Communication
Theory

Fifteen:
Four

November
2005

Pages
365–388

Bruce Bimber
Andrew J. Flanagin
Cynthia Stohl

Reconceptualizing Collective Action in the Contemporary Media Environment

Collective action theory, which is widely applied to explain human phenomena in which public goods are at stake, traditionally rests on at least two main tenets: that individuals confront discrete decisions about free riding and that formal organization is central to locating and contacting potential participants in collective action, motivating them, and coordinating their actions. Recent uses of technologies of information and communication for collective action appear in some instances to violate these two tenets. In order to explain these, we reconceptualize collective action as a phenomenon of boundary crossing between private and public domains. We show how a reconceptualized theory of collective action can better account for certain contemporary phenomena, and we situate traditional collective action theory as a special case of our expanded theory.

Theories of collective action are integral to explanations of human behavior. Collective action perspectives have been applied to a great array of diverse phenomena, including social movements (Tarrow, 1998), voting behavior (Acevedo & Krueger, 2004; Downs, 1957), membership in interest groups (Berry, 1984; Olson, 1965), the operation of the NATO alliance (Olson & Zeckhauser, 1966), establishment of electronic bulletin boards (Rafaeli & LaRose, 1993), formation of interorganizational relationships (Flanagin, Monge, & Fulk, 2001), and bidding behaviors on eBay (Kollock, 1999). This range of actions accounted for by collective action perspectives illustrates the centrality of this body of theory to social science.

Recently, an array of actions in which technologies of information and communication are central has proven theoretically and empirically intriguing from a collective action standpoint. Self-organizing online groups, rapidly assembled networks of protesters, "meet ups," new struc-

tures for interest groups, and "viral" e-mail lists are all examples of collective behaviors employing advanced communication and information technologies. Such collective endeavors have stimulated debates about theories of collective action, prompting questions of whether collective action deeply reliant on the Internet and other new technologies is as effective or successful as collective action in more traditional modes (Bimber, 2003; Norris, 2002). Examples of both successful and unsuccessful Internet-based collective action are available, and research has now begun identifying aspects of the collective action process that can succeed online, as well as shortcomings and disadvantages of online collective action (McCaughey & Ayers, 2003).

A related line of theoretical inquiry has asked to what extent the traditional collective action paradigm is even appropriate for explaining certain contemporary phenomena. As Lupia and Sin (2003) have pointed out, collective action theory was developed in a time when key communicative possibilities now common in public life were impossible to imagine. As a result of emerging information technologies, communication is not necessarily as costly, difficult, time consuming, or limited by the cognitive constraints of individuals as it once was. The availability of advanced tools of communication and information has prompted a reassessment of collective action theory, shedding light on the benefits and important costs for successful contemporary collective action efforts. For example, Lupia and Sin (2003) have argued that communication technologies show at least one element of Olson's (1965) collective action theory to be simply wrong, namely his controversial proposition that small groups are more successful than larger ones.

In our assessment, scholars should be asking not only whether examples of contemporary collective action fit the theoretical requirements for success, but also whether the theoretical ideal fits the rich array of collective actions now present in public life. In this article we pursue this question. Our goal is not simply to develop corollaries to traditional theory that can encompass new behaviors or to enumerate advantages and disadvantages of online activism. We argue instead that new forms of collective action reliant on certain technologies illuminate several fundamental aspects of all collective actions that so far have remained theoretically obscure.

We advance a model that reconsiders two foundational aspects of collective action: (a) the binary choice to participate or not and (b) the role of formal organization. We argue that traditional collective action theory represents an important subset of a broader range of theoretical possibilities—a subset that applies under certain conditions that were ubiquitous historically but that are no longer universally present when

collective action occurs. Based on this, we reframe collective action as a set of communication processes involving the crossing of boundaries between private and public life.

To accomplish this, we first outline traditional collective action theory, focusing on the problem of free riding and the need for building formal organization. Second, we consider some of the challenges to this theory presented by contemporary technological capabilities. Finally, we reframe collective action in a new way that subsumes the free-riding logic and the organization-building phenomenon under the larger concept of private–public boundary spanning, which we argue has broader explanatory power.

Collective Action Theory and the Realization of Public Goods

Collective actions, or those "actions taken by two or more people in pursuit of the same collective good" (Marwell & Oliver, 1993, p. 4), are typically framed as resulting in some shared outcome, or "public good." Public goods are nonexcludable, meaning that relevant entities cannot be excluded from enjoyment of the public good, regardless of their own contributions to its provision (Chamberlin, 1974; Head, 1972). They are also nonrival, in that one's use or consumption of the good does not reduce the amount available to others (Barry & Hardin, 1982; Hardin, 1982), although few goods are perfectly nonrival. In addition to traditional physical goods, such as parks, bridges, or libraries (Marwell & Oliver, 1993; Olson, 1965; Samuelson, 1954), and political goods such as public policies or election outcomes that affect all the members of a constituency or polity, public goods may also take less tangible forms, including databases of information and communication systems (Connolly & Thorn, 1990; Fulk, Flanagin, Kalman, Monge, & Ryan, 1996; Markus, 1990; Rafaeli & LaRose, 1993).

Of particular theoretical interest are those public goods produced by the collective action of two or more people rather than by the individual action of a resource-rich actor contributing alone, as in the case of a single large donation of money for a park. The dynamics of such collective actions have been elaborated in considerable detail in the literature, which suggests, for example, that obstacles to initiation of public goods arise because early contributors to collective actions enjoy smaller marginal rates of return in the early stages of public goods provision (Markus, 1990; Marwell & Oliver, 1993), and once public goods are established, early contributors receive benefits that are only equal to those of the other participants (Oliver, Marwell, & Teixeira, 1985).

Two of the central elements of traditional collective action theory are the problem of "free riding" (Hardin, 1968; Olson, 1965; Sweeney, 1973) and the importance of formal organization as one means to overcome it (Olson, 1965). These elements turn out to be key to the theoretical challenges presented by new uses of information and communication technologies in collective action.

Free-riding and Discrete Participation Decisions

The essence of free riding is a discrete decision by potential participants as to whether or not to contribute to the provision of a public good or just to take advantage once it is established by the actions of others. Although many variants on this decision can be identified—including decisions to wait and see, to contribute more or less, to make participation contingent on some factor—the basic free-riding concept rests on what can be reduced to some form of a binary decision: contribute or free ride.

Disincentives to contribute in the early phases of collective action are particularly strong for many types of public goods because returns to early contributors are deficient: Early contributors must invest in the absence of investments by others and thus receive little direct, immediate benefit from their contributions. In essence, the incentive system rewards each participant for waiting until others contribute. Consequently, the public good is not created unless there are some especially interested and resource-rich participants who are willing to pay the substantial start-up costs without receiving corresponding benefits.

Scholars have emphasized the importance of the provision of selective incentives to help overcome the temptation to free ride (Clark & Wilson, 1961; Olson, 1965). Selective incentives (e.g., material goods, financial rewards, moral feelings of altruism, solidarity with desirable others) have been proposed to alter individuals' participation calculus by bolstering the benefit side of cost–benefit analyses and by tipping decisions toward participation (Oliver, 1980; Olson, 1965). In this manner, selective incentives provide private and excludable benefits enjoyed only by participants.

The Importance of Formal Organization

Many of the largest obstacles to collective action efforts are communicative and organizational in nature: locating and contacting appropriate participants, motivating them to make private resources publicly available, persuading them to remain involved despite short-term setbacks and long-term risks, and coordinating their efforts appropriately. Accordingly, dependence on organization is central to Olson's (1965) original theory. He has used the term "latent group" to describe collections of individuals with common interests in a public good but without the organizational structure to solve communication and coordination problems, and he has argued that "most (though by no means all) of the

action taken by or on behalf of groups of individuals is taken through organization" (Olson, 1965, p. 5).

Costly communication and coordination tasks are often understood as the domain of some kind of formalized organization. In the case of interest-group–based collective action, formal organization may conform quite closely to a Weberian archetype, with a vertically integrated structure, command and control decision making at the top, highly differentiated roles, and a high value placed on institutional maintenance. In the case of some social-movement–style collective action, organization may be less formal but often still exhibits leadership structures, the accumulation and deployment of resources by some body or bodies of decision makers with differentiated roles, and some degree of boundedness.

Technological Change and the Evolution of Collective Action Theory

For several years researchers have been reporting instances of collective action employing new technologies of communication and information that appear to depart from some of these expectations of traditional theory, especially where discrete free-riding decisions and the role of organization are concerned. Many of the technologies of interest in these apparently novel collective actions revolve around the Internet: electronic mail, the Web, chat rooms, weblogs, bulletin board systems, and the like. They also extend, however, to other, related technologies: databases, portable computing and communication devices, and mobile phones, to list a few examples. We collectively refer to these as technologies of communication and information because specific artifacts are increasingly merging and growing interdependent. For instance, many people—a majority of those online in Japan, for example—use the Web through cellular phones. Similarly, voice calls are increasingly made over the Internet. For these reasons, attempting to maintain a distinction between the Internet and telephony, or between information technology and communication technology, is not always fruitful.

Uses of such technology in novel collective actions have been reported in many contexts around the world, from Indonesia to the Middle East (Kalathil & Boas, 2003; McCaughey & Ayers, 2003). For example, accounts have recently emerged indicating that text messaging is being used in Iraq to create an alternative reporting mechanism for criminal activity that transcends the police and untrusted authorities (Arieanna, 2005). Using text messaging, Iraqis discretely report crimes to trusted sources while shielding their identities and protecting themselves from being identified as informants. In this case, the public good promoted by collective action is increased social order and enforcement of law.

In other cases, collective action involving new technologies is directed at changing public policy or political outcomes, as in the case of protests and demonstrations. One prominent example was the 1999 "Battle in Seattle," in which a far-flung network of groups from several nations interested in everything from human rights to the environment to women's issues used e-mail, the Web, and chat rooms to engage in a largely self-organizing protest against the policies of the World Trade Organization (WTO; Bimber, 2003; Kahn & Kellner, 2004). This instance of collective action involved a loosely coupled network without central financing or a fixed structure for leadership, decision making, and recruitment. Instead of these traditional features, the network employed low-cost communication and information systems to focus attention on the objective of protesting the WTO meeting and to sustain practices of self-joining and horizontal coordination. As one participant in preparations for the event reported, "Right now, every time we do an action, we send out an e-mail and a hundred people show up. It's like magic. We couldn't do it without e-mail" (Bullert, 2000, p. 4).

The International Campaign to Ban Landmines (ICBLM) also illustrates the use of new communication technologies, the hybrid nature of organizing structures, and the loose coupling that is integral to many cases of contemporary collective action. In the early stages of the campaign, activists relied heavily on the fax machine to communicate with potential coalition members, and its relative newness seemed to make faxed messages "exciting," more important, and more deserving of a rapid response (Williams, 1999). Only when the ICBLM broadened its focus from the industrialized states, where land mines were made, to the nations where land mines were used, did they shift to sending less costly e-mail messages. Moreover, no matter what technology was used to enhance connectedness, communication was complemented by face-to-face interactions and emergent personal networking. Williams noted that "a core strength of the Campaign, which still seems to be ill understood by many, has always been its loose structure. There has been no central secretariat. No central office . . . there has never been an overarching bureaucratic campaign structure" (1999, unpaginated source).

As the case of the ICBLM suggests, it is important to note that uses of technology for collective action are not confined to one-shot events. These technologies appear in various sustained social movements, such as the Zapatista effort in Mexico. In that case, insurgents in Chiapas were able to deliver messages to allies who then circulated accounts of the struggle internationally through the Internet, evading strong state control over traditional media within Mexico and facilitating a suprastate movement in support of the group. This sustained effort began in 1994 (Ferdinand, 2000).

The literature describing cases such as these is now substantial. A first generation of work largely demonstrated that collective action was possible "on line" (Bennett & Fielding, 1999; Gurak, 1997). More recent work has described advantages and disadvantages of online collective action, with an increasing focus on the problem of identifying the circumstances under which such efforts are likely to be successful or are likely to fail (Bennett, 2003; Bimber, 2003; McCaughey & Ayers, 2003; Tilly, 2003). A larger, overarching problem is increasingly becoming apparent in this literature: Many cases of technology employed in collective action appear to strain the explanatory capacity of traditional collective action theory, if not outright violate one or another tenet. Specifically, in many cases, the classic binary free-riding decision metric is not obvious—such as in the posting of publicly useful information online and participating in various groups and public forums in which people's useful contributions emerge from an interactive process rather than the explicit pursuit of a goal. In other cases, the pursuit of collective action occurs either completely or largely in the absence of formal organization. The World Trade Organization protest and the global anti-Iraqi war marches in February 2003 are examples. To resolve this tension, we examine these phenomena in the contemporary media environment in order to discern the relevant theoretical mechanisms at work.

The Nature of Free Riding in the Contemporary Media Environment

Use of technology is creating a human environment that is increasingly rich in information and communication. In situations in which information is widely distributed, having the means to gather and store dispersed data is crucial to taking full advantage of information resources. *Communality* refers to the public good that is derived from successfully collecting, storing, and sharing such information resources among members of some public (Fulk et al., 1996). Communality is powerful: It effectively eliminates the need to predict in advance who may benefit from one's knowledge; it provides information and expertise gained by others, thus eliminating the need to experience phenomena firsthand; and it highlights the advantages of aggregated information resources, whose value can greatly exceed the sum of the parts.

Many communal information goods are discretionary, inasmuch as participants make a discrete decision whether or not to contribute to the collective information repository and success depends on garnering extensive contributions (Connolly & Thorn, 1990). Examples include such diverse phenomena as information supplied by real estate agents to the multiple listing service (MLS) database, knowledge supplied to organizational or institutional "lessons learned" databases that stems from individual experiences, and personal information supplied by individu-

als to a dating service. Collective action theories describe contribution processes to these goods quite effectively: No one member or small subset can provide the information good for all others, only widespread contributions may secure the communal public good, and free riding on the efforts of others is a threat to realization of that good (Fulk et al., 1996). In these cases, communality typically requires wide-scale, intentional, costly participation among known others, whose efforts are closely coordinated, particularly in the early stages of discretionary database formation. Such cases do involve discrete decisions on whether or not to participate.

Several categories of collective action, though, are not well characterized in this way. Contemporary technologies can functionally undercut several of these requirements, creating what amounts to a second-order communality that makes the free-riding logic of collective action theories increasingly problematic. Individuals can now contribute to information repositories with no or only partial knowledge of other participants or contributors and without a clear intention or knowledge of contributing to communal information with public goods properties. Examples of second-order communality are increasingly common and include posting information on a web page or weblog, contributing to discussion on an electronic bulletin board, participating in online "credentialing" activities of various forms, revealing the identities of networks of friends and common interests in social-networking environments, and even passing forward a list of useful e-mail addresses in the header of a message. The viability of these communal goods rests on the ability of people to easily locate relevant information in order to reduce information overload and derive value from the communal good. In large part, Web search engines and related tools (e.g., searchable databases like those of libraries, archives, etc.) provide this functionality. Thus, information that is widely distributed functionally becomes clustered, there is less need to predict the information recipient a priori, and the notion of the public as strictly "bounded" is relaxed. Thus, a crucial difference with second-order communality is that the communal information good now results from largely *un*coordinated efforts, even though the collective action remains widespread and dependent on individual contributions.

Individuals within the global nongovernmental organization (NGO) community have taken great advantage of this type of public access, developing the equivalent of thousands of "Internet catalogues" containing models of sustainable forms of collective action networks, compendia of best practices, and directories of support systems for NGOs. For example, Eldis (http://eldis.org/), hosted by the Institute of Development Studies in Sussex, England, has organized over 14,850 online documents and other information regarding 4,500 development organiza-

tions for the international NGO community to use. Interestingly, these public goods are used most extensively by populations that are less technologically developed.

Second-order communal goods also greatly diminish the degree to which interests and resources need to be positively correlated—in essence, such goods can exist without exceedingly high interests and resources, due in part to the ease with which private information becomes public with the use of contemporary tools such as the Web and powerful search engines. Because early contributions are of sufficiently low cost—or even unrecognized as contributions—they are more widely supplied by less motivated members of the public, an unlikely scenario that is nonetheless crucial for the realization of public goods with a decelerating production function (Oliver et al., 1985). This process sidesteps the traditional theoretical dilemma of decreasing marginal rates of return that acts as a disincentive for sustained contributions to the communal good. The creation of a second-order good, such as a publicly accessible database or archive of a bulletin board system that can later be used to organize collective action, can completely dissociate the decision to contribute from the collective action. In such cases, the free-riding construct is unhelpful for explaining the initiation of collective behavior.

Moreover, in the face of low-cost information provision, the problem of maintaining information privacy becomes more central, as opposed to the more traditional problem of motivating people to make private information public. As private contributions are automatically publicized, motivations to free ride are removed. In essence, free riding by withholding individual contributions can in some cases actually become *more* effortful than contributing information would be.

Another aspect of some present-day collective actions is that, for better and for worse, unedited data, unauthorized messages, and nonauthenticated links may constitute a significant space within individuals' communication networks. Consequently, credibility and trust are now negotiated less discretely (Lupia & Sin, 2003). Indeed, the unauthenticated quality of messages has sometimes resulted in initial disdain and dismissal of collective action efforts. For example, during an international campaign against German tire maker Continental AG in 1999, cyberpicketing was described by the general secretary of the International Transport Workers Federation as "just a highfalutin' word for sending out thousands and thousands of e-mails and annoying the hell out of people" (Flynn, 1999, p. A36). Management also suggested that it had no impact on the ultimate settlement. Yet, once the strike actions moved through cyberspace from the United States to Europe, South Africa, and Australia, and Continental AG workers and members of other unions in those areas sent Internet postcards to the German headquar-

ters, the company settled for the first general wage increase in over a decade (Flynn, 1999).

Individual involvement in collective action may thus emerge in this context rather than from explicit judgments of the trustworthiness of a signal or request for action by a single, central organizer. In this way, people's engagement in collective action transpires through a process of interaction and negotiation of their communicative and informational environments. Under these circumstances, although strictly speaking the choice to act or not act often remains a binary decision, it also involves considerations and interactions not well characterized by traditional rational choice theories. Considerable empirical work has been conducted to clarify the specific factors driving individuals' decision calculi in environments that capitalize on technologies that facilitate dense communication networks and intense information sharing (e.g., Fulk, Heino, Flanagin, Monge, & Bar, 2004). In such environments, the individual contribution decision can be reconceptualized from a binary cost–benefit analysis in view of some goal to one's commitment to shift private discourse and resources to the public domain, as discussed in detail later.

Organizations and Organizing in the Contemporary Media Environment

One of the most striking features of the way people use technology to pursue public goods is the wide variation in organizational structures that is involved. Whereas traditional theory predicts certain formalized structures adapted to the various information, communication, and coordination functions required for collective action (Walker, 1991), new faces of collective action exhibit both formalized and informal structures—some generally bureaucratic in structure and some structured as flat networks. Although widely described in the literature, the implications for the core of collective action theory have not been well developed.

Clearly, traditional collective action theory is correct in recognizing the necessity of information, communication, and coordination to collective actions of every kind. Focusing on these, rather than on the formal organizations that have traditionally served them, helps illuminate the dynamics underlying particular organizational forms. Three basic functions are requisite to all collective action: (a) a means of identifying people with relevant, potential interests in the public good; (b) a means of communicating messages commonly perceivable among them; and (c) a means of coordinating, integrating, or synchronizing their contributions. The need to accumulate resources in order to bear the costs of acquiring information about interests, the costs of distributing messages, and the labor and material costs of coordination are diminished substantially under certain circumstances by the availability of new technologies. More specifically, whereas medium-sized to mass audiences

were quite recently accessible exclusively to those who controlled the substantial centralized media apparatus necessary to reach them, new technologies are now closing this "media gap."

With the rise of micromedia (e.g., e-mail, chat rooms, and cell phones) and "middle" media (e.g., websites, webzines, and Internet-based communication campaigns), formal organizations, flexible decentralized organizations, networks, and even individuals now have the potential to communicate and coordinate with others in ways that until recently were feasible almost exclusively for formal organizations (see, for example, Bennett, 2003; Neuman, 1991). Large-scale audiences up to the size of social movements, as well as highly targeted, specialized audiences, have thus been brought into range for meaningful group participation by a wide range of groups structured in a host of ways. The need for clear external boundaries and tightly identified internal roles and leadership structures to accomplish information, communication, and coordination tasks is also greatly diminished as the environment for communication and information becomes richer. For all these reasons, various organizational structures are capable of the three basic tasks requisite to collective action.

Open source projects, such as the well-known movement associated with the Linux operating system and lesser known efforts such as "open source unionism" (Schmid, 2004), illustrate these new types of cooperative endeavors and organizing structures. To foster identification with the labor movement and facilitate involvement in collective action, traditional unionism depends on face-to-face, frequent communication at specific worksites. However, the geographic dispersion of workers and the high costs of traditional tactics for organizing (estimated as high as $2,000–3,000 per new member, Freeman & Rogers, 2002), have created a favorable context for the utilization of technologies such as listservs, chat rooms, and websites to develop shared ideologies and to recruit and mobilize workers. Membership boundaries in open source unionism are redefined and fluid. Membership may represent "official" affiliation and the large expense of full union membership, but it may also represent registering on a listserv to get information, logging on to a website, or sending information about corporate practices to a website outside the company's purview. The low level of active commitment required among participants is seen as one of the major advantages of open source unionism (Freeman & Rogers, 2002).

A successful example of open source unionism, the Alliance@IBM (see www.allianceibm.org), began in September 1999. The alliance is an affiliate of the Communications Workers of America with memberships in Germany, Australia, Japan, Canada, France, and Italy. Today, although most major IBM sites have both a cyberform of unionism and an Alli-

ance chapter with organizers who use traditional collective action organizing (i.e., talking to employees, holding local meetings, distributing information at the entrances to worksites), the successes of open-source organizing, combined with the growing number of teleworkers and satellite locations with very few employees and the high cost of reaching them, appear to assure its continued development (Guyer, 2001).

The use of new technologies also means that certain kinds of traditional public organizations exhibit some of the characteristics of fluid, flexible grassroots social movements. Similarly, some social movements are able to take on the functions of more traditional, resource-rich organizations. Indeed, when organizations combine and meld features of multiple designs, blurring boundaries between traditional hierarchical forms and flexible network structures, they often are more efficacious in dealing with complex and volatile social contexts (Castells, 1997; see also Gottfried & Weiss, 1994, and Grauerholz, Gottfried, Stohl, & Gabin, 1999, for relevant discussions of "compound" organizations), as in the case of "postbureaucratic pluralism," a term suggested for policy advocacy by groups that do not rely on traditional organizational types (Bimber, 2003).

Informal structures and networks, or hybrid organizational types, do not simply replicate the functions of formal organizations because costs of traditional information, communication, and coordination functions are lower. In some cases the functions of networks surpass what is possible by the kinds of organizations that early statements of collective action theory intended. "Viral" e-mail lists, for example, exploit information that is inherently distributed in nature. Indeed, they are so thoroughly decentralized as to be nonreproduceable, existing only as they are constituted. Such geometrically expanding lists of people constituting the partial social networks of individuals, including those on the lists, are an information resource for collective action that is largely unfamiliar to the kinds of formal organization traditionally posited as central to collective action efforts.

One of the most intriguing and extreme cases of self-organizing networks is what Rheingold (2003) has called "smart mobs." Exploiting a combination of mobile telephony, electronic mail, and Web technologies, these groups coalesce in the most ephemeral of ways. So far, actual instances of smart mobs (more widely known as "flash mobs") have involved largely private goods such as participation in entertaining antics of one sort or another. The possibility of spontaneously organized flash mobs aimed at public goods is, however, obvious, as Rheingold notes. The capacity to mobilize people to gather at a particular moment for a common goal on short notice involves solving information problems foreign to most formalized structures: identifying people proxi-

mate to a location within a span of only hours with an appeal for action tailored to the specific interests or personalities of the participants. Similarly, they permit ongoing, decentralized communication among participants in ways that facilitate a level of coordination rarely achievable by formal organizations even if they have considerable resources at hand.

In summary, new faces of collective action confirm the tenet of collective action theory that basic informational, communication, and coordination functions are requisite for the production of public goods. New forms of collective action, however, sharpen our view of these functions while disconfirming the theoretical expectation that formal organization is required to accomplish them.

Reframing Collective Action Theory in the Contemporary Media Environment

We have argued that the new faces of collective action entail second-order communality and changed dynamics in control over information, as well as the ability of people to exploit technology for performing basic collective action functions in the absence of traditional organization and accumulated resources. We now consider whether a general theoretical perspective is available that can link all of these features of collective action, as well as the more traditional constructs of free-riding and formal organization. We posit that such a theoretical framework exists, and it entails the nature of transitions between private and public domains. We observe that, as a general principle, collective actions of all kinds entail individuals' transition from a private domain of interest and action to a public one. That is, individuals maintain a realm of private interests and actions. When they make these interests or actions known to others in some way, they cross a boundary between private and public realms. When that boundary is crossed by two or more people in conjunction with a public good, a collective action has occurred. Boundary-crossing phenomena lie at the heart of new forms of technology-based collective action, and they also form the general class of which the traditional free-riding decision is one special, albeit very important, subset.

Noncollective actions, or what might be better called "precollective actions," differ from collective action not exclusively because they are individual in nature, but because they are nonpublic. Collective actions, on the other hand, are situated in the public domain, and they involve efforts and incentives to persuade people to cross their well-defined and well-maintained private–public boundaries by expressing or acting on an individual interest in ways observable to relevant others. When Olson (1965) referred to collective action as the transformation of "latent" groups to actual participants, he was describing precisely the crossing of such boundaries because latency entails privacy.

To those accustomed to the traditional theory of collective action, private-to-public boundary crossing may at first appear too underspecified to account for outcomes, but the forms that the private–public boundary takes on vary substantially. In a context of solid, well-demarcated boundaries between the private and public, making the transition is typically costly. When it is costly, boundary crossing typically takes on the characteristics of a discrete decision: Should I bear the costs of expressing myself or acting in order to enter the public domain in pursuit of a particular public good? Under such circumstances, free riding is the relevant theoretical construct, and an emphasis on formal organizational means of brokering participation makes sense. Hence the two central features of traditional collective action theory, the discrete free-riding calculus and organizational context, represent adaptations to conditions of firm private–public boundaries.

When boundaries between private and public domains are porous and easily crossed, however, people's negotiation of the boundary typically involves less intentionality and calculation. Moreover, formal structures designed to broker the private to public transition become less crucial. The transition may even be unintentional, or it may involve a more continuous process of movement back and forth between public and private domains of interest and action. One of the primary effects of new technologies of communication and information is precisely to make boundaries between private and public domains porous and easily crossed. The result is that boundary crossing in connection with public goods takes on forms not so readily recognizable in the theoretical terms of free riding, selective incentives, and organization.

The Alliance@IBM example introduced earlier illustrates well the existence of private–public boundaries and the ease with which they may be crossed in ways that result in a public good but with hallmarks of traditional collective action. The alliance began with a personal e-mail from one employee to the CEO, Lou Gerstner, with the subject line "Thou shalt not steal" (Guyer, 2001). That e-mail was forwarded among employees in a "viral" fashion, which prompted participation in discussion groups online among people wishing to comment on the situation and the issues raised by the one employee. The key dynamic was not discussion-group participants' decision whether to "free ride" in the production of a public good, or the first employee's intentional efforts to "organize" in a traditional sense, but rather people's revealing of private complaints publicly, in response to the initial e-mail between one employee and Gerstner itself becoming public. The transformation of private discourse into public discourse, without any specific or centrally organized goal of public goods production, is the central logic of this account. Guyer's (2001) description of the process is worth quoting at some length:

> Our internet strategy wasn't so much planned as it started spontaneously on several fronts. Employees across the country were already communicating electronically the moment the "Great Pension Heist" was announced. For many years at IBM there have been online discussion groups—software "bulletin boards" that allow individuals to type in a message that gets "posted" so that everyone who is a member of the group can see the message. Originally these discussion groups were on mainframe computers and each group centered around a specific technical topic.
>
> Today, Yahoo provides this service free of charge. One employee started the "ibmpension" discussion group—called a "club" on Yahoo—thereby providing a free, easy-to-use means of communicating outside company computers. The "ibmunion" club sprang up on Yahoo at the same time.
>
> At the same time, two new web sites were started by employees: www.cashpensions.org was created to make unbiased information about cash balance pension plan conversions available to employees; and www.ibmunion.com was started to list union-information meetings and contacts at the different work sites around the country. These were developed in the first few months of the employee insurrection, before we even had a chance to figure out what our union would be, much less our strategy. (Unpaginated source)

Recent empirical tests suggest that the IBM union account is not an exception theoretically. Research shows the relatively unproblematic nature of conversion of private to public expression and resources. For example, contrary to traditional theoretical formulations, the perceived cost of contributing to collective actions via contemporary electronic tools is either a relatively weak (Fulk et al., 2004) or unimportant (Yuan, Fulk, Shumate, Monge, Bryant, & Matsaganis, 2005) factor in explaining individuals' decisions to contribute to information repositories. This suggests that the conversion of private to public resources has become relatively straightforward when using these tools. Other work on collective action has recognized the interactive, affective process involved in crossing boundaries between private and public. For instance, Melucci (1996) conceptualized contemporary collective action as "the outcome of complex processes of interaction mediated by certain networks of belonging" (p. 18). Technologies help people develop collective identities and identify a common complaint or concern, and this enhances the public expression of new kinds of private interests. When that public expression of private interests is focused on a public good, we argue that the collective action process is involved, even though discrete free-riding decisions cannot necessarily be discerned.

Several common functions served by new technologies of information and communication are breaking down boundaries between private and public. Electronic mail is the most fundamental example. Conceptualiz-

ing a citizen who has received a request electronically to forward a petition or to send a message to a public official by e-mail as facing a free-riding decision is of limited explanatory value. Rather, the citizen is more accurately viewed as facing a nearly costless request to make public certain requests or concerns that are otherwise private or semiprivate. The fact that another person has identified the recipient as a possible participant means that the private interests of the potential participant are likely already known to at least one other person. The participant may also exploit private or semiprivate information to forward a message to others who may have interests in the public good. As an e-mail network of this kind expands, private and semiprivate information is made increasingly public in an incremental but rapid process of collective action formation.

In 1999, for example, a group with only 40,000 members in the U.S., the Libertarian Party, initiated a viral e-mail campaign protesting a proposed change in banking privacy regulations. The agencies targeted, including chiefly the Federal Deposit Insurance Corporation, received about a quarter-million messages, despite virtually no coverage in traditional media and no involvement of large mobilizing organizations (Bimber, 2003). This amplification of engagement, in which a small group effectively mobilized a protest several times larger than its own membership, emerged from the willingness of citizens to share their e-mail lists with one another—but crucially, not with the Libertarian Party. The absence of a central organizer attempting to obtain or coordinate the list of participants was likely key to people's willingness to transform temporarily their private domains of friendship and professional interaction into a public domain of collective action.

Private-to-public boundary crossing is not simply a function of electronic mail. File sharing involves more intentionality and potentially stronger challenges to institutionalized control over private information. The exchange of private collections of material—at this point typically audio and video information—with anonymous others across the globe is one of the most powerful and institutionally disruptive examples of the *public*ation of previously privately held and privately controlled material. What any one person "owns" at one moment can in another moment become an essentially public resource shared by many and "owned" exclusively by no one. Few forces are as destructive of boundaries as collapses in the meaning of ownership.

The search engine, acting on an almost inconceivably vast array of individual and corporate postings of notes, writings, advice, images, instructions, and other material on the Web, represents the ultimate vehicle for crossing boundaries. The search engine provides the chief mechanism for individuals to locate information created by others and offered for public use. The creation of Web content means that the costs of

producing the information that one day may become useful publicly are born separately and in advance of collective action. The Web makes links between private spheres of action undertaken in homes and offices with future public actions taken either online or in physical, real-world actions.

Certain kinds of weblogs (or "blogs") are especially vivid examples of the diminished boundaries between private and public. An important genre of weblogs comprises what is essentially the publication of individuals' private journals. The creation of publicly accessible daily musings, photographs, logs of thoughts and activities, and the like opens up what was once an exclusively private and sometimes intimate sphere of writing and thinking to the observations of any interested others. Other approaches to blogging, in which the public can contribute material, present another variant on the private-to-public boundary spanning by creating a public record of the interaction between individual writers. One estimate is that 10 million blogs existed at the end of 2004 (Nussbaum, 2004), one for every 20 adults in the U.S.

Other more novel and extreme forms of boundary crossing have recently emerged. Technologies for exchanging what are essentially personal ads moving through public spaces are now in use in a few places around the globe. Specialized devices available in Japan broadcast over a short distance the owner's interest in personal encounters with others, and interested parties respond by signaling their owner when a compatible message is received from the device of a passerby. More sophisticated versions of this technology are now in use on cell phones in some places, permitting people on trains or other crowded places to communicate personal interest to others who may be nearby, technologically enabled, and "listening." Similarly, social software, including so-called introducer systems, exploits the fact that humans are more inclined to interact with strangers if they are able to establish common acquaintances or common experiences, even though these may be incidental or even trivial to the future action to be undertaken by those involved. These technologies depend on the fact that people seek to disclose information about themselves publicly in certain contexts. Discoveries of conditions for minimum-group effects are typically happenstance and ad hoc, requiring key social or physical circumstances. New kinds of technology, however, treat the discovery of these linkage mechanisms as a simple information problem, decontextualizing the exchange of private information and easing transitions between the private and the public, in the context of both public goods and nonpublic goods.

Many uses of technology confound categories of public space and private space, public communication and private communication, and one individual's social space from that of the next. In an important way

these reveal public social interaction, at least on a small scale, that confronts information problems at least as importantly as they confront free-riding problems. In any given public or quasi-public setting, from a city sidewalk to a pair of adjacent seats on an airplane, one of the chief obstacles to human interaction is informational: the discovery of shared interests, shared desires, or common experiences and acquaintances. Technologies that help people identify and overcome these information and communication obstacles can readily facilitate the beginnings of social behavior. The social behavior that emerges from these exchanges may end up advancing private goods or collective action; which path the emergent public behavior takes is contingent upon the circumstances and interests at hand.

Many of the available examples of collective action in the contemporary media environment entail cross-national engagement. Although solid quantitative measures of the extent of globalization of collective action are not yet available, it makes sense theoretically that diminution of private-public boundaries would manifest in more porous boundaries at higher levels of boundary aggregation: across communities, regions, and nations. As individuals are able to move more seamlessly between private and public domains, the structure of public domains themselves is altered. Previous factors defining "publicness," such as the family, the community, and the state, become less influential in circumscribing public domains when individuals' private–public boundaries are weakened. This permits the constitution of public spheres around common interests that may join people in disparate regions of the globe. So, indeed, we find examples of collective action aimed at the status of poor children in all countries, that favor clean air everywhere, or that advance human rights in many locations.

The place of private–public boundary transitions in collective action has been obscure for several reasons, most importantly because so many traditional forms of communication do not exhibit this fluid process of private-to-public transition. A traditional physical letter in an envelope can become public as an organizing or rallying message for collective efforts only with considerable expense and time. The decision to attend a rally or march in response to a request from organizers involves a costly and discrete decision to make public otherwise private interests and concerns. Similarly, the information known to members of a traditional interest group about the private interests of neighbors and friends is largely inaccessible to the formal group—boundaries between private and public action are not easily crossed. Under those conditions, boundary crossing often takes on the visible manifestations of free-riding decisions in the context of formal organization, and it is these manifestations that have, for the most part, attracted the attention of scholars.

Positing private-to-public transitions as central to collective action implies that any set of conditions or influences on human societies that weakens, or strengthens, the boundaries of the private and the public should facilitate or impede collective action, respectively. Any society or historical period with less porous boundaries should reveal less collective action, as well as collective action of different sorts, than societies with more porous boundaries. Historically, the nature of private–public boundaries has proven variable as societies evolve. Much classic scholarship on the industrial age, for instance, argued that the rise of industrialized, urbanized societies entailed the erection of barriers between the private and the public. The work of Tönnies, Durkheim, Weber, and others has interpreted the modern age as a time of sharply defined boundaries. The private–public boundaries of the modern age arose from the structural and economic nature of society, its physical organization, and the reliance on comparatively costly and ineffective technologies of communication and information.

In this view, preindustrial societies, especially small-scale agricultural and rural communities, exhibited comparatively porous private–public boundaries. Heavy reliance on interpersonal communication for exchange of information and for coordination, high levels of familiarity among members of communities, and high social interdependence meant that the public sphere intermingled closely with what would be more private domains in the later age. Theoretically, these conditions were actually superior to those of the industrial period for facilitation of collective action at the scale of communities. From this perspective, a close examination of collective action in preindustrial societies would also reveal more continuous processes of movement back and forth between private and public and, crucially, fewer readily identifiable, discrete calculations by individuals in determining whether to join collective efforts or to free ride.

Similarly, the structure of states and the nature of their public policies may affect the nature of boundaries between public and private domains, thereby influencing the extent to which collective action exhibits discrete decisions or more continuous, nondiscrete boundary crossing. Most recently, postmodern theory has posited a contemporary collapsing of distinctions such as private–public that traditionally have shaped modern societies and identity (Taylor, 2004). Focusing on boundaries between public and private helps situate technology properly in this larger picture. It is not sufficient to say that contemporary forms of collective action are strictly technological in nature; instead, they are the product of conditions in society that can arise in various ways—at this stage under the influence of people's use of particular technologies in ways that weaken industrial-age boundaries between private and public. By

the same token, many factors in addition to how people use technology shape the nature of private–public boundaries at any one time.

With respect to technological determinism, which can cast a shadow on any discussion of technology and society, it is important that our theory is agnostic about the origins of technology and the processes of social shaping that give rise to it and that influence the uses to which it is put. It is sufficient to observe that the ways in which technologies of information and communication are employed exhibit the property of diminishing boundaries between the public and the private, among other functions. As most studies of emerging media have shown, the unique and wide-ranging effects of new technologies do not arise from the attributes of the technologies themselves, but from the manner in which people appropriate them initially to substitute for and accomplish previously established communication practices. Only then do radical changes in everyday practices begin and become apparent (Boczkowski, 2004). An important question raised by the use of technology in collective action but beyond the scope of the present discussion is why people develop and employ technology in ways that weaken—or perhaps in some cases strengthen—boundaries between the public and private. Our larger observation is that just as the spread of industrialization tended to create and strengthen private–public boundaries, the spread of digital technologies is now weakening them. The result is changing manifestations of collective action, as certain boundaries became less and then more easily crossed.

Conclusion

Our reframing of collective action theory does not posit that traditional accounts are wrong. We have suggested that much traditional theory is simply limited to conditions in which private–public boundaries are firm and comparatively impermeable, such that individuals' efforts to cross them are characterized by discrete free-riding calculations in the context of high costs. Such conditions are widespread and important and will likely remain so, but they no longer constitute all the relevant circumstances under which public goods are pursued.

Similarly, we do not suggest that the traditional prediction that formal organization is required for collective action is strictly incorrect; it applies well under circumstances in which costs of information, communication, and coordination are high. Such conditions also remain important, but again they no longer constitute all situations where public goods are at stake.

By asking whether traditional collective action theory fits the examples now available, rather than by asking how well examples of collective

action succeed against traditional theory, we have suggested that the varieties of human collective experience are broader than have been accounted for so far. It may well be that no actions taken using contemporary technologies are strictly new in a qualitative sense; many actions, such as those of self-organizing groups, clearly have antecedents in a time well before the Internet. Indeed, we are intrigued by the possibility of similarities between contemporary collective actions using new technologies and historical cases under conditions where costs of relevant information, communication, and coordination were also low and individuals could readily negotiate boundaries between their private and public lives. Such individuals might be those confined to small villages or living in other circumstances under which extremely strong community ties entail more intrusion of the public into the private.

The theoretical modifications we propose to collective action theory suggest several new directions for research. Most important is work examining boundary phenomena that conceives of contributions to public goods not as strict binary decisions, but rather as an elaboration on the basic idea that private–public boundaries are a type of limiting factor in collective action. Besides the identification and utilization of new types of tactics and strategies, there are unanswered questions regarding the efficacy of particular types of emerging structures, the relationship between social capital and collective action, and the development and utilization of social networks. As contemporary technologies provide novel affordances to those seeking public goods, and as the frequency, intensity, breadth, and depth of interdependence increases, the importance of understanding the dynamics of collective action becomes greater than ever before.

Authors

Bruce Bimber (PhD, Massachusetts Institute of Technology) is a professor in the Department of Political Science and the Department of Communication at the University of California, Santa Barbara. Andrew J. Flanagin (PhD, University of Southern California) is an associate professor in the Department of Communication at UC Santa Barbara. Cynthia Stohl (PhD, Purdue University) is a professor in the Department of Communication at UC Santa Barbara. This material is based upon work supported by the National Science Foundation under Grant No. 0352517. Correspondence may be directed to Bimber at bimber@cits.ucsb.edu. The authors are equal contributors to this article.

References

Acevedo, M., & Krueger, J. I. (2004). Two egocentric sources of the decision to vote: The voter's illusion and the belief in personal relevance. *Political Psychology, 25*, 115–134.

Ariaeanna. (2005). Text messaging lets Iraqis tip authorities to attacks from a safe distance. Retrieved March 30, 2005, from http://blog.ipipi.com/blog/_archives/2005/1/21/270942.html

Bagnoli, M., Ben-David, S., & McKee, M. (1992). Voluntary provision of public goods: The multiple unit case. *Journal of Public Economics, 47*, 85–106.

Bagnoli, M., & Lipman, B. L. (1989). Provision of public goods: Fully implementing the core through private contributions. *Review of Economic Studies, 56*, 583–601.

Bagnoli, M., & McKee, M. (1991). Voluntary contribution games: Efficient private provision of public goods. *Economic Inquiry, 29*, 351–366.

Barry, B., & Hardin, R. (Eds.). (1982). *Rational man and irrational society*. Beverly Hills, CA: Sage.
Berry, J. (1984). *The interest group society*. Boston: Little, Brown.
Bennett, W. L. (2003). Communicating global activism: Strengths and vulnerabilities of networked politics. *Information, Communication & Society, 6*, 143–168.
Bennett, D., & Fielding, P. (1999). *The net effect: How cyberadvocacy is changing the political landscape*. Washington, DC: Capitol Advantage.
Bimber, B. (2003). *Information and American democracy: Technology in the evolution of political power*. Cambridge, UK: Cambridge University.
Bimber, B. (1994). The three faces of technological determinism. In M. R. Smith & L. Marx (Eds.), *Does technology drive history?* (pp. 79–100*)*. Cambridge, MA: MIT Press.
Boczkowski, P. (2004). *Digitizing the news: Innovation in online newspapers*. Cambridge, MA: MIT Press.
Bullert, B. (2000). Strategic public relations, sweatshops, and the making of a global movement. Working Paper Series, Joan Shorenstein Center on the Press, Politics, and Public Policy, Harvard University, Number 2000-14. Retrieved April 28, 2004, from http://www.ksg.harvard.edu/presspol/Research_Publications/Papers/Working_Papers/2000_14.PDF
Castells, M. (1997). *The rise of the network society*. Oxford, UK: Blackwell.
CBS News (2003). Protests against broadcast mergers. Retrieved October 11, 2004, from http://www.cbsnews.com/stories/2003/05/30/national/main556261.shtml
Chamberlin, J. (1974). Provision of collective goods as a function of group size. *Political Science Review, 68*, 707–713.
Clark, P. B., & Wilson, J. Q. (1961). Incentive systems: A theory of organizations. *Administrative Science Quarterly, 6*, 129–166.
Coleman, J. S. (1990). *Foundations of social theory*. Cambridge, MA: Harvard University Press.
Connolly, T., & Thorn, B. K. (1990). Discretionary databases: Theory, data, and implications. In J. Fulk & C. Steinfield (Eds.), *Organizations and communication technology* (pp. 219–233). Newbury Park, CA: Sage.
Downs, A. (1957). *An economic theory of democracy*. New York: Harper.
Ferdinand, P. (Ed.). (2000). *The Internet, democracy, and democratization*. London: Frank Cass.
Flanagin, A. J., Monge, P. R., & Fulk, J. (2001). The value of formative investment in organizational federations. *Human Communication Research, 27,* 69–93.
Flynn, J. (1999, October 25). In Europe, labor movement takes protests on the Web. *Wall Street Journal,* A36.
Freeman, R., & Rogers, J. (2002). Open source unionism: Beyond exclusive collective bargaining. *Working USA: Journal of Labor and Society, 5*, 3–4.
Fulk, J., Flanagin, A. J., Kalman, M., Monge, P. R., & Ryan, T. (1996). Connective and communal public goods in interactive communication systems. *Communication Theory, 6*, 60–87.
Fulk, J., Heino, R., Flanagin, A. J., Monge, P., & Bar, F. (2004). A test of the individual action model for organizational information commons. *Organization Science, 15*, 569–585.
Gottfried, H., & Weiss, P. (1994). A compound feminist organization. *Women in Politics, 14*, 22–44.
Grauerholz, E., Gottfried, H., Stohl, C., & Gabin, N. (1999). There's safety in numbers: Creating a campus adviser's network to help complainants of sexual harassment and complainant receivers. *Violence Against Women, 5*, 950–977.
Green, D., & Shapiro, I. (1996). *Pathologies of rational choice theory: A critique of applications in political science*. New Haven, CT: Yale University Press.
Gurak. L. (1997). *Persuasion and privacy in cyberspace: The online protests over Lotus Marketplace and the Clipper Chip*. New Haven, CT: Yale University Press.
Guyer, L. (2001). Real-world experiences of online organizing. Paper presented to the Unions and the Internet Conference, London, May 2001. Retrieved November 4, 2004, from http://www.allianceibm.org/docs/TUC/AllianceIBM_paper.htm
Hardin, G. (1968). The tragedy of the commons. *Science, 162*, 1243–1248.
Hardin, R. (1982). *Collective action*. Baltimore: Johns Hopkins University Press.
Head, J. G. (1972). Public goods: The polar case. In R. M. Bird & J. G. Head (Eds.), *Modern fiscal issues: Essays in honour of Carl S. Shoup* (pp. 7–16). Toronto, Canada: University of Toronto Press.
Kahn, R., & Kellner, D. (2004). New media and internet activism: From the "Battle of Seattle" to blogging. *New Media & Society, 6*, 87–95.
Kalathil, S., & Boas, T.C. (2003). *Open networks, closed regimes: The impact of the Internet on authoritarian rule*. New York: Carnegie Endowment for International Peace.

Kollock, P. (1999). The economies of online cooperation: Gifts and public goods in cyberspace. In M. A. Smith & P. Kollock (Eds.), *Communities in cyberspace* (pp. 220–239). New York: Routledge.

Lupia, A., & Sin, G. (2003). Which public goods are endangered? How evolving communication technologies affect *The logic of collective action. Public Choice, 117*, 315–331,

Markus, M. L. (1990). Toward a critical mass theory of interactive media. In J. Fulk & C. W. Steinfield (Eds.), *Organizations and communication technology* (pp. 194–218). Newbury Park, CA: Sage.

Marwell, G., & Ames, R. E. (1981). Economists ride free, does anyone else? Experiments on the provision of public goods, IV. *Journal of Public Economics, 15*, 295–310.

Marwell, G., & Oliver, P. (1993). *The critical mass in collective action: A micro-social theory*. New York: Cambridge University Press.

McCaughey, M., & Ayers, M. D. (2003). *Cyberactivism: Online activism in theory and practice*. New York: Routledge.

Melucci, A. (1996). *Challenging codes: Collective action in the information age*. Cambridge, UK: Cambridge University Press.

Neuman, W. R. (1991). *The future of the mass audience*. New York: Cambridge University Press.

Norris, P. (2002). *Democratic phoenix: Reinventing political activism*. Cambridge, UK: Cambridge University Press.

Nussbaum, E. (2004, January 11). My so-called Blog. *New York Times Magazine*, 33–37.

Oliver, C. (1991). Network relations and loss of organizational autonomy. *Human Relations, 44*, 943–961.

Oliver, P. (1980). Rewards and punishments as selective incentives for collective action: Theoretical investigations. *American Journal of Sociology, 85*, 1356–1375.

Oliver, P., & Marwell, G. (1988). The paradox of group size in collective action: A theory of the critical mass, II. *American Sociological Review, 53*, 1–8.

Oliver, P., Marwell, G., & Teixeira, R. (1985). A theory of critical mass, I: Group heterogeneity, interdependence and the production of collective goods. *American Journal of Sociology, 91*, 522–556.

Olson, M. (1965). *The logic of collective action*. Cambridge, MA: Harvard University Press.

Olson, M., & Zeckhauser, R. (1966). An economic theory of alliances. *Review of Economics and Statistics, 48*, 266–279.

Putnam, R. (2000). *Bowling alone: The collapse and revival of American community*. New York: Free Press.

Putnam, R. (Ed.). (2002). *Democracies in flux: The evolution of social capital in contemporary society*. New York: Oxford University Press.

Rafaeli, S., & LaRose, R. J. (1993). Electronic bulletin boards and "public goods" explanations of collaborative mass media. *Communication Research, 20,* 277–297.

Rheingold, H. (2003). *Smart mobs*. New York: Basic Books.

Samuelson, P. A. (1954). The pure theory of public expenditure. *Review of Economics and Statistics, 36*, 387–390.

Schmid, J. (2004). Open-source unionism**:** New workers, new strategies. *Academe-Bulletin of the AAUP, 90*(1), 24–27.

Shah, D., Kwak, N. & Holbert, R. (2001). "Connecting" and "disconnecting" with civic life: Patterns of Internet use and the production of social capital. *Political Communication, 18,* 141–162.

Sweeney, J. W. (1973). An experimental investigation of the free-rider problem. *Social Science Research, 2*, 277–292.

Tarrow, S. (1998). *Power in movement: Social movements and contentious politics* (2nd ed.). Cambridge, UK: Cambridge University.

Taylor, B. (2004). Postmodern theory. In S. May & D. Mumby (Eds), *Engaging organizational communication theory and research: Multiple perspectives* (pp. 113–140). Thousand Oaks, CA: Sage.

Taylor, M., & Doerfel, M. (2003). Building interorganizational relationships that build nations. *Human Communication Research, 29*, 153–181.

Tilly, C. (2003, October). *Social movements enter the twenty-first century*. Paper presented at the conference on Contentious Politics and the Economic Opportunity Structure: Mediterranean Perspectives, University of Crete, Rethimno.

Walker, J. (1991). *Mobilizing interest groups in America: Patrons, professions, and social movements*. Ann Arbor: University of Michigan.

Williams, J. (1999). The international campaign to ban landmines: A model for disarmament initiatives. Retrieved April 1, 2005, from http://nobelprize.org/peace/articles/williams/

Yuan, Y., Fulk, J., Shumate, M., Monge, P. R., Bryant, J. A., & Matsaganis, M. (in press). Individual participation in organizational information commons: The impact of team-level social influence and technology-specific competence. *Human Communication Research*.