

# Movements as Political Conditions for Diffusion: Anti-Corporate Movements and the Spread of Cooperative Forms in American Capitalism

Organization Studies  
34(5-6) 653-682  
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sagepub.co.uk/journalsPermissions.nav  
DOI: 10.1177/0170840613479226  
www.egosnet.org/os  


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## Abstract

Addressing the spread of cooperatives in the early 20th-century US economy, this study analyzes the role of anti-corporate movements in the diffusion of politically contested organizational innovations. It finds that institutional change can rest fundamentally on the combination of standard diffusion processes and collective mobilization in support of new practices. Specifically, it finds that the Grange, a leading anti-corporate social movement, was a political condition for the diffusion of cooperative alternatives to corporations in American capitalism. Cooperatives evoked fierce opposition by corporate forces, suppressing the diffusion of cooperative forms. When the Grange was weak or absent, cooperative organization in states or sectors had weak or no effects on cooperative organization in other states or sectors. But when the Grange was present and increased in strength, it amplified and even made possible the diffusion of cooperatives across states and industries. These findings shed new light on the contentious transactions between movements, corporations, and non-governmental organizations, expanding existing work on the trajectories, tactics, and organizational effects of anti-corporate movements.

## Keywords

contestation, cooperatives, corporations, diffusion, movements, politics

## Introduction

How do social movements shape the spread of innovations and alternative organizational forms? When do anti-corporate movements serve as a *political* condition for diffusion, fueling social change and the institutionalization of new practices that would otherwise not occur? Local innovations are common, ranging from new financial regulations and socially responsible investment to

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localism in agriculture, new schemes for certifying products, corporate charter reforms, and cooperative enterprise. And as organizations and states borrow innovations and learn from one another, they can trigger self-sustaining diffusion processes and an accelerating spread of innovations, transforming existing institutions. Yet political opposition by corporate interests can disrupt this process. It can prevent innovations from spreading, leaving experiments with alternatives to die stillborn despite proven successes. In these cases, the fate of innovations and their diffusion will rest on advocates mobilizing collectively to defend new practices against vested interests.

This article uses historical data on the spread of cooperatives in the United States to shed new light on how anti-corporate movements interact with diffusion to promote change. Prompted by the recent resurgence of anti-corporate activism in this era of globalization and diminished government, organizational scholars have refocused attention on the contentious transactions between activists and corporations, bringing movements back into institutional analysis of change (Davis, McAdam, Scott, & Zald, 2005; den Hond & de Bakker, 2007; King & Pearce, 2010; Schneiberg & Lounsbury, 2008). Scholars have moved from images of isomorphic settings characterized by conformity and taken-for-grantedness to concepts of fields as sites of contestation, power structures, and multiple, competing logics (Clemens, 1997; Fligstein, 1990; Lounsbury, 2005; Rao, Monin, & Durand, 2003; Schneiberg, 2007). They have added political processes to established analytical inventories of institutional processes like diffusion, isomorphism, and legitimation, emphasizing how change flows from actors' deliberately mobilizing collective action, resources, and allies against other groups' interests to defend or change existing arrangements (Fligstein & McAdam, 2011; Hirsch & Lounsbury, 1997; Strang & Soule, 1998). They have also crafted a trio of strategies for understanding how movements and institutional processes combine to transform fields.

One approach takes movements and institutional dynamics as distinct processes that operate side-by-side or sequentially to punctuate equilibria and produce change (Hargrave & Van de Ven, 2006; Schneiberg & Soule, 2005). Change begins as movements mobilize as "extra-institutional forces" or outsider-challengers to assert new visions, disrupt existing arrangements, and secure policies from corporations or states to realize those visions. Mobilization, in turn, sparks legitimacy crises, struggles in fields over competing logics, and early victories or settlements, followed or paralleled by conventional processes of theorization, endorsement, and the diffusion of reforms (Briscoe & Safford, 2008; King, 2008; Rojas, 2006).

A second approach blurs bright lines, highlighting how movements also mobilize to change systems incrementally within—and with—existing institutions via conventional institutional processes (Campbell, 2005). Movements can themselves become institutional forces, whether as motors of theorization or classification (Lounsbury, Ventresca, & Hirsch, 2003; Weber, Heinze, & DeSoucey, 2008), agents of diffusion, transposition, or recombination (Clemens, 1997; Creed et al., 2002), vehicles for private regulation (Bartley, 2007), or generators of new organizations (Rao, Morrill, & Zald, 2000; Schneiberg, 2002; Sine & Lee, 2009). And in a third approach, institutions are conditions or opportunity structures for movements, enhancing or weakening their effects. Whether movements can turn mobilization into outcomes can depend on whether they can leverage elite support or the structure of the polity (Davis & Thompson, 1994; Soule & Olzak, 2004), media attention (King, 2008), or reforms already diffused (Hiatt, Sine, & Tolbert, 2009).

This article develops a fourth possibility: that anti-corporate movements are political conditions for processes of diffusion and mutualism that figure so centrally in organizational studies of change. The first part uses prior research to craft a working hypothesis. Local innovations can spark accelerating dynamics of diffusion and new organizational creation, fueling the spread of new forms. As organizations and groups emulate, learn, and borrow from one another, they provide social proofs for innovations, enhancing their legitimacy and taken-for-grantedness, and

crystallizing new communities of practice. But where corporation or other elites work to contest alternatives, innovations will spread weakly, if at all, *unless challenger groups mobilize to defend them against incumbent elites*. When innovations are contested, diffusion effects will themselves depend on the mobilization and strength of anti-corporate movements. When innovations are contested, movements serve as political forces that magnify or “turn on” diffusion effects, enabling or accelerating the spread of controversial forms.

The next three parts present a proof of concept using the spread of cooperatives in the early 20th century US. The second part describes the context, establishing it as a good case for addressing how contestation and anti-corporate movements combine with diffusion to shape prospects for change. Producers and consumers in the USA formed cooperatives as local adaptations in markets and weapons against corporations. Corporations responded by contesting cooperatives politically inside and outside the state. They used state power and regulation to handicap cooperatives. They used framing contests to discredit them among would-be organizers. They used market boycotts to disorganize cooperatives and deprive their members of access to key resources. Yet cooperatives diffused within American corporate capitalism. And they did so with the aid of anti-corporate movements like the Grange, who actively promoted cooperatives, working through but also outside the state to combat corporations and organize alternative enterprises directly.

Exploiting panel data on these processes, the third and fourth parts document how the Grange fostered the spread of cooperatives by enabling or amplifying diffusion across states and across industries. Quantitative research on how movements and diffusion fuel change typically models the two forces additively. It puts them side by side in models of vital rates or adoption (Bartley & Child, 2011; Lounsbury, 2001; Rojas, 2006; Schneiberg, King, & Smith, 2008; Sine & Lee, 2009; Soule, 2009; Soule & Olzak, 2004). This lets scholars isolate direct or indirect effects of movements and diffusion on the spread of alternatives. But diffusion is, at root, a *relation* or interdependence between what one group of organizations has done and what others can or will likely do. It is spread powered by the *effect* of one group of organizations on another and the rise of a community of organizations around new practices, forms, or identities. We thus go beyond additive models to analyze interactions and how anti-corporate movements make or break diffusion effects. This lets us isolate how anti-corporate mobilization shapes the effects of one group of organizations on another, amplifying transfers across settings and facilitating the rise of alternative communities of practice.

This study contributes to research at the movements–organizations interface in four ways. It sheds new light on how contestation, movements, and diffusion interact to shape change. By facilitating the diffusion of contested innovations, anti-corporate movements create conditions for forging new communities of practice and layering new forms into existing institutions. It provides new evidence for movement impacts on outcomes by showing how movements moderate diffusion effects. It addresses scope conditions for diffusion, extending research on how practices spread in settings where they evoke controversy (Djelic, 1998; Fiss & Zajac, 2004; Sanders & Tuschke, 2007). Finally, it highlights how mobilization against corporations “outside” the state pre-dates the current period, suggesting possibilities for learning across periods about contentious transactions between movements, non-state organizations, and corporations.

## **Diffusion, Contestation, Movements**

To address how movements combine with diffusion to fuel change, I begin with a canonical view of diffusion processes. I then trace how contestation disrupts those processes, making diffusion effects dependent on movements for change.

### *Baseline Dynamics of Diffusion: A Canonical View*

Diffusion and the dynamics of prevalence and legitimation are central motors of change in organization studies (Boxenbaum & Jonsson, 2008; Campbell, 2004; Galaskiewicz & Wasserman, 1989; Strang & Soule, 1998; Tolbert & Zucker, 1983). Novel forms appear first and cumulate slowly as isolated innovations, local adaptations, or an invasion of foreign ideas. Yet as actors borrow innovations or create organizations with new forms, they can trigger self-sustaining processes, and an accelerating spread of innovations. New forms gain weight, visibility, and legitimacy as they become more common, crystallizing new communities of practice and prompting others to embrace innovations.

For institutionalists, diffusion and change occur via the adoption of new practices by existing organizations or states (Schneiberg & Clemens, 2006). Increased prevalence of an innovation prompts other organizations to adopt those practices, yielding the classic S-shaped curve of cumulative adoptions over time (Rogers, 1995). For ecologists, change occurs via births of organizations with new forms (or deaths of those with older forms), expressed as mutualism and density dependence (Hannan & Carroll, 1992; Ruef, 2000). But the key common insight is that organizations and states are not islands, producing change solely via isolated responses to local conditions. Rather, they are shaped by the forms and prior decisions of other organizations and states. They are shaped by the effects of one group of organizations on another, by dynamics of diffusion and legitimation in which organizations transpose or borrow forms from one another, and by the emergence of new communities of practice through those processes.

Organizations scholars also commonly stress normative or cognitive mechanisms for these effects (Mizruchi & Fein, 1999; Schneiberg & Clemens, 2006). As new forms become common, they acquire the status of social facts, becoming familiar, intelligible, and taken-for-granted among broader audiences as natural or rational ways to organize for a purpose (Hannan & Carroll, 1992; Scott, 1995). Growing prevalence can fuel the rise of a normative order, altering payoffs to organizations, and pressuring organizers to embrace new forms as a condition for legitimacy (Deephouse, 1996; Edelman, 1990; Suchman, 1995). It can fuel emulation and learning by increasing exposure to new forms, making innovations more broadly available for organizations that look to one another for models of how to operate under uncertainty (Fligstein, 1990; Haveman, 1993; Simmons, Dobbin, & Garrett, 2006). And by multiplying exemplars, prevalence can foster theorization and supportive ideological contexts, potent conditions for diffusion (Greenwood, Suddaby, & Hinings, 2002; Ingram & Simons, 2000; Strang & Meyer, 1993). New organizations can even provide material support to others for creating kindred forms, from technical assistance to trading networks (Aldrich & Ruef, 2006; Barnett & Carroll, 1987; Staber, 1989).

Panels A1 and A2 of Figure 1 graph these effects. In both panels, increasing the prevalence of a new form or practice at time  $t-1$  fuels the spread of that form at time  $t$ , either by increasing the log odds that other organizations will adopt the innovation in the same or related fields, or by increasing the births of organizations with those forms. Panel A1 depicts this as a linear relation. It re-expresses the S-curve relation between the accumulation of new forms and time to capture the theoretical insight that diffusion rests on community emergence and the effects of one set of organizations on another. It also captures the canonical strategy of modeling those effects using counts or cumulative counts of prior adoptions (Greve, 1995; Guler, Guillén, & MacPherson, 2002; Palmer, Jennings, & Zhou, 1993; Rao et al., 2003; Schofer & Meyer, 2005; Simmons & Elkins, 2004; Washington & Ventresca, 2004; Weber, Davis, & Lounsbury, 2009a). Panel A2 depicts these effects as curvilinear to tap ecological arguments. At high levels, prevalence yields falling gains in legitimacy as forms are already well known, and competition among organizations, reducing new formations (Hannan & Carroll, 1992; Ruef, 2000; Singh, 1993). Together, these are some of the most well-understood and documented relations in organizational studies.

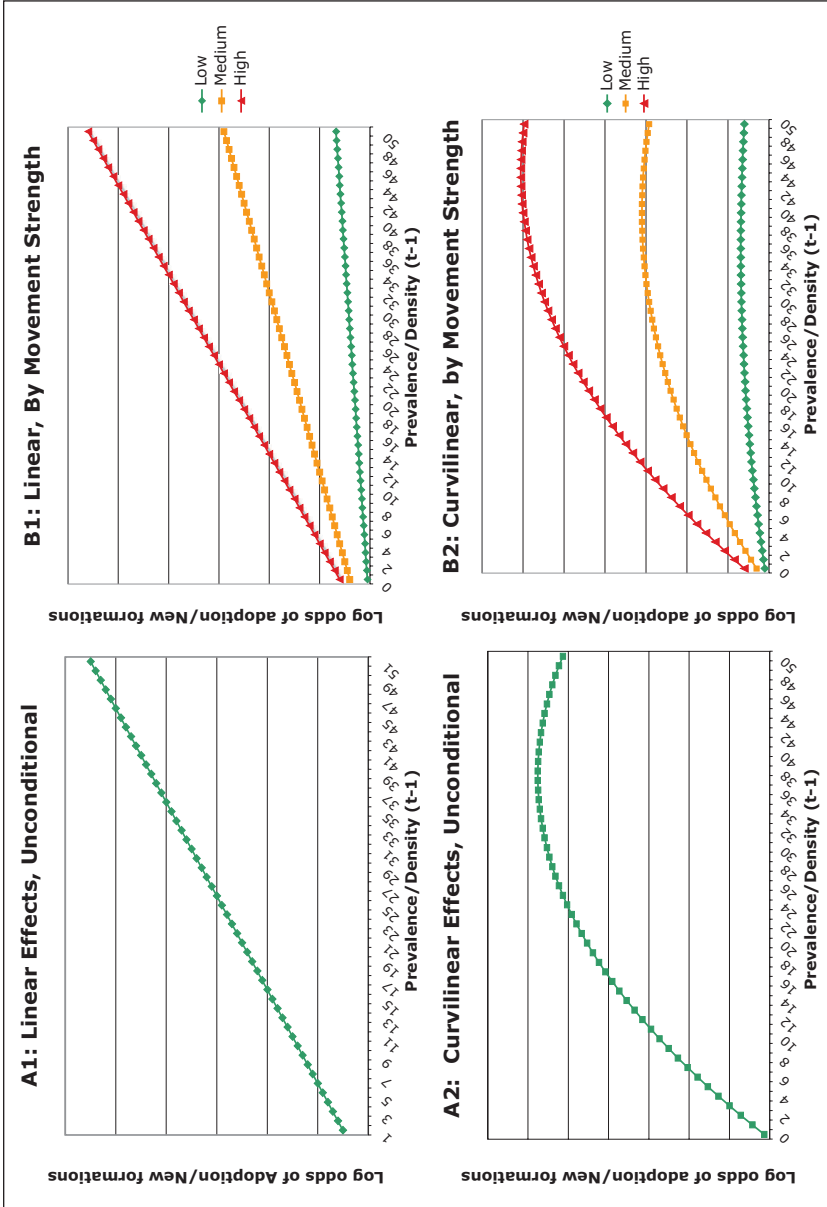


Figure 1. Unconditional and Conditional Diffusion Effects.

### *Contestation, Movements, and Diffusion Effects*

For canonical accounts, local innovations and experiments with alternatives spark self-sustaining processes of mutualism or diffusion, fostering new communities of practice. Yet innovations can also evoke controversy, as sometimes happens when locals resist the diffusion of foreign practices across nations (Djelic, 1998; Fiss & Zajac, 2004; Sanders & Tuschke, 2007), and work by entrepreneurs to edit, hybridize, or otherwise fit foreign ideas with the local lingua franca (Czarniawska & Joerges, 1996; Fiss, Kennedy, & Davis, 2012; Sahlin-Andersson, 1996). Moreover, innovations can evoke political contestation—processes in which actors organize collectively and mobilize resources, information, and alliances to suppress or defend innovations and forge or break new communities of practice (Hargrave & Van de Ven, 2006; Schneiberg & Soule, 2005).

Escalating contestation is likely when innovations and new organizations directly challenge elites, compete with corporations, or are perceived as threats to market or political order. In these cases, corporations and other elites do whatever they can to suppress innovations and new organizations. They use state power to handicap or rule out alternatives and reverse policies that enabled innovation (Carroll & Hannon, 2000; Davis & Thompson, 1994; Ingram & Rao, 2004; Vogus & Davis, 2005). They engage in framing contests, using media campaigns, public hearings, and commissioned studies to suppress information about and discredit innovations (King, 2008; Schneiberg, 2002; Voss, 1996). And they organize in markets, using boycotts, “capital flight,” private governance schemes and grassroots organizations to promote or challenge reforms more directly (Bartley, 2007; Dunlavy, 1994; Walker, 2009).

Contestation of this sort not only directly suppresses adoptions or vital rates for innovations. It also suppresses the prevalence or diffusion effects of innovations on other organizations. Subjecting innovators and organizations to state prosecutions or boycotts renders their fates uncertain, reducing the chances that they will be seen as reasonable or natural ways to organize as they attract notice. Prosecutions and boycotts also alter the payoffs to would-be adopters, mitigating gains in legitimacy or material supports that flow from embracing new forms. Similarly, media manipulation to suppress information or negatively frame new forms can wipe out gains in exposure or demonstration effects that flow from increased prevalence, undermining emulation and learning. And even if they raise exposure, such campaigns can subvert the emerging legitimacy of new forms by calling into question their rationality, highlighting failures, theorizing new solutions as dangerous, and making categorical distinctions between innovators, new forms of enterprise, and would-be organizers. Framing contests muddy the theoretical waters. They foster confusion rather than a compelling case and discredit innovations, innovators, or new kinds of organizations, making it less likely that prospective audiences would view them as relevant to their situations.

In short, political opposition by corporations or other elites blocks the signal, leaves alternatives isolated, and prevents the crystallization of legitimating communities of new practice. It weakens or wipes out the positive prevalence or diffusion effects depicted in panels A1 and A2 of Figure 1, effectively forcing those curves downward.

Under these conditions, diffusion effects critically depend on whether anti-corporate forces can mobilize to defend those innovations inside and outside the state. Anti-corporate forces support alternatives in various ways. They mobilize to block hostile legislation, weaken corporate combination, and secure enabling laws or regulations for new practices or forms of enterprise (Davis & Thompson, 1994; Ingram & Rao, 2004; Schneiberg & Soule, 2005). They mobilize as political-cultural forces outside the state, engaging in framing contests, protests, and public debates to legitimate alternatives, establish analogies among organizations and settings, and publicize successful experiments with new forms (Haveman, Rao, & Paruchuri, 2007; Lounsbury et al., 2003; Weber et al., 2008, Rao, & Thomas, 2009b). And they mobilize coalitions in

markets to support alternatives and new enterprises by conducting their own boycotts against corporations, creating certification schemes that validate new practices, and organizing networks to support novel organizations (Bartley, 2007; den Hond & de Bakker, 2007; King & Pearce, 2010; Schneiberg, 2002).

Each strategy can restore mechanisms of mutualism and diffusion. By securing enabling legislation, crafting certification schemes, or forging market coalitions to protect new enterprises, anti-corporate forces not only enhance the viability of new forms, increasing the chances that audiences will see them as reasonable ways to organize. They also restore gains in legitimacy from borrowing new forms or joining new communities. Furthermore, by pursuing their own publicity campaigns, anti-corporate forces enhance the flow of information about innovations, increasing the exposure of would-be adopters to new practices as they become more common. This may involve pressuring media to report events, using protests to attract attention, creating outlets or sponsoring educational networks between emerging communities and other groups. It may also involve using media to reframe alternatives, whether by codifying new forms, generating casual accounts that frame novel forms as rational and proven solutions, or establishing analogies between innovators and audiences. Either of these efforts can restore diffusion by increasing the salience, relevance, and credibility of innovations to potential adopters. Further still, movements can activate material mechanisms of diffusion by forging trading networks and flows of expertise and personnel across organizations within markets (Minkoff, 1994; Russell & Hanneman, 1995).

When innovations are contested, anti-corporate or challenger movements are thus potentially necessary political conditions for diffusion. There may be positive prevalence effects. But their presence and strength depend on the presence and strength of movements that defend those innovations. Anti-corporate movements serve as an *amplifier*, strengthening diffusion effects, and even as a *bridge*, forging linkages, making diffusion or mutualism possible, and “turning on” prevalence effects.

Panels B1 and B2 of Figure 1 graph these conditional effects. When corporations contest innovations, mutualism and diffusion effects for new forms will be minimal. Prevalence will have little positive effect on would-be organizers; curves for diffusion effects will be flat. But as movements for alternatives appear and gain in strength, they will amplify positive diffusion effects, yielding growing payoffs from early victories for the spread of new practices. Increased prevalence at  $t-1$  will have greater effects on other organizations as challengers grow in strength, shifting the curves upward.

To isolate key relations, I focus on how anti-corporate movements shape the positive diffusion effects expressed in regression models via the linear prevalence term. Movements may also shape the negative effects of prevalence at high levels, expressed as curvilinear relations in panels A2 and B2. I return to this issue in the discussion. I also consider there the extension of the framework to address uncontested innovations, mobilization by challengers against innovations by elites, and contestation in which challenger and incumbent strength both vary.

## **Context: Movements and Cooperative Forms in the USA**

I assess this argument about diffusion and anti-corporate movements using the spread of cooperatives in the early 20th-century US economy. This is an ideal study context. First, cooperatives and kindred forms emerged from local struggles with corporations in key markets. From 1870 to 1920, manufacturers, farmers, and other property owners formed over 3,500 insurance mutuals to compete with and bypass “combines” of stock corporations who used market power to raise rates and impose policy terms on insureds (Heflebower, 1980; Heimer, 1985; Schneiberg, 2002). In dairy, farmers organized butter, cheese, and milk-marketing cooperatives

both to bargain collectively with “milk-trusts” who controlled key urban markets, and to bypass for-profit processors who refused to pay farmers for investments in high-grade milk. In grain, growers used elevator cooperatives, state associations, and terminal market agencies to counter-balance and work around “line-elevator” companies organized by railroads, commission firms, and grain dealers to control distribution (Filey, 1929; Knapp, 1969; Saloutous & Hicks, 1951; Young, 1991). And in electricity, municipalities, rural communities, and New Dealers turned to municipal utilities and cooperatives to combat “power-trust” holding companies that left much of the USA unconnected, while charging extortionate rates for those they did serve. In these and other sectors like banking, telephones, and housing, private groups and public officials turned to consumer-, producer-, and even local state-owned enterprises to combat corporations, solve immediate problems of distribution and supply, and create possibilities for economic development.

Second, these were fiercely contested innovations. Even minor local competition from cooperatives and kindred forms escalated rapidly into political struggles inside and outside the state in which corporations sought to drive alternatives from the market. In insurance, stock firms waged nearly continuous propaganda campaigns to discredit mutuals among consumer groups in the late 19th and 20th centuries. They flooded markets with anti-mutual literature and used trade papers and the press to publicize both the assessments mutuals levy on members and failures or “windups” that left policyholders with nothing but debts and lawsuits (Schneiberg, 2002). Stock insurers likewise mobilized in markets to deny mutuals access to critical inputs, including rating bureau and inspection services, actuarial board data on losses, and reinsurance pools. They also mobilized through the state to subject mutuals to regulations that did not apply to stock firms, ranging from bans on doing business outside their home county to limits on the size of risks covered, requirements that regulators approve dividend payments, and bans on soliciting risks while still in formation.

Corporations likewise attacked agricultural cooperatives politically, combining hostile state policies with efforts to disrupt cooperatives in markets. With no small irony, milk dealers met milk-marketing cooperatives and their efforts to break dealer monopolies on distribution by criminally prosecuting them for anti-trust violations first in Illinois, Iowa and other states, and then in federal courts (USDA, 2002; Young, 1991). Nor were dealers above canceling contracts collectively in an effort to wreck dairy cooperatives by throwing surplus milk onto markets. In grain, line elevator syndicates, dealers, and railroads also mobilized against cooperatives in markets. They used both coordinated rate increases along an entire line to divert business away from farmer-owned elevators, and discriminatory pricing to induce individual farmers to defect from their own cooperative firms. They also worked to cut grain cooperatives off from markets by refusing to site cooperative elevators near railroad lines and by using state dealer associations to boycott terminal agencies that accepted grain from farm coops (Kenkel, 1922; Knapp, 1969; Larson, 1969).

Electrical utility corporations were even more blatant in their war on public and cooperative enterprise (Schneiberg, 2006). Against municipal electrical utilities, they used misinformation campaigns, phony “municipal leagues,” and over 2 million pamphlets alone in Seattle to discredit that city’s plant. They sought to cripple municipals by drastically cutting retail prices, refusing to sell city power equipment, and using high rates and refusals to provide power in wholesale markets to undermine bond issues. They also poured money into mayoral campaigns to defeat reformers, tying municipals up in court, and seeking legislation that imposed debt limits on cities, shifted regulatory control to industry-friendly state commissions, and more. Utility corporations likewise denied or overcharged electrical cooperatives for generated power in wholesale markets, and would then switch gears by slashing retail rates, reducing connection



charges, and promising to install lines in underserved communities that were organizing a cooperative in order to sow defection and dissent in the ranks. They formed “citizens’ committees” and stacked cooperative boards with spies. They laid “spite” lines through the most densely populated parts of territories to skim off the most lucrative customers and undermine the economic viability of forming cooperatives. And as with municipals, they prosecuted cooperatives through the state via litigation, utility commission proceedings to deny certificates of operation, and legislative proposals to limit service areas.

Such attacks undermined and often proved fatal for cooperatives and related forms. Yet cooperatives drew vital support from anti-corporate and reform forces in the American economy of the late 19th and early 20th centuries (Schneiberg, 2002; Schneiberg et al., 2008). Two movements figured particularly centrally in promoting alternatives to corporations—the Grange or Patrons of Husbandry, and the Farmers Alliance—though the Farmers Union, Equity, and Public Ownership League also fostered cooperative and public enterprise (Buck, 1913; Goodwyn, 1978; Sanders, 1999; Schwartz, 1976). The Grange initially pre-dated the Alliance, counting 450,000 *families* as members during its first mid-1870s peak, and experienced a major revival during the 1910s and 1920s. The Alliance, linked to the Populist Party, peaked at over 1 million members in 1890. Both were movements of agrarians, independent producers, and small manufacturers centered in the Midwest, plains states, and the South. Both rejected the “corporate liberal” program of development and trade concentrated in corporations, national markets, and a few urban metropolises, fighting instead for “producerist” or “regional republican” programs of decentralized development based in “cooperative commonwealths” of independent producers, farmers, regional markets, and self-governing communities (Berk, 1994; Goodwyn, 1978; Hattam, 1992; Voss, 1996). Both cast the problems facing those groups in terms of “combines,” “trusts,” and dependence on middlemen, railroads, and “Eastern interests.” Both sought decentralized development through programs of regulation and anti-trust, and through local economic self-organization in the form of cooperative, mutual, and public enterprise.

Grangers and Alliancemen along with the Equity, public ownership leagues, and other early 20th-century anti-corporate forces invested heavily in economic self-organization. They pressed the state for financial reforms, enabling legislation for cooperatives like the Capper Volstead Act, and laws against boycotts, discriminatory pricing, and other predatory corporate behavior (Goodwyn, 1978; Knapp, 1969; USDA, 2002). But Grangers and others were often ambivalent about politics, and worked extensively outside the state to foster economic organizations more directly. They publicized success stories through traveling lectureships, provided would-be cooperators with supporting arguments, meeting halls, organizers, links to other communities and organizing templates, and helped create broader associational infrastructures to support cooperative activities and blunt corporate attacks in markets (Sanders, 1999; Schneiberg et al., 2008; Schwartz, 1976).

With this support, cooperatives and related forms withstood corporations and diffused sometimes quite successfully across states and across industries in the USA. Figure 2 maps the number, per state, of the insurance mutuals, dairy and grain elevator cooperatives, electrical municipal utilities and electrical cooperatives in operation, respectively, in 1903, 1913, 1922, and 1947. Cooperative forms emerged early and most prolifically in the upper-Midwest, reflecting heavy concentrations of Scandinavians and Germans who brought templates and experiences with cooperatives from their home countries (Knapp, 1969; Schneiberg, 2002). They spread outward over time to the plains states, the South, and the West. And they appeared most extensively in *new* industries in states with the most extensive legacies of cooperatives in other industries, suggesting diffusion across industries, and institutionalizing regionally correlated enterprise systems despite very different technologies and industry geographies (Schneiberg, 2007).

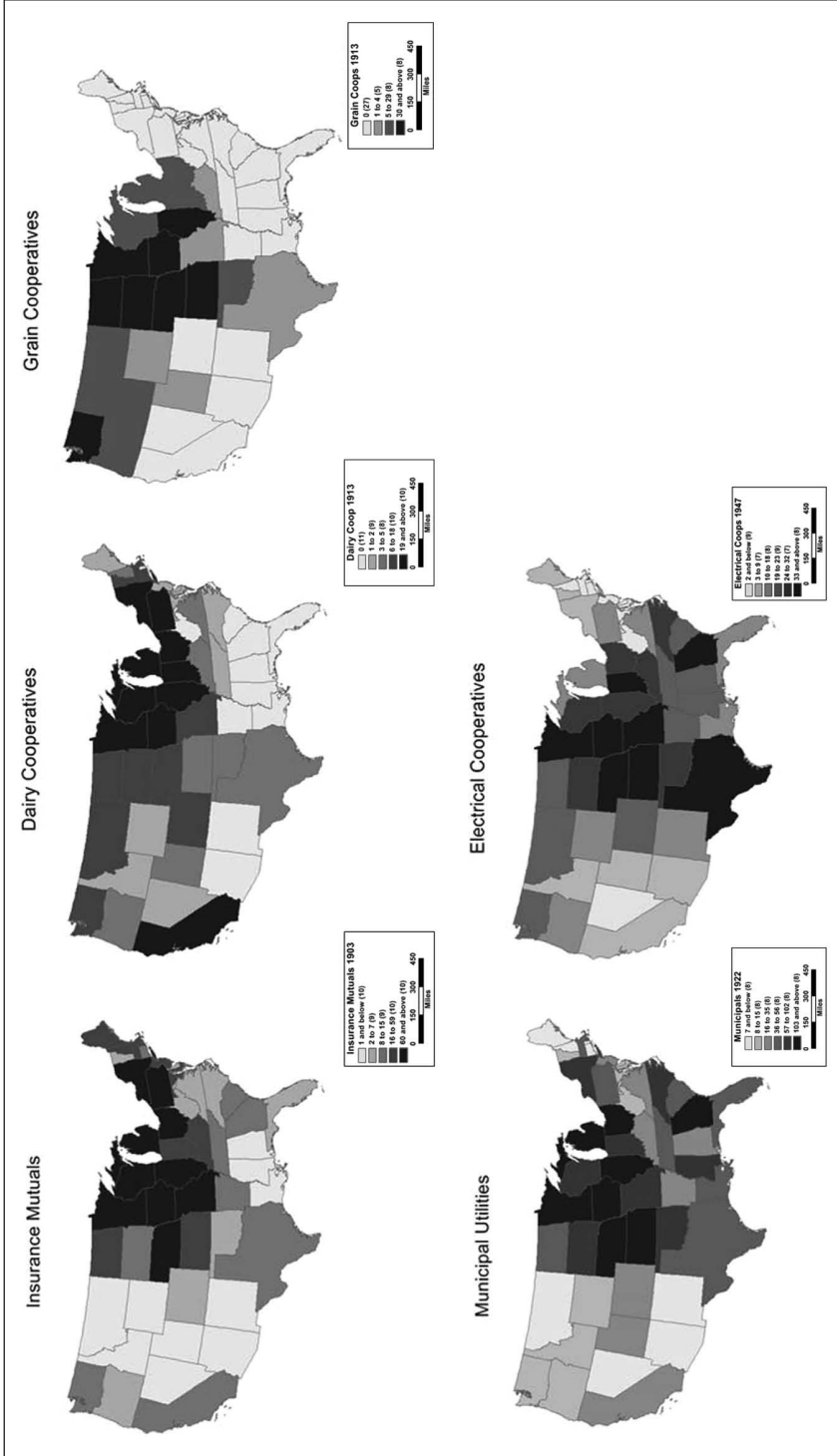


Figure 2. Mutuals, Cooperatives and Municipal Electrical Utilities in the American States.

The conjunction of anti-corporate movements, corporate counter-mobilization, and the spread of cooperatives make this an excellent context to consider interactions between social movements and diffusion. Was the Grange a political condition for the diffusion of cooperative forms across states and industries? Read through the historical record, the arguments depicted in panels B1 and B2 of Figure 1 support two hypotheses:

H1a: When anti-corporate movements like the Grange are absent or weak, the prevalence of cooperatives in an industry among states will have little or no positive effect on: (1) the subsequent proliferation (or growth in the number) of cooperatives within the industry *in other states*, or (2) the proliferation of cooperatives or related forms in *other industries*.

H1b: As anti-corporate movements like the Grange grow stronger, increased prevalence of cooperatives among states will have greater positive effects on: (1) the subsequent proliferation of cooperatives within the industry *in other states*; and (2) the proliferation of cooperatives in *other industries*.

These hypotheses take movements as “bridges” that make connections between states or sectors, enabling diffusion and legitimation effects for contested forms, and “amplifiers” that strengthen positive prevalence effects. They are agnostic about how movements affect competition or negative prevalence effects, leaving that as an empirical matter.

## Methods and Data

### *Analytical Strategy and Dependent Variables*

I analyze diffusion and its dependence on movements by examining geographical effects, or the spread of cooperatives across states within a sector, and cross-sector effects, or the spread of cooperatives across industries. Focusing on dairy and grain from 1913 to 1927, I analyze the spread of cooperatives across states within each sector, and the spread of cooperatives both across agriculture sectors (from dairy to grain, and from grain to dairy) and from insurance to agriculture (from insurance to dairy, and from insurance to grain). I focus on these two sectors as the institutionalization of dairy and grain elevator cooperatives in the USA coincided in time with the Grange’s marked revival in the first two decades of the 20th century. I add insurance to the cross-sector pairs considered because many insurance mutuals were farmer organizations, because insurance mutuals appeared to pre-date the institutionalization of cooperatives in agriculture, and because data on mutuals are available from 1903, ten years before the earliest observations of dairy and grain elevator cooperatives.

Ideally, I would model the adoption or formation of cooperatives among a county or state’s farmers at a given time period. But data on cooperatives in the early 20th century are only available as state-level aggregates, so I take proliferation or the growth in the number of cooperatives per state as dependent variables. I then model diffusion effects or mutualism as the effects on proliferation of the prevalence of cooperatives in different states or sectors in the prior period. I model *geographical* diffusion as the effects on the growth of cooperatives in a state at time  $t$  of the number of the same type of cooperatives in *other states* at time  $t-1$ , weighted by their proximity to the focal state. I model *cross-sector* effects as the effects on the growth of cooperatives in a state at time  $t$  of the density of *other types of cooperatives* in that and surrounding states at time  $t-1$ , weighted by proximity.<sup>1</sup> I include linear and squared prevalence terms to model the unconditional effects in panels A1 and A2 of Figure 1.

I use interaction terms to assess whether diffusion effects are conditional on movement strength. I multiply the linear prevalence term by a standard measure of movement strength, the number of Grange members per state, to test the hypothesis that challenger movements enable or amplify diffusion effects. I then add that term and an interaction term for prevalence squared to the unconditional effect models to see if prevalence effects vary by movement strength, as depicted by panel B1 or B2 of Figure 1.

Data on agricultural cooperatives came from the US Department of Agriculture (Elsworth, 1928, 1930). Its reports provide the number of dairy cooperatives operating per state for five panels (1913, 1915, 1922, 1925, and 1927) and grain elevator cooperatives for three panels (1913, 1915, and 1925).<sup>2</sup> Data on insurance mutuals were compiled as described in Schneiberg (2002) from Best's *Insurance Report* and Spectator's *Insurance Year Book*—annual censuses of insurers—for six state-level panels (1903, 1909, 1914, 1919, 1924, and 1929). Data on Grange members per state came from Tontz (1964) and were subjected to linear interpolations to fill in values for missing years.

### Controls, Models, and Estimation

All models include controls to tap “local” determinants of cooperatives and eliminate confounds in geographical correlations due to the common characteristics of states and conditions within them. All models include population and either gallons of milk produced or bushels of wheat grown per capita to control for state size, the importance of dairy or grain as industries for each state, and the distribution of dairy and grain production. All models also control for the prices farmers receive for produce in a state (price per gallon of milk, price per bushel of wheat) to take into account how low prices paid farmers were one reason farmers formed cooperatives.

Moreover, all models control for local conditions that affect farmers' capacities to act collectively to organize cooperatives. They include population density, the percent population change within a state over the previous decade, the percentages of states' populations that are non-white or foreign-born white, and a measure of farm heterogeneity (by farm size). Low population density, ethnic and economic heterogeneity, and population turnover can make organizing collectively difficult and suppress cooperative formation, whether by making communication and contact among cooperators harder, fostering heterogeneous and conflicting interests, or weakening existing social ties (Hansmann, 1995). Alternatively, low population density and high proportions of foreign-born whites can increase cooperative formation (Schneiberg et al., 2008). Low density increases the costs of collecting or distributing produce, leaving for-profit corporations without incentives to serve those areas, and farmers to their own cooperative devices for distribution and marketing. Numerous foreign-born whites can reflect Scandinavian and German immigrants, who brought cooperative templates and organizing experiences with them from their home countries.

Data for these variables come from the US Census reports on Population, Agriculture and Manufacturers for 1900, 1919, 1920, and 1930. These are decennial data, so I use linear interpolation for panel years. Calculation of variables was straightforward, including farmer heterogeneity, which was an index of qualitative variation computed from reports of the number of farms in each of seven size categories, measured by acre per farm. All independent variables are time varying and lagged one year.

I first analyze whether the growth of dairy and grain cooperatives per state reflects local responses to problems and conditions within states and industries, presenting control models for both industries. I then analyze how cooperatives in dairy and grain grew in numbers in response to broader communities, the prevalence of cooperatives in other states and sectors, and the interaction of diffusion and Granger mobilization. I look first at the geographical spread of cooperatives within

industries, analyzing unconditional and conditional prevalence effects for each sector. I then look at the spread of cooperatives across industries, analyzing cross-form effects for the sector pairs.

I estimate models via the `nbreg` and `zinbreg` routines in STATA 12, using the robust cluster (by state) option to correct for heteroskedasticity and to take into account correlated observations within states over time. I fit negative binomial models as the dependent variables are counts and because they do not assume that the variance of the outcome is the same as its mean. I used zero-inflated models to determine if the number of zeros affected the findings.

## Results

### *State-Level Economic and Social Conditions*

Table 1 presents the control models for the growth in the number of dairy and grain elevator cooperatives per state. Cooperatives proliferated in response to local economic and social conditions. The model for dairy shows positive, significant coefficients for population and milk produced per capita, and statistically significant negative coefficients for the price of milk and percent non-white population. Dairy cooperatives grew most in numbers in heavily populated and major milk-producing states, where dairy farmers received low prices for milk, and in communities characterized by few racial divisions. The model for grain shows positive, significant coefficients for population and wheat produced, and negative, significant coefficients for price of wheat, population density, percentage non-white, and farm heterogeneity. Grain cooperatives proliferated most in large, but sparsely populated, grain-growing states, where grain growers received low prices for their crops, and in relatively homogeneous communities with few racial divisions and differences in farm size. These results are consistent with prior research. Farmers were more likely to organize cooperatives when they faced poor terms of trade in local markets with “combines” and “middlemen,” and when local social structures and communities eased collective organization.

The coefficient for Grange strength was not significant for dairy, and negative and significant for grain. This is also consistent with prior findings. Movements affected cooperatives in this period, but did so mainly by moderating the effects of other factors.

### *Geographical Diffusion*

*Dairy.* Table 2 presents additional models for the growth in the number of dairy cooperatives per state between 1913 and 1927. Model 1 adds to the controls the linear and squared terms for the number of dairy cooperatives operating in other states, weighted by proximity, to capture the unconditional effects of geographical diffusion within the industry. Models 2 and 3 add terms for the interactions between Grange strength and the prevalence of dairy cooperatives in surrounding states.

The results from model 1 show a positive, significant coefficient for the linear prevalence term, and an insignificant coefficient for the squared term. Controlling for state-level conditions, dairy cooperatives proliferated more extensively within states as they become increasingly common in surrounding states. This is evidence that cooperative forms diffused across states within the dairy industry. However, adding interaction terms reveals that this process depended entirely on the presence and strength of the Grange. Adding the linear interaction term in models 2 and 3 reveals insignificant coefficients for the prevalence terms, and positive, significant coefficients for the interaction between prevalence and Grange strength. Adding an interaction term in model 3 for prevalence squared yielded a negative, but insignificant coefficient. Increasing Grange strength *established* and

**Table 1.** Negative Binomial Models of the Effects of Local Conditions on the Change in Number of Cooperatives per State, 1913–1917.

	Dairy cooperatives	Grain elevator cooperatives
<b>Controls</b>		
Dairy/grain coops (t-1)	0.00476*** (0.00126)	0.00931*** (0.00215)
Population	2.97e-07*** (6.57e-08)	4.49e-07*** (1.21e-07)
Milk gallons/grain bushels per capita	0.00412*** (0.00122)	0.0189*** (0.00692)
Price paid per gallon/bushel	-4.247* (2.519)	-2.267*** (0.585)
Population density	-0.00243 (0.00165)	-0.00851*** (0.00322)
% Population change	-0.00135 (0.00726)	0.0105 (0.00918)
% Foreign-born white	0.0266 (0.0242)	-0.0478 (0.0330)
% Non-white	-0.113*** (0.0305)	-0.151*** (0.0587)
Farm heterogeneity	-2.793 (3.991)	-11.42** (4.455)
National Grange members	-1.24e-05 (1.24e-05)	-4.25e-05*** (1.50e-05)
Constant	5.363 (3.770)	16.40*** (4.062)
Observations	151	120

Robust standard errors in parentheses.

\*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .

increased the positive linear effect on the growth of dairy cooperatives within a state of the prevalence of dairy cooperatives in surrounding states. These results support hypotheses 1a and 1b, with the Grange acting as both bridge and amplifier for diffusion or positive prevalence effects.

Figure 3 graphs how geographical prevalence effects depended on Granger mobilization. The top panel graphs effects for dairy and is based on model 2. It gives the estimated relation between the (log) growth in the number of dairy cooperatives within a state and the prevalence of dairy cooperatives in surrounding states at t-1 for five different levels of Grange strength. The line for zero Grange members is flat. When the Grange was absent, increasing the prevalence of dairy cooperatives in surrounding states had no effect on the proliferation of dairy cooperatives within a state. But the lines for higher levels of Grange strength have positive and increasing slopes, reflecting how Granger mobilization turned on and increased diffusion across states in the dairy industry. With Grange strength at its median, standard deviation increases in the prevalence of dairy cooperatives in surrounding states increased the predicted growth in the number of dairy cooperatives within a state by 14 percent. As Grange strength grew through the 75th and 90th percentiles to its peak, these geographical effects strengthened substantially. Standard deviation increases in prevalence increased the growth of dairy cooperatives within a state, respectively, by 30, 49, and 70

**Table 2.** Negative Binomial Models of Geographical (Within Sector) Effects on the Change in Number of Dairy Cooperatives per State, 1913–1927.

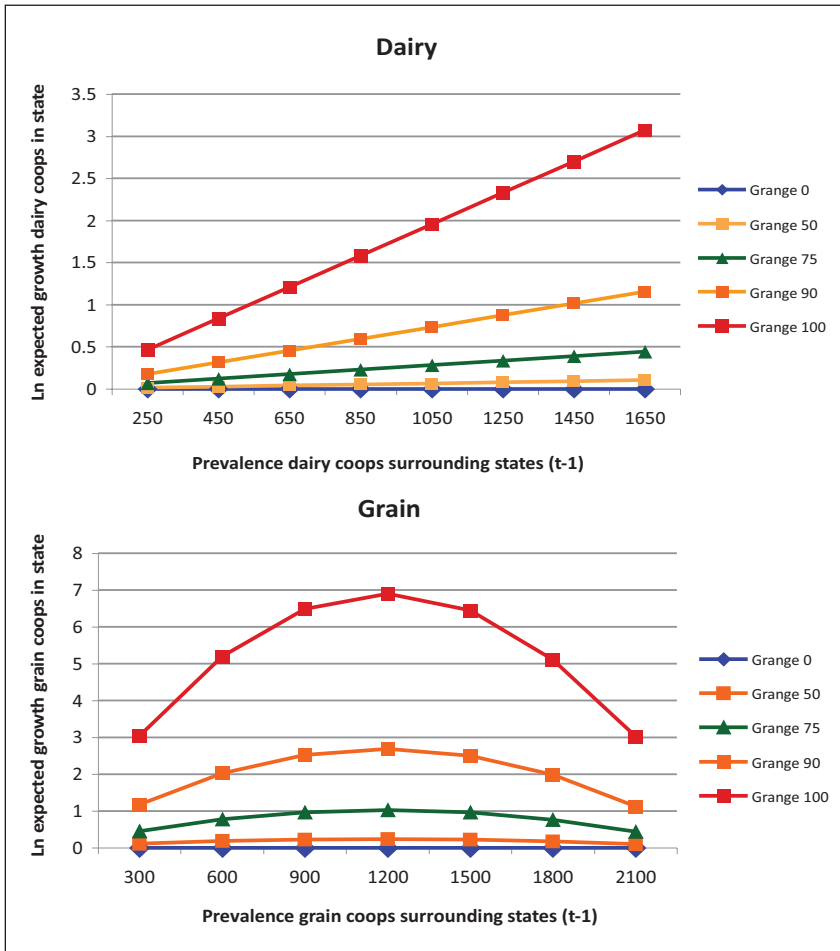
	(1)	(2)	(3)
<b>Controls</b>			
Dairy coops (t–1)	0.00461*** (0.00107)	0.00452*** (0.00103)	0.00444*** (0.000989)
Population	2.51e–07*** (7.20e–08)	2.53e–07*** (6.93e–08)	2.46e–07*** (6.91e–08)
Milk gallons per capita	0.00313*** (0.00128)	0.00322*** (0.00124)	0.00314*** (0.00124)
Price paid for gallon	–7.709** (3.016)	–7.523** (2.987)	–8.175*** (3.117)
Population density	–0.00218 (0.00171)	–0.00233 (0.00171)	–0.00226 (0.00174)
% Population change	0.000457 (0.00711)	–0.000720 (0.00721)	–0.000303 (0.00730)
% Foreign–born white	0.0346 (0.0239)	0.0364 (0.0237)	0.0382 (0.0238)
% Non–white	–0.107*** (0.0288)	–0.108*** (0.0292)	–0.106*** (0.0288)
Farm heterogeneity	–2.474 (3.636)	–2.353 (3.582)	–2.389 (3.606)
National Grange members	–8.84e–06 (1.27e–05)	–3.73e–05** (1.83e–05)	–9.73e–05** (4.58e–05)
<b>Geographical (within sector) diffusion</b>			
Dairy coop prevalence (other states)	0.00195** (0.000994)	0.00130 (0.00106)	0.000839 (0.00107)
Dairy coop prevalence <sup>2</sup> (other states)	–5.92e–07 (4.42e–07)	–3.68e–07 (4.60e–07)	–9.01e–08 (4.71e–07)
Prevalence by Grange		3.00e–08*** (1.43e–08)	1.82e–07* (1.00e–07)
Prevalence <sup>2</sup> by Grange			–8.64e–11 (5.41e–11)
Constant	4.652 (3.566)	4.902 (3.500)	5.241 (3.529)
Observations	151	151	151

Robust standard errors in parentheses.

\*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .

percent. Cooperative forms diffused across states in dairy, and positive prevalence effects increased as the Grange grew in strength. But geographical diffusion only occurred when the Grange was present.

*Grain.* Table 3 presents models of the growth in the number of grain cooperatives per state. Model 1 includes the linear and squared terms for the prevalence of grain cooperatives in surrounding states to capture the unconditional effects of geographical diffusion in grain. Models 2 and 3 add terms for the interactions between Grange strength and prevalence.



**Figure 3.** Geographical Effects for Dairy and Grain by Grange Strength.

Model 1 shows a positive, significant coefficient for the linear prevalence term, and a smaller negative and significant coefficient for the squared term. Grain cooperatives proliferated within states as they become increasingly common in surrounding states, but at a decreasing rate, indicating geographical diffusion and curvilinear prevalence effects across states within grain. However, as was the case in dairy, geographical effects in grain depended on the presence and strength of the Grange. In model 2, the coefficient for the interaction term did not reach significance. Yet in model 3, the results show: insignificant coefficients for both of the prevalence terms; a positive, significant coefficient for the interaction between Grange strength and the linear prevalence term; and a smaller, negative and significant coefficient for the interaction between Grange strength and the squared prevalence term. Consistent with hypotheses 1 and 2, and as in dairy, increasing Grange strength established and increased the positive linear effects on the growth of grain cooperatives within a state of their prevalence in surrounding states. Yet, increasing Grange strength also established and amplified negative squared effects and decreasing returns to prevalence as the number of grain cooperatives in surrounding states reached high levels.



**Table 3.** Negative Binomial Models of Geographical (Within Sector) Effects on the Change in Number of Grain Cooperatives per State, 1913–1927.

	(1)	(2)	(3)
<b>Controls</b>			
Grain coops (t-1)	0.00913*** (0.00227)	0.00899*** (0.00226)	0.00878*** (0.00216)
Population	4.81e-07*** (1.12e-07)	4.71e-07*** (1.21e-07)	4.73e-07*** (1.23e-07)
Wheat bushels per capita	0.0177*** (0.00682)	0.0178*** (0.00684)	0.0169** (0.00698)
Price paid per bushel	-2.691*** (0.757)	-2.541*** (0.867)	-2.817*** (0.890)
Population density	-0.00855*** (0.00326)	-0.00865*** (0.00326)	-0.00867*** (0.00325)
% Population change	0.0108 (0.00963)	0.0106 (0.00958)	0.0100 (0.00955)
% Foreign-born white	-0.0559 (0.0349)	-0.0557 (0.0352)	-0.0542 (0.0351)
% Non-white	-0.171*** (0.0635)	-0.168*** (0.0633)	-0.170*** (0.0630)
Farm heterogeneity	-11.33** (4.542)	-11.24** (4.459)	-11.48** (4.539)
National Grange members	-5.09e-05*** (1.43e-05)	-6.71e-05** (3.24e-05)	-0.000137*** (3.25e-05)
<b>Geographical (within sector) diffusion</b>			
Grain coop prevalence (other states)	0.00179** (0.000773)	0.00143 (0.000952)	0.000978 (0.000936)
Grain coop prevalence <sup>2</sup> (other states)	-7.25e-07** (3.49e-07)	-6.02e-07 (4.02e-07)	-4.33e-07 (3.92e-07)
Prevalence by Grange		1.34e-08 (1.93e-08)	1.93e-07*** (7.06e-08)
Prevalence <sup>2</sup> by Grange			-8.09e-11** (3.42e-11)
Constant	16.37*** (4.143)	16.30*** (4.122)	17.18*** (4.270)
Observations	120	120	120

Robust standard errors in parentheses.

\*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .

Figure 3's lower panel graphs these effects. It shows the estimated relationship between the proliferation of grain cooperatives within a state and the prevalence of grain cooperatives in surrounding states at  $t-1$  for different levels of Grange strength. As with dairy, the curve is flat when the Grange was absent. Prevalence had no effect on the proliferation of grain cooperatives within a state. But as Grangers mobilized and grew in strength, curvilinear prevalence effects across states appeared and increased in magnitude. Increasing the prevalence of grain cooperatives in surrounding states increased and then decreased the proliferation of cooperatives within states when the Grange was present, and did so with increasing force as Grange strength increased.

**Table 4.** Negative Binomial Models of Cross-Sector Effects Between Agricultural Sectors on the Change in Number of Dairy and Grain Cooperatives Per State, 1913–1927.

	Effects from grain to dairy			Effects from dairy to grain		
<b>Cross-sector effects</b>						
Prevalence of grain/dairy coops	0.00128*** (0.000484)	0.000997* (0.000555)	0.000932* (0.000555)	0.00306*** (0.000854)	0.00255** (0.00107)	0.00235** (0.00107)
Prevalence of grain/dairy coops <sup>2</sup>	-3.71e-07** (1.54e-07)	-2.98e-07* (1.68e-07)	-2.64e-07 (1.71e-07)	-1.08e-06*** (3.03e-07)	-9.39e-07*** (3.46e-07)	-8.53e-07** (3.48e-07)
Prevalence grain/dairy by Grange		1.07e-08* (6.21e-09)	5.59e-08 (3.95e-08)		2.98e-08 (3.27e-08)	1.42e-07 (1.08e-07)
Prevalence grain/dairy <sup>2</sup> by Grange			-1.97e-11 (1.66e-11)			-5.74e-11 (5.69e-11)
Observations	151	151	151	120	120	120

Robust standard errors in parentheses.

\*Significant at 10%; \*\*significant at 5%; \*\*\*significant at 1%.

Note: All models also include population, milk produced or grain grown per capita, price of milk or wheat, population density, population change, percent foreign-born white, percent nonwhite, farm heterogeneity and Grange members.

### Cross-Sector Diffusion

*Across agricultural sectors.* Table 4 presents models for growth in the counts of dairy and grain cooperatives per state as functions of the prevalence of cooperatives in the other agricultural sector. The three models on the left examine the diffusion of cooperative forms from *grain to dairy*. They model the effect on dairy cooperatives of the prevalence of grain cooperatives in the same and surrounding states. The three models on the right analyze the diffusion of forms from *dairy to grain*. They model the effect on grain cooperatives of the prevalence of dairy cooperatives in the same and surrounding states. The first model in each set includes terms for the prevalence of cooperatives in the other sector to capture unconditional cross-sector effects. The second and third models add interactions to see if cross-sector effects depend on Grange strength.

The left-hand models for *dairy* cooperatives show cross-sector effects from grain to dairy. In the first model, a positive, significant coefficient for the linear prevalence term is coupled with a significant, negative but smaller coefficient for the squared prevalence term. Increasing the number of grain cooperatives within a state and in surrounding states increased the growth of dairy cooperatives within that state, albeit at a decreasing rate. However, the nature and magnitude of those effects depended on the Grange. Adding an interaction for the linear prevalence term in the second model produces: significant positive and negative coefficients, respectively, for the linear and squared prevalence terms; and a positive, significant coefficient for the interaction between Grange strength and the linear prevalence term. Adding the interaction for the squared prevalence term yields an insignificant coefficient. Thus, increasing the number of grain cooperatives increases the growth of dairy cooperatives, at a decreasing rate, even in the absence of the Grange. But, consistent with hypothesis 2, increasing Grange strength increased that positive linear effect, amplifying cross-form diffusion.

Figure 4 graphs cross-sector effects for the four industry pairs. The upper left-hand chart graphs the effects from grain to dairy for different levels of Grange strength. There is an effect at zero Grange members, and it is curvilinear. But the appearance and increasing strength of the Grange strengthened the positive linear prevalence effects. It both shifted the curve upward and unbent the

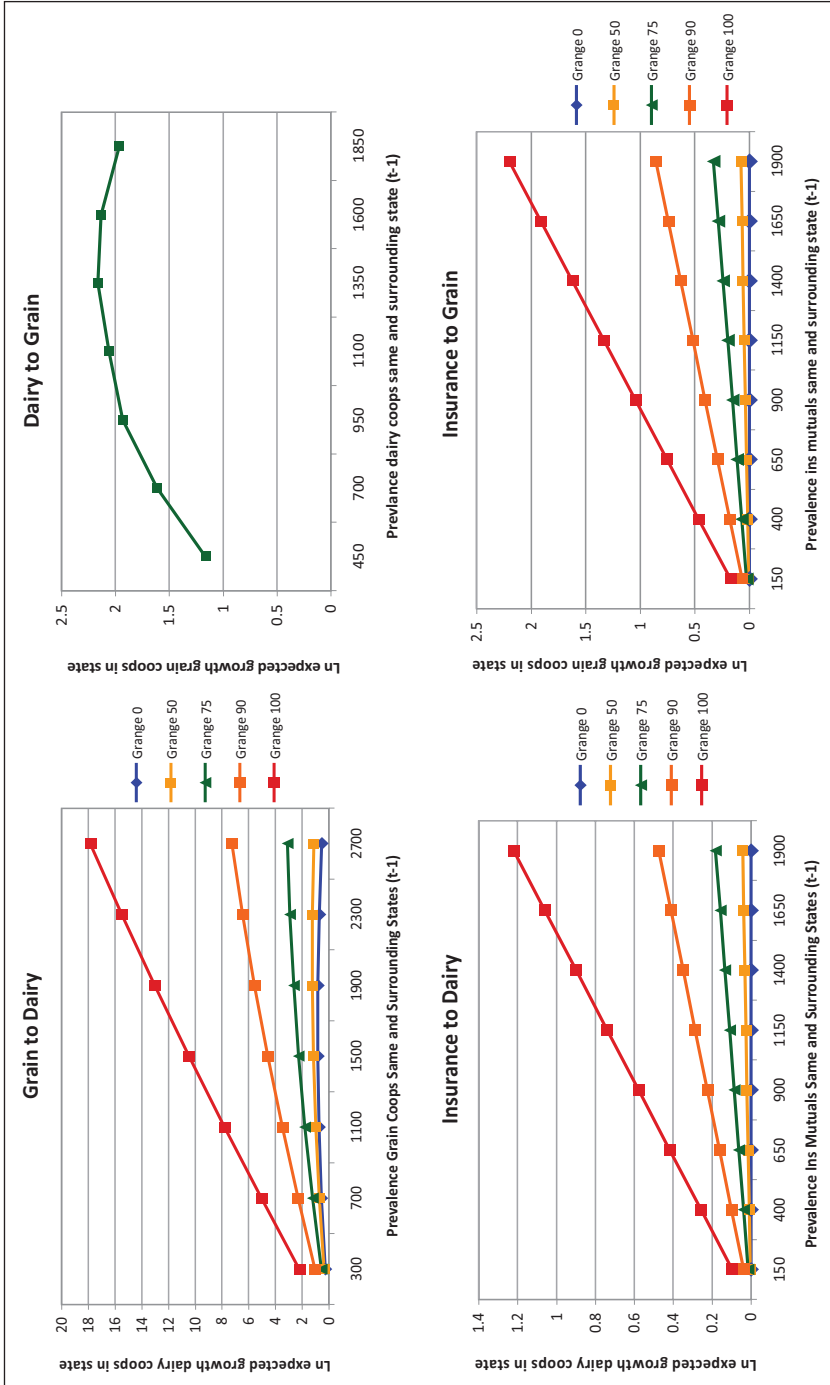


Figure 4. Cross-Sector Effects for Four Industry Pairs.

curve, dramatically reducing the relative importance of negative prevalence effects at high levels of Grange strength.

The models for *grain* cooperatives in Table 4 also reveal cross-sector effects from *dairy to grain*. However, these effects do not depend on Grange strength. All three models couple positive, significant coefficients for linear prevalence terms with smaller, statistically significant negative coefficients for squared prevalence terms. None of the coefficients for interaction terms was significant. This indicates an unconditional cross-sector effect, as shown in the upper right-hand panel of Figure 4. Increasing the number of grain cooperatives within states and in surrounding states increased the proliferation of dairy cooperatives within the state, but at a decreasing rate, independent of the Grange.

*Insurance to agriculture.* Table 5 presents models for the growth in the number of dairy and grain cooperatives per state as functions of insurance mutual prevalence. The three models on the left examine the diffusion of forms from *insurance to dairy*. They model the effect on dairy cooperatives of the number of insurance mutuals in the same and surrounding states. The three models on the right analyze the diffusion of cooperative forms from *insurance to grain*. They model the effect on grain cooperatives of the prevalence of insurance mutuals in the same and surrounding states.

Both analyses reveal the same pattern of cross-sector effects from insurance to dairy and to grain. Both effects depended completely on the presence and strength of the Grange. None of the coefficients for linear and squared terms for the prevalence of insurance mutuals was significant in any of the models. But the coefficients for the interaction between Grange strength and the linear prevalence term for mutuals were significant for both sectors. Increasing Grange strength established and increased the positive linear effect of insurance mutuals on the proliferation of

**Table 5.** Negative Binomial Models of Cross-Sector Effects from Insurance to Agriculture on the Change in Number of Dairy and Grain Elevator Cooperatives Per State, 1913–1927.

	Effects from insurance to dairy			Effects from insurance to grain		
<b>Cross-sector effects</b>						
Prevalence insurance mutuals	0.000749 (0.000516)	0.000665 (0.000504)	0.000349 (0.000601)	0.000934 (0.00152)	0.000737 (0.00144)	0.00139 (0.00171)
Prevalence insurance mutuals <sup>2</sup>	-3.31e-07 (2.43e-07)	-3.38e-07 (2.39e-07)	-1.76e-07 (2.83e-07)	-5.72e-07 (7.84e-07)	-5.41e-07 (7.56e-07)	-8.67e-07 (8.94e-07)
Prevalence mutuals by Grange		1.17e-08*** (4.36e-09)	5.43e-08 (4.03e-08)		1.93e-08 ++ (1.25e-08)	-1.33e-07 (2.73e-07)
Prevalence mutuals <sup>2</sup> by Grange			-2.16e-11 (1.90e-11)			7.94e-11 (1.42e-10)
Observations	151	151	151	120	120	120

Robust standard errors in parentheses.

\*Significant at 10%; \*\*significant at 5%; \*\*\*significant at 1%; ++significant at 1% one tail.

Note: All models also include population, milk produced or grain grown per capita, price of milk or wheat, population density, population change, percent foreign-born white, percent nonwhite, farm heterogeneity and Grange members.

cooperatives in dairy and in grain. Consistent with the hypotheses, the Grange was a bridge and an amplifier for cross-sector diffusion from insurance to agriculture.

Figure 4's bottom two panels graph cross-sector effects from insurance to dairy and grain. They show a flat line indicating no cross-sector effects when Grange strength was zero, and increasingly positive linear effects as the Grange grew in strength. Cooperativism diffused from insurance to dairy and grain—but only when the Grange was present. And it diffused across those sectors with substantially greater force as the Grange grew in strength. Standard deviation increases in insurance mutuals boosted the number of dairy cooperatives operating per state in subsequent periods by 1.4, 6, 17, and 48%, respectively, as Grange numbers grew from the 50th, 75th, and 90th percentile to their peak, and the number of grain elevator cooperatives by 3, 13, 36, and 122 percent.

### *Zero-Inflated Models*

Subsequent analyses reran the foregoing using zero-inflated negative binomial models to adjust for the large number of zeros in the data. Zero-inflated models produced virtually identical results as those just reported. They showed diffusion effects in all six sets of analysis, and diffusion effects conditional on Grange strength in five. (Results available on request.) They showed increasingly curvilinear relations for geographical diffusion effects within grain as Grange strength increased (as in Figure 3); increasingly positive cross-sector effects from grain to dairy with the unbending of the curve pattern (as in Figure 4); unconditional curvilinear cross-sector effects from dairy to grain (as in Figure 4); and increasingly positive cross-sector effects from insurance to dairy and grain as the Grange grew in strength. There were only two differences in results. Zero-inflated models showed increasingly curvilinear rather than increasingly linear effects for diffusion within dairy, producing a pattern more like that for grain in Figure 3. Models for cross-sector effects from insurance to dairy showed the same shifting and unbending of the curve relation as shown in Figure 4 for the grain-to-dairy effect.

### **Discussion**

The foregoing provides strikingly consistent evidence that movements are political conditions for the diffusion of contested innovations. Mutualism and diffusion effects appeared in all six cases considered. Cooperatives diffused across states and across sectors in the early 20th-century US economy, institutionalizing alternatives to corporations within American capitalism. But in five of those six cases, diffusion effects depended on the presence and strength of the Grange, a key anti-corporate movement. In all five cases, increasing Grange strength amplified positive prevalence effects. It enabled and accelerated the spread of cooperatives across states within dairy and grain. It accelerated the diffusion of cooperatives in agriculture from grain to dairy. It enabled and accelerated the spread of cooperatives from insurance to agriculture. This is consistent support for hypotheses 1a and 1b. Anti-corporate movements served as a bridge and an amplifier for mutualism and diffusion for these contested innovations.

The Grange also shaped negative prevalence effects in two subsets of cases. In one pattern, the Grange activated and amplified counteracting dynamics of decreasing returns at high densities, yielding conditional curvilinear effects. One possibility is that the Grange activated both diffusion and competition as it established connections between states and industries. Cooperatives might have increasingly competed with one another at high prevalence levels as Grangers defined states and sectors as being in the same category, expanded flows of ideas and expertise, or otherwise forged a common market. This explanation gains support from the fact

that curvilinear relations appeared for geographical effects within industries (grain and perhaps dairy), which is where we would most expect competition among cooperatives for sales, supplies, and members.

Alternatively, conditional curvilinear effects might reflect complex relations between mobilization and prevalence. The Grange itself institutionalized cooperatives as established forms as it grew strong, which could have left cooperatives' legitimacy less dependent on their prevalence elsewhere. Prevalence would exhaust its legitimating or exposure effects more quickly where the Grange had done its work, yielding decreasing returns to prevalence as Grange strength grew. Furthermore, very high levels of Granger mobilization might have heightened political contentiousness and reactivated corporate elites, leaving them increasingly ready to re-mobilize against cooperatives when they threatened to spill over into new markets. Such renewed counter-mobilization would suppress cooperatives at high densities, which would also yield negative prevalence effects and curvilinear relations conditional on Grange strength.

In the second pattern, the Grange rendered negative prevalence effects relatively less important, amplifying positive linear effects with sufficient force that it shifted up and unbent the diffusion curve. This pattern appeared for cross-sector effects from grain (and perhaps insurance) to dairy and suggests that anti-corporate movements increased carrying capacities in some way. The Grange might have tempered economic competition between different cooperative forms by providing dairymen with infrastructure for organizing collectively or by supporting resource-sharing arrangements in which grain cooperatives operated dairy collection facilities. But this pattern might also reflect successful Granger mobilization to support dairy cooperatives politically via enabling legislation. By blunting corporate attacks in the political arena, Grangers likely mitigated the negative effects of corporate counter-mobilization against dairy coops that occurred as cooperativism spilled over into new markets.

While space and data limits preclude exploring these possibilities further, the framework does support new questions about movements and institutional processes. To simplify matters theoretically, I focused on how anti-corporate movements protect the spread of alternatives from mobilization by elites against innovations. This scenario fit the case. Yet, the framework can be inverted to theorize situations where challengers mobilize against innovations advanced by corporate elites. As challengers mobilize to contest corporate practices, they can suppress rather than amplify prevalence effects, even breaking possibilities for diffusion. Absent challenges, elite innovations could spread rapidly via standard mechanisms of mutualism and diffusion. Yet as anti-corporate movements emerge to secure laws against elite innovations, discredit those practices, and boycott organizations, they will dampen prevalence effects, pushing diffusion curves down, and producing the reverse patterns than those shown here.

I also simplified matters by taking elite mobilization against innovations as more or less constant to examine how diffusion relations strengthen as challenger movements for alternatives grow in strength. But political contestation is often more complex and evolves over time, with mobilization evoking counter-mobilization, and new tactics and organizing drives on one side creating new advantages or disadvantages on the other (Meyer & Staggenborg, 1996; Zald & Useem, 1987). One could capture these dynamics via more complex hypotheses about movements and diffusion, arguing that challenger mobilization amplifies diffusion effects for new forms, pushing curves upward, while corporate counter-mobilization against new forms dampens diffusion, pushing the curves back down. One could hypothesize further that mobilization and counter-mobilization will alter the form or innovation at issue.

Finally, movements may also amplify prevalence effects for innovations that are not contested for reasons noted above. But such innovations might spread via the standard mechanisms even in

the absence of movements for change. And if challenger movements are less vital for mutualism or diffusion when innovations are not contested, they will play a weaker role as amplifiers or bridges, yielding smaller shifts in prevalence curves as they strengthen than they would for contested innovations.

## Conclusion

In a seminal article, Strang and Meyer (1993) argue that theorization, the creation of analogies, or categorizations that facilitate comparisons among organizations represent a potent *institutional* condition for diffusion. This article develops the parallel claim that social movements can serve as a *political* condition for the diffusion of contested alternatives. When new forms are contested, institutional change will not result from conventional organizational processes of mutualism or diffusion alone. Rather, change will depend on the combination of diffusion or mutualism with sustained and effective mobilization by movements for alternatives.

This study helps advance organization studies and its integration with movement research. First, it clarifies the roles that anti-corporate forces play in institutionalizing new forms, shedding new light on how movements and institutional dynamics together produce change. Scholars have analyzed how anti-corporate movements mobilize boycotts, protests, and the like outside existing channels to disrupt existing arrangements and secure policies from states or corporations, sparking legitimacy crises, early victories or settlements, and the diffusion of reforms (Bartley & Child, 2011; Hargrave & Van de Ven, 2006; King, 2008; Rojas, 2006; Schneiberg & Soule, 2005). They have traced how anti-corporate movements also mobilize within and with existing institutions (den Hond & de Bakker, 2007), working as institutional forces, whether as motors of theorization or identity formation (Armstrong, 2005; Lounsbury et al., 2003; Weber et al., 2008), agents of diffusion or recombination (Clemens, 1997; Scully & Segal, 2002), promoters of private regulation (Bartley, 2007; King & Pearce, 2010), or generators of new organizations (Hiatt et al., 2009; Rao et al., 2000; Swaminathan & Wade, 2001). They have also shown how institutions serve as opportunity structures, providing movements with leverage for translating numbers, resources, and activity into outcomes (Davis & Thompson, 1994; King, 2008; Soule & Olzak, 2004).

The foregoing highlights another way in which anti-corporate movements combine with institutional processes to transform organizational fields. Anti-corporate movements fuel change not just through their direct or indirect effects on organizations or states, but also by serving as political conditions for the diffusion of new forms and practices across organizations and states. As political forces, movements turn on and amplify mutualism and diffusion effects. They serve as “bridges” in various ways, enabling the spread of innovations that might otherwise die stillborn or remain isolated in the face of corporate attacks, and, as “amplifiers,” increasing the impact of local successes for other organizations.

Second, this study provides new evidence of movement effects on outcomes, mitigating concerns about the lack of such showings. It thus joins a growing body of quantitative empirical work which documents how movements shape organizational outcomes, including changes in firms’ sales, stock prices, and reputations (Bartley & Child, 2011; King & Soule, 2007), the enactment of anti-trust, anti-takeover, and environmental laws (Vogus & Davis, 2005; Schneiberg & Soule, 2005), the adoption of recycling and domestic partner benefit programs (Briscoe & Safford, 2008; Lounsbury, 2001; Rojas, 2006), and the proliferation of new enterprise forms—*nouvelle cuisine* restaurants, wind-generating plants, and cooperatives—that compete with established firms (Rao et al., 2003; Schneiberg et al., 2008; Sine & Lee, 2009).

Third, this study contributes to recent research on diffusion processes. Scholars increasingly appreciate how the spread of foreign practices across nations can evoke controversy within receiving societies, identifying relational and cultural conditions for diffusion in the face of resistance. Organizations are unlikely to embrace such practices unless they are networked to innovating firms (Davis & Greve, 1997; Djelic, 1998), unless they span institutional fields in which those practices are legitimate (Fiss & Zajac, 2004; Sanders & Tuschke, 2007), or unless new practices are re-theorized, edited, or hybridized to fit with the local *lingua franca* (Czarniawska & Joerges 1996; Fiss et al., 2012; Sahlin & Wedlin, 2008). By linking movements with diffusion, the analyses here shed added light on the scope conditions for a core institutional process. When innovations are contested, mobilization and movements represent vital political conditions for diffusion.

This study's proof of concept also opens up a number of fruitful avenues for further research. Future efforts could profitably use heterogeneous diffusion modeling to analyze precisely how movements fuel diffusion (Briscoe & Safford, 2008; Soule, 2006; Strang & Tuma, 1993). Specifically, they could address whether movements foster diffusion by making receiving organizations more susceptible or able to respond to others' examples, by making early innovators more infectious or increasing the strength of their broadcast, or by making relevant organizations more proximate. As argued, elite mobilization against innovation blocks the signal and makes it harder for organizations to borrow from innovators, fragmenting fields and isolating successes. When potential adopters face boycotts, hostile legislation, or other forms of elite resistance, they will be less able or willing to embrace the message. But if movements can shift the balance of political forces within states or markets, whether by breaking boycotts or secure enabling legislation, would-be adopters will become increasingly susceptible. And by forging coalitions or neutralizing negative campaigns that distinguish would-be adopters from innovators, movements can close the gaps, creating political proximity among organizations and regions, while increasing the credibility or infectiousness of early victories.

Another fruitful direction for future research would incorporate the effects of corporate mobilization on diffusion, extending studies of corporate activism in the current period (den Hond & de Bakker, 2007; King, 2008; Walker, 2009). Data for corporate collective action were not available in my case. But with that data, one could address how the character of corporate mobilization varies, how corporate or other elites might themselves be divided, and how they might pursue strategies of cooptation, collaboration or domestication that would fuel, rather than suppress, the diffusion of alternatives, likely altering their character. Taking corporate mobilization as a variable is a key foundation for richer analyses of how dynamics of contention interact with diffusion, particularly if it could be done within a heterogeneous diffusion framework.

A third avenue for future study would involve exploring seminal arguments by Ruef (2000), Rao et al. (2003) and others about the role of movements in fostering or undermining organizational communities. This study's findings about prevalence effects suggest that mutualism and other density dependence relations depend on whether forms are contested and supporting movements are present. Less clear is whether the conditional effects observed would hold up with other populations or whether the curvilinear relations reflect competition or more complex relations between movements, prevalence, and legitimation. Both of these are questions that beg for further study.

Finally, this study suggests important possibilities for learning across periods and settings about the contentious transactions between movements, non-state organizations, and corporations. Globalization and the triumphs of markets over states have led scholars to criticize the movement literature's state-centric focus and to look instead at how movements work "outside" states to contest corporations. This has yielded sophisticated new understandings of the repertoires,



determinants, and effects of mobilization and corporate counter-mobilization in civil society (den Hond & de Bakker, 2007; King & Pearce, 2010; Van Dyke, Soule, & Taylor, 2004; Walker, Martin, & McCarthy, 2008). Yet, anti-corporate movements substantially pre-date the current era, even in that American “wellspring” of the corporation. Moreover, while Grangers and others used the state to challenge corporations, they often eschewed formal politics, mobilizing outside the state to contest corporations and craft alternative economic orders more directly, harnessing mass meetings, publicity campaigns, boycotts, churches, and social clubs to those ends. This is not to deny that current conditions pose new problems and possibilities for corporations, movements, and non-governmental organizations. But it does suggest that future research could profitably use comparisons across setting and periods to expand existing inventories of how movements contest corporations outside the state, whether by organizing alternatives to corporations, building private regulation, or by fueling diffusion across fields. Such comparisons would provide powerful leverage both for understanding what is distinctive about movements, corporations, and civil society in the current period, and for identifying more carefully the conditions that shape the repertoires, trajectories, and outcomes of their contention.

### **Acknowledgements**

Thanks to Michael Lounsbury, Sarah Soule, Brayden King, Charles Perrow, Steve Barley, Woody Powell, Carmenza Gallo, Dana Weinberg, Amy Hsin, Joseph Cohen, Holly Reed, other participants in the SCANCOR workshop at Stanford University and the Faculty Research Workshop in Sociology at CUNY-Queens College, as well as the reviewers and issue editors for helpful comments on earlier versions of this paper. The usual caveats apply.

### **Funding**

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

### **Notes**

1. I use a simple three-point (1.5, 1, 0.5) proximity scale to distinguish between the number at  $t-1$  of cooperatives within a state, in adjacent states, and in states farther removed, as this seemed a simpler and more effective way to capture conditions during the period than more elaborate weights based on distances between state capitals. Distinctions between events within a state, in adjacent states, and in more distant states were the most significant divides for exposure and comparison over that period. Limits in transportation and communication would render differences between states two or three steps away moot, and events in more distal states as diffuse background conditions. There are also no non-arbitrary weights for “within state” distances.
2. Lack of systematic data before 1913 and the decision to study widely diffused forms raises issues of left censoring and selective sampling of settings about which little can be done. Limited windows of observation focusing on the late histories of populations risk false null findings regarding prevalence effects, particularly for positive linear effects (Hannan & Carroll, 1992). Selective sampling of settings risks spurious prevalence effects (Denrell & Kovács, 2008). Fortunately, worries of false null findings for prevalence effects due to left censoring are not borne out here. Moreover, the current study conforms in two particulars to Denrell and Kovács’ (2008) recommendations for remedies for problems of selective sampling of settings: it studies cooperatives during and after their peak densities, and relies on dependent variables (counts and growth in counts) that might be less vulnerable to spurious findings than entry or exit rates.

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### Author biography

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