of diffusion channels. The diversity of diffusion channels enabled by the Internet provides its users with a variety sources that can be checked against others. Diverse diffusion channels ensure that anomic versions of political reality do not dominate public discourse (Kornhauser, 1968), and can lead to renewal in the public sphere (DiMaggio et al. 2001). Cybermediaries play a key role in diffusion of not only information, but also political frames and protest tactics. As diffusion channels, cybermediaries perform activities traditionally left to mass media, such as the production of culture.

Figure 4: A New Model of Social Movement Diffusion
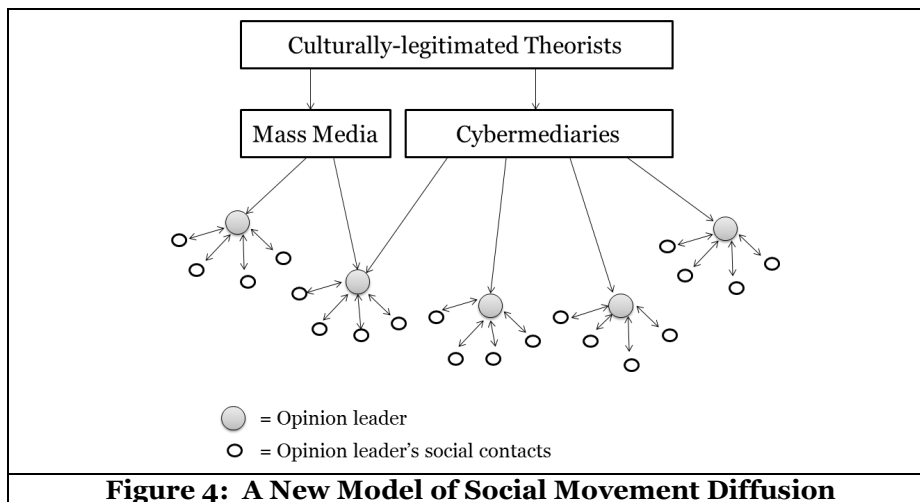
Clearly, cybermediaries represented what van Wijk and colleagues (forthcoming) called "cultural brokers" in the SOPA movement, engendering field change by appropriating, disseminating, and innovating upon memes for representing frames and enacting protest tactics. By increasing the variety of channels through which the SOPA frames and tactics could be diffused, cybermediaries increased the incidence of imitation and variation of the memes for representing frames and enacting tactics. This fostered the rapid evolution of the memes, contributing to the fitness of the SOPA movement, and enhancing the movement's survival.

Proposition 1: The internet reduces the importance of mass media and provides a platform for multiple cybermediaries, increasing the number of intermediaries through which information can be diffused and protest-related culture can be produced.

Displays of the Movement Frame

The movement frame was that SOPA would censor the internet. This frame countered the bill's position of protecting intellectual property rights. Relative to human rights, for example, intellectual property rights is an abstract principle that does not easily resonate with the general public. Thus, diffusing the movement's counter-frame to the SOPA frame proffered by the authoring legislators was a challenging task. Further, in contrast to earlier internet movements that weighed the interests of a single powerful actor (e.g., Lotus or Yahoo!) against those of many individuals on issues outside the political arena, this movement pitted the interests of one set of powerful actors (media companies) against those of another set of powerful actors (internet companies), mediated by the political system. And media companies had no interest in facilitating diffusion of the movement frame. We attribute the SOPA movement's success, in part, to its efficacy in producing and disseminating culturally meaningful *graphical* representations and *experiences* of the movement's frame, rather than relying on *verbal* representations alone.

Verbal frame representations included the initiation letter and other official statements, e.g., press

releases, and informational pages on websites. For example, Zynga's official statement read:

> *While we support the goal of stopping foreign web sites from engaging in copyright infringement, we believe there are more effective and targeted ways to deal with these problems without censoring the Internet. The overly broad provisions we've seen in the pending SOPA … could be used to target legitimate US sites and freeze innovation at a time when it is needed most.*

Graphical representations of the protest frame included redacted texts/logos, photographs such as people with duct tape over their mouths and Justin Bieber behind bars, and videos. In addition, the infographic, a hybrid verbal and graphical representational device, was widely used in diffusing the SOPA frame. The experience of censorship was created by blacking out sites on 1/18/2012, the designated "SOPA Strike" day. The censorship meme evolved throughout the anti-SOPA movement, taking various forms ranging from small redaction bars to black screens. In cases such as Wired, the censorship meme went further than being a graphical gimmick to functioning as an interactive blackout. Site users could access redacted content by scrolling over words individually. In both graphical and experiential frame representations, color played a significant role. The Wikipedia community, for example, explicitly debated the role of color in the blackout site's design in user forums:

> *The "light" version is closer to the current Wikipedia design and would be less shocking. The "dark" version is more symbolic (an encroaching darkness)…*

Website color can trigger affective reactions in their users (Conway et al. 2010). This understanding was reflected in the following community member comment: "For a blackout, the tone and mood should be dark, not light." That members were cognizant of the effect of their color choice on movement framing was evident from comments such as: "Visually communicates the severity of the situation"; "The shadow design is more meaningful when the page is threatened to be engulfed by darkness"; "The dark background brings attention to the message." Researchers have also noted that the color black is associated with aggression (Webster et al. 2011). Again, understanding of the relative power of black was reflected in member comments, e.g., "The darker version has a stronger tone on the mind to get up and do something, i.e., call one's congressmen."

Creating visual representations of a protest frame is not new. Such a visual representation was apparent in the "shantytown protests," organized by university students across the U.S. between 1985 and 1990 to drive U.S. firms to divest from apartheid South Africa (Soule 1997). The protest tactic, consisting of re-constructed South-African-style shanties on the tidy landscapes of university campuses, revitalized the divestiture movement, which had been in existence since the early 1960s. By visually drawing "attention to the poor living conditions of black South Africans," it highlighted "the immorality of the system of apartheid" (Soule 1997: 872). Similarly, actors in the SOPA movement harnessed internet capabilities to graphically represent the protest frame. In addition to the more conventional uses of photographs, videos, and color, the hybrid infographic played a substantial role in disseminating the protest frame. The majority of sites studied provided an infographic, the most widely-disseminated of which was the Pro Publica real-time representation of one element of the protest frame – the anticipated outcome (Benford and Snow 2000). By depicting legislators' changing positions, the Pro Publica site, SOPA Opera, mobilized the movement by charting its ongoing successes. In combining real-time data with text, graphics, and photographs for its production and relying on technology for its dissemination because its size typically defies printing, the infographic is a quintessentially technological protest device.

Each organization in Table 2 provided verbal representations of the facts underlying SOPA and the movement's frame via the initiation letter and/or statements on their websites. A majority of sites also provided graphical (i.e., visual) representations. Experiential representations, however, are more novel. In non-virtual social movements, protesters frequently employ illegal means such as kidnapping to force oppressors or the uninitiated to experience their protest frame (Taylor and Van Dyke 2004). A subtler, virtual example of an experiential representation of the protest frame is protest games. Minecraft diffused its SOPA frame to gamers by embedding SOPA messages within internet games on the SOPA Strike day.

What are the consequences of using the different frame representations? Table 2 notes the relative impacts of the different frame representations. Discounting SOPA Opera, a site specific to the SOPA movement, we note that within each category of actor, while verbal representations permit detailed and nuanced descriptions of the protest frame, organizations that provided verbal representations alone tended to have the lowest impact on raising SOPA awareness; those that also provided a graphical

representation had a higher impact; those also providing an experiential representation had the greatest impact. The most visible experiential representation of the censorship frame was Wikipedia's participation in the 1/18/2012 blackout. While many of the internet and social media resources provided by the organizations sampled target the tech-savvy, Wikipedia is a resource with a broad base of appeal. So its blackout greatly elevated SOPA awareness, as evident in Wikipedia commanding almost 10% of SOPA-related tweets for the week of 1/18/2012, and SOPA engendering the highest proportion of its buzz of any of the internet organizations (Table 2). This leads us to the following proposition:

Proposition 2: Cybermediaries that harness technology to verbally, graphically, and experientially represent protest frames will have a greater impact on mobilizing movements than cybermediaries who only represent the frame verbally and/or graphically.

Enactments of Protest Tactics

Enactment of protest tactics came in two ways: tactic use and tactic diffusion. Tactic use occurred when cybermediaries used technology to disseminate information about the SOPA protests and enable their users to participate in the protests while visiting the cybermediary's website. Examples of tactic use included platforms for users to email legislators, sign online petitions, research SOPA, and call legislators through PCCC. For example, Tumblr provided a link that connected users to a pre-recorded phone call from Tumblr CEO David Karpand, who ran individuals through SOPA-related talking points; users were then automatically connected to their Congress representatives. This tool alone generated over 140 thousand phone calls to the Congress. Similarly, Wikipedia enable users to lookup contact information for their Congressional representatives. Wikipedia estimates that over 8 million people used this tool on 1/18/2012. In addition, organizations such as Minecraft, Facebook, reddit, and Wikipedia enabled their users discuss SOPA and organize on forums or community pages. Such tactic use made it easier for individuals to participate in the protest, decreasing efforts entailed in discussing SOPA issues with peers and looking-up their legislators' contact information to petition them about SOPA.

Tactic diffusion occurred when cybermediaries provided toolkits for users to protest SOPA at *other websites*. A key toolkit diffused was protest-related code. Wordpress users, for example, posted 21 different plugins that enabled other users to black-out their Wordpress sites or add a protest banner or ribbon to their sites. Facebook users shared JavaScript code to enable other users to automatically invite all their Facebook friends to SOPA-related Event pages. Organizations such as Wordpress and Facebook contributed to these efforts by offering platforms for individual users to share the plug-ins and widgets. Finally, fundamental features of social media platforms such as Disqus, Facebook liking, Google 1+ sharing, and retweeting could be appropriated for information sharing.

As with frames, the unit of tactic toolkit diffusion was memes. Rapid iteration of tactic toolkit memes was evident in communities such as reddit and Wordpress, where users created and shared anti-SOPA programs and templates, built upon and improved each other's work, often by simply changing a picture caption. The number and variety of memes available permitted a greater variety of possible re-combinations into new memes. Meme-hosting site Know Your Meme (http://knowyourmeme.com) hosted over 100 are SOPA-related memes and Meme Generator (http://memegenerator.net) hosted around 300 SOPA-specific templates. The memes users created using these templates both informed the public, and encouraged people to take action against SOPA (e.g., One meme read "Move all the domains!", encouraging people to protest GoDaddy). Besides being shared on Facebook and Twitter, most of these memes were also tagged and grouped on SOPA-related pinboards on Pinterest, which helped them reach far beyond their original audience (i.e., reddit users), and the ease and speed of their transmission enabled more protesters to build on each other's work in developing protest tactics.

A key mode of tactic diffusion we witnessed was crowdsourcing. Crowdsourcing was especially effective because the social aspect of creating and sharing technology toolkits mobilized protesters, not as individuals, but as teammates playing a game together. Gaming approaches are being noted as effective in crowdsourcing large-scale problems:

> *"Gamers are more likely than anyone on the planet to contribute to an online crowdsourcing project. They already have the time and the desire to tackle voluntary obstacles. They're playing games precisely because they hunger for more and better engagement. They also have proven computer skills and an ability to learn new interactive interfaces quickly. And if they're playing*

games online, they already have the necessary network access to join any online project and start participating immediately" (McGonigal, 2011: 222-223).

Thus, mobilizing protesters by providing them not only capabilities to protest, but also to mobilize others within their network, increased protesters' engagement levels. This, in turn, expanded the sphere of cybermediaries' impact in developing awareness of and mobilizing resistance to the SOPA legislation. Thus, from Table 2, we note a relationship between tactics used and diffused and organizations' SOPA-related impact.

Proposition 3: Cybermediaries that provide capabilities for others to mobilize participation, in addition to directly enabling participation, will have greater impact on mobilizing movements than cybermediaries who only provide capabilities for participation.

Conclusions

Our analysis of the SOPA movement has the following implications for the study of online movements. First, it suggests the internet need not be viewed as just an overlay to pre-existing social structures that get mobilized by local groups' opinion leaders, whose opinions, in turn were formed by exposure to mass media. Rather, our analyses suggest the formation of online collectives is dynamic, with opinion leaders, at least here, being leaders of internet organizations that engaged potentially unconnected individuals in and around their use of the organizations' internet technology. Such organizations therefore assume the role of cybermediaries that supplemented – if not replaced – mass media, previously believed to be the bastion of large-scale movement diffusion. The emergence of cybermediaries has also changed the way protesters organize. According to Wired magazine, "The new revolutionaries are networked, mobile, and coming to a city near you." Notable too is the fact that the direct impact of many non-activist organizations studied exceeded that of activist organizations, supporting Castells's (2007) belief in the internet's ability to foster engagement by the general public.

As Margaret Mead famously put it, "Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it's the only thing that ever does." For this reason, it is important to consider whether a small group of citizens used the Internet to shape policies in a way inconsistent with the will of the majority. In this case, polls (IBOPE Zogby, 2012) showed that the majority of Americans were opposed to SOPA even before SOPA Strike Day. Thus, the Internet was used to give the majority a voice in a fight once dominated by a few, powerful corporate interests. In fact, it is possible, if not usual, for traditional mass-media to voice the interests of powerful corporations in similar situations (McCarthy et al. 1996), even though they might not constitute the majority. What we observed in the SOPA movement confirms that the Internet can actually extend the breadth of participation (Miranda and Saunders 2003), level the battlefield, and prevent the loud minority from overpowering the silent majority.

The critical role played by cybermediaries was in cultural productions: production of artifacts that represented the movement's frame verbally, graphically, and experientially, and of toolkits that fostered enablement of protest, i.e., use of protest tactics on the protesting organization's site, and enablement of protest mobilization, i.e., provision of toolkits to be used on visitors' sites. This insight resonates with Leonardi's (2011) observation that technology is implicated in cultural production rather than is a product of culture. It also augments it by analytically separating ideological frames represented by technology from technologically-produced and delivered toolkits that foster and shape action.

Our analyses highlighted ways in which technology can be leveraged toward socio-political engagement of publics. Future research needs to inventory specific technology features that correspond to graphical and experiential representations, and to production of tactics that can be emulated and distributed. Such work can be informed by and contribute to emerging research on the role of gaming and virtual realities on engineering social change (e.g., McGonigal 2011).

Acknowledgements

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