DIFFUSION IN ORGANIZATIONS AND SOCIAL MOVEMENTS: From Hybrid Corn to Poison Pills

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ABSTRACT

There has been rapid growth in the study of diffusion across organizations and social movements in recent years, fueled by interest in institutional arguments and in network and dynamic analysis. This research develops a sociologically grounded account of change emphasizing the channels along which practices flow. Our review focuses on characteristic lines of argument, emphasizing the structural and cultural logic of diffusion processes. We argue for closer theoretical attention to why practices diffuse at different rates and via different pathways in different settings. Three strategies for further development are proposed: broader comparative research designs, closer inspection of the content of social relations between collective actors, and more attention to diffusion industries run by the media and communities of experts.

What we really need is some new heroes in Engineering. I took that word from Deal's culture book, and I'm trying to identify the Engineering heroes.
Divisional Manager (Kunda 1992, p. 100)

They are making more out of this culture stuff than it's worth...I never read that stuff, maybe see it in passing. It's the same nauseating stuff they print in Business Week.
Group Manager (Kunda 1992, p. 180)

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INTRODUCTION

As the above quotations suggest, skillful players in business and other arenas display a keen sense of fashions and movements within their spheres of action. Much as academics are aware of intellectual currents and exemplars in their fields, we may be confident that executives know what new developments are hot and which are not, and that political activists are attuned to successes and disappointments elsewhere. And as the quotes emphasize, individuals counter as well as endorse and employ the cultural materials provided by a larger system of discourse.

Diffusion studies work with this awareness and its consequences by examining how practices spread. They provide an opportunity to locate and document social structure, where we consider how patterns of apparent influence reflect durable social relations. And they provide an opportunity to observe the cultural construction of meaning, where we learn how practices are locally and globally interpreted, and ask why some practices flow while others languish.

This review treats contemporary uses of diffusion arguments within the fields of organizations and social movements. Diffusion imagery, models, and explanations are on the rise in both fields and with clearly productive effect. We seek to map the logic of these developments, emphasizing characteristic lines of argument, methods, and research designs. At the same time, we strike a cautionary note, arguing that theoretical advance requires closer attention to both structural and cultural bases of diffusion.

CONCEPTUAL OVERVIEW

Diffusion refers to the spread of something within a social system. The key term here is "spread," and it should be taken viscerally (as far as one's constructionism permits) to denote flow or movement from a source to an adopter, paradigmatically via communication and influence. We use the term "practice" to denote the diffusing item, which might be a behavior, strategy, belief, technology, or structure. Diffusion is the most general and abstract term we have for this sort of process, embracing contagion, mimicry, social learning, organized dissemination, and other family members.

The term "diffusion" is sometimes used in an alternative sense to denote increasing incidence: Something diffuses when more and more people do it. But treatment of diffusion as an outcome makes it uninteresting, since practices rise and fall in frequency for every possible reason. We thus focus on diffusion as a kind of causal process and seek to map some major lines of argument and important findings.

Diffusion arguments cannot be segregated easily from other causal dynamics. They verge on the one hand toward models of individual choice, since dif-

fusion models often treat the adopter as a reflective decision-maker. They verge on the other hand toward a broader class of contextual and environmental processes, where conditions outside the actor shape behavior. While it is easy to see when one has strayed much too far (analyses of the diffusion of puberty or the diffusion effects of gender composition on job satisfaction), useful hard and fast rules are not readily apparent.

Rather than patrol the boundaries, we focus attention on lines of research with affinities to the core notions underlying diffusion. These include models that attend explicitly to flows of material along social relations, efforts of external change agents to promote adoption, and interpretive work aligning sources and adopters. The emphasis is on processes treated as involving meaningful behavior on the part of both source and adopter.[1]

Classical Diffusion Studies

All lines of argument have empirical fields of application to which they are particularly suited. The home territory of diffusion is the innovation. Innovations are novel (at least to the adopting community), making communication a necessary condition for adoption. Innovations are also culturally understood as progressive, strengthening the hand of change agents. And since innovations are risky and uncertain, adopters carefully weigh the experience of others before acting. The elective affinity between diffusion and innovation is so strong that we sometimes think of diffusion as the only causal process underlying the adoption pattern of innovations.

Diffusion studies thus generally investigate the introduction and adoption of an innovation. Classic studies include Ryan & Gross's (1943) analysis of the diffusion of hybrid corn, Hagerstrand's (1967) investigation of the diffusion of innovations such as the telephone and tests for tuberculosis involving the destruction of cattle in rural Sweden, and Coleman et al's (1966) analysis of the diffusion of a prescription drug in four Midwestern cities.

These studies focused directly on communication processes and channels, tracing the role of the mass media, professional change agents, and interpersonal interaction within the adopting community. Adoption patterns and self-reports pointed to the impact of external sources in introducing the innovation to cosmopolitans, and the cascading of adoption via relational networks within communities [most famously in Katz & Lazarsfeld's (1944) two-step flow of influence]. Relative innovativeness was explained largely by modern values and institutional markers of this orientation such as educational background, probably because the acceptance of modern, scientific practices was at issue. Rogers (1995) authoritatively reviews this literature.

[1]A quite different theoretical orientation would be "practice-centric," attending to the flow of resourceful practices across a landscape of carriers.

Contemporary "Macro" Diffusion Research

Diffusion arguments go in and out of style in sociology as in other disciplines. There is the greatest continuity in interpersonal studies of contagion and influence, but even here their fortunes are tied to relevance to empirical problems. For example, efforts to model the spread of HIV/AIDS has generated much important diffusion research (see the 1995 special issue of *Social Networks*). Interest in diffusion processes is also a function of broader intellectual movements, such as the role of social science in supporting the spread of modernizing innovation.

In this review we treat not the rich contemporary literature on interpersonal influence but instead the recent development of more "macro" diffusion analysis in two fields: social movements and organizations. In the study of social movements, views of contagion as the irrational, spontaneous transmission of antisocial behavior (LeBon 1897, Tarde 1903, Kornhauser 1959) have given way to nuanced studies of diffusion as reflecting "normal learning and influence processes as mediated by the network structures of everyday life" (McAdam 1995, p. 231). Diffusion processes play a central role in contemporary explanations of the incidence of collective action and the spread of protest symbols and tactics.[2]

Diffusion arguments also flourish when there is theoretical attention to the larger environment, to the way cultural models condition behavior, and to historical context and change rather than comparative statics. The new institutionalism (Powell & DiMaggio 1991) has precisely these emphases, and much diffusion research emerges in organizational studies where this school is most influential. Institutional lines of argument also appear in the social movement literature, as does network imagery in organizational research, so that diffusion studies in the two fields are fairly strongly connected.

Diffusion research in these fields differs in obvious ways both from the classics of the genre and from current work on interpersonal diffusion. Contemporary work on organizations and social movements typically examines the spread of behavioral strategies and structures rather than technical innovations, emphasizes adoptions by social collectivities more than individuals within those collectivities, works with a much larger historical and spatial canvas, and incorporates diffusion as one sort of explanation rather than as the overarching framework. As one example, Fligstein (1985) evaluates five theories of the rise of the multidivisional form across the nation's largest firms over the twentieth century, one of which involves imitation.

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[2]The literature on recruitment to activism also emphasizes the effects of network ties. See Curtis & Zurcher (1973), Snow et al (1980), McAdam (1982, 1988), Morris (1984), McAdam & Paulsen (1993), and McCarthy (1996).

Given this context, contemporary diffusion research on social movements and organizations can learn from the classics but should not blindly copy them.

INITIAL ELEMENTS OF A DIFFUSION ARGUMENT

We briefly flag two important concerns that play a role in all kinds of diffusion arguments but that for present purposes are treated contextually rather than within our main story line.

What Is Observed?

While most diffusion research emphasizes that adopters are influenced by immediate or second-hand observation of the diffusing practice, there is often much ambiguity about what is actually observed. Sometimes we treat the potential adopter as exposed to the practice itself. This involves discovering that something is possible, witnessing it in action, or hearing secondhand about its objectives, rationale, and operation. For example, executives may come into contact with poison pills when they sit on the boards of other firms that have instituted them (Davis 1991), managers may learn which markets leading firms enter (Haveman 1993), and activists in Switzerland may hear about protests in the Netherlands (Kriesi et al 1995, Chapter 8).

A potential adopter may also observe the consequences of a practice. To continue the above examples, one might measure contact with companies that had successfully warded off takeovers by wielding the pill, or calculate rates of return for firms that enter various markets, or contrast situations in which protester demands were met to those in which they were not.

The contrast between observing practices and observing their outcomes is tied only loosely to a contrast between diffusion as mimicry and diffusion as social learning. One can readily motivate diffusion in rational choice-theoretic terms even when no information about consequences is provided (Banerjee 1992). And consequences may be implicit in descriptions of the practice or uninterpretable without close local knowledge or a good theory.

Research that directly measures the consequences of adoption elsewhere suggests that both are salient. Conell & Cohn (1995) find that French coal mining strikes were stimulated by other strikes in the same department but most strongly by victorious ones. And Holden (1986) shows that hijacking attempts were stimulated by prior hijackings, especially when a ransom was paid.

In most studies, however, these distinctions are not or cannot be made. We typically know that potential adopters are brought into contact with the diffusing practice but do not know quite what they see, particularly whether they observe results. This inability to specify what is observed produces some theoretical fuzziness about the microprocesses involved in diffusion.

Innovativeness

We also flag the issue of innovativeness, a topic that forms the flip-side of diffusion studies (see Kimberly 1981, Drazin & Schoonhoven 1996 for excellent discussions of the organizational literature). Innovation research asks what makes organizations capable of devising or adopting new technologies and practices.[3]

While some critics have regarded the literature as beyond interpretation (Downs & Mohr 1976), fairly consistent findings emerge (Damanpour 1991). Large, technically specialized organizations with low levels of formalization and centralization tend to innovate rapidly (Burns & Stalker 1961). Exposure to external competition and rapidly shrinking markets provide external spurs to innovation (for example, Osterman 1992, Studer-Ellis 1997). Internally, the adoption of new practices requires the active efforts of innovation champions and a robust coalition for change.

These lines of inquiry are relevant to diffusion analysis but ambiguously so, since they conflate openness to diffusion with internal inventiveness. In addition, diffusion studies tracking specific practices must attend to the congruence between adopter and practice at least as much as generalized innovativeness. Large, technically complex organizations may be quick to adopt innovations designed to handle information overload (Burns & Wholey 1993) but slow to adopt other practices such as "beer bash Fridays."

And while generalized innovativeness and particular congruences help us explain relative adoption rates of specific practices, neither contributes fundamentally to a theoretical analysis of diffusion. For that, we must examine communication and influence within the community where practices diffuse.

SOURCES AND STRUCTURAL MECHANISMS

Diffusion studies are rich in structural mechanisms: characteristic relations between source and adopter that promote diffusion. Conceptual work in the area tends to bring previously overlooked pathways and logics into sharp focus. Among the classics of this genre are Granovetter's "The Strength of Weak Ties" (1973) and DiMaggio & Powell's "The Iron Cage Revisited" (1983). [4]

The discussion builds from perhaps the most central opposition: diffusion into a population (external source or broadcast models) vs diffusion within a population (internal or contagion models). The two may operate in tandem, as

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[3]The social movement literature has been much less concerned with variability in innovativeness, though Tilly (1978) and Tarrow (1994) emphasize a long historical evolution toward more flexible repertoires of contention.

[4]DiMaggio & Powell's discussion of homogenizing processes may be read as a conceptual mapping of diffusion mechanisms. Their account of coercive, mimetic, and normative sources of homogeneity intersects at many points with our discussion.

when people heard of John Kennedy's assassination on the radio and ran out into the streets to tell their neighbors. But internal and external sources often play different roles in a diffusion analysis and imply different adoption trajectories.

External Sources

The key external sources in classic diffusion research were mass media outlets like the newspaper, TV, and radio, and change agents such as the Farm Bureau's extension agent and the pharmaceutical company's detail man. Contemporary analyses of diffusion in organizations and social movements point to the same kinds of sources, often viewed more collectively (for example, effects of the national business press or the legal community).

MASS MEDIA   The mass media plays a crucial role in amplifying and editing the diffusion of collective action, and much protest today is organized around that fact. Spilerman (1976) explains the temporal clustering of urban riots in the 1960s by arguing that television drew national attention to riots in Newark and Watts, creating a "black solidarity that transcended bounds of communities" (p. 790). Oberschall (1989) argues that the sit-in tactic diffused via the mass media: Students watched what other students were doing on the news and then staged their own sit-ins. Koopmans (1993) points out that the news media do much of the job of social movement organizers during periods of heightened mobilization and conflict.

The business media broadcast the stories of corporate heroes, depict best practice, and advertise managerial innovations and strategies. The business press introduces new innovations with glowing reports and later critiques both adopter and practice as faddish (Abrahamson & Fairchild 1997, Strang 1997). High levels of media attention speed the introduction of innovations like matrix management (Burns & Wholey 1993) and prompts mergers and acquisitions (Haunschild & Beckmann 1997) by providing information that complements that garnered via interorganizational ties.

CHANGE AGENTS   Much recent organizational analysis treats the state and the professions as change agents that spread new practices and facilitate particular lines of innovative action. State policy instruments range from coercive mandates to cheerleading and often form a complex balance of the two. For example, Baron et al (1986) trace the diffusion of modern personnel practices to the mandates and infrastructure introduced by the state during World War II. Legislation on equal rights and affirmative action motivated personnel practices that build internal labor markets (Dobbin et al 1993), and weak federal sponsorship of HMOs precipitated state legislation and shifts in HMO population dynamics (Strang & Bradburn 1993).

The professions and other occupational communities form an allied source of new practices. They frequently mediate legal and policy imperatives: Lawyers

construct recipes for meeting ambiguous mandates for affirmative action (Edel-man 1990, 1992), which human resources professionals translate into standar-dized procedures (Sutton & Dobbin 1996). The accounting profession devises and disseminates organized responses to changing IRS regulations (Mezias 1990).

Other communities of experts operate more autonomously in the market for corporate efficiency. In the 1980s, organizational consultants and scholars in-terpreted Japanese business practice for the American manager (Ouchi 1981, Pascale & Athos 1981), and management faculty taught MBAs the virtues of the multidivisional form (Palmer et al 1993). Business consultants also devise and market innovations, from how to become personally effective (Covey 1989) to how to restructure organizations (Hammer & Champy 1994). Expert communities are internally organized and differentiated, most notably in the way academics enter the fray after the battle is over (Strang 1997) and move toward the arguments of practitioners (Barley et al 1988).

In social movements, experts cannot be distinguished so easily from adopt-ers, as activists move seamlessly across the two roles. But it is clear that strate-gies and tactics are often imported into local settings. Morris (1981) and Mc-Adam (1988) discuss the role of nonviolence workshops and training sessions conducted by outside activists in the civil rights movement. And many move-ments draw inspiration from social movement gurus such as Gandhi or Edward Abbey (whose book *The Monkey Wrench Gang* promoted controversial tactics like tree-spiking to halt the cutting of timber).

Internal Influence

Internal diffusion processes operate via information and influence flowing within the adopting population. Most often, especially in formal models, the flow is assumed to move grapevine-like from prior to potential adopters. This process focuses attention on interaction networks as the conduits of diffusion.

Classical formal models of intrapopulation diffusion also assume spatial homogeneity, where all members of the population have the same chance of affecting and being affected by each other. But few substantive arguments work this way. Instead, sociologists take advantage of intrapopulation diffu-sion to search for and document social structure.

COHESION THROUGH STRONG TIES   The classic emphasis in analyses of face-to-face interaction treats influence as flowing along the lines of close social re-lations. Frequent interaction engenders much exchange of information about the character, motivations, and effects of diffusing practices. Particularly when organized by homophily, strong ties lead actors to take the perspective of the other and to exert powerful pressures for conformity.[5] Balance theoretic

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[5]Some may recall the often stifling character of these pressures in the setting of the small town; others find a more compelling parallel in the atmosphere of the university department.

notions (Heider 1946) and their generalizations predict homogeneity within cliques (Davis 1967).

Some of these ideas surface in discussions of the benefits of strong, dense networks for organizing collective action. For example, Morris's (1981) account of the diffusion of protest tactics in the civil rights movement points to the strong and durable relationships linking black churches, colleges, and movement organizations such as the Southern Christian Leadership Conference). Mizruchi (1992) finds that corporations that constrain the profits of another firm also tend to influence the other firm's political behavior.

Analyses of organizational cultures and internal decision-making offer parallel accounts. In particular, Friedkin (1984, 1996) combines direct and short indirect paths to produce measures of structural cohesion. The social circles that emerge from this approach locate regions of consensus on controversial policy issues.

NEWS THROUGH WEAK TIES   Granovetter (1973) suggests that new information may travel via weak ties rather than strong ones. The argument is that strongly related partners share many ties to third parties and so have little new to report to each other, while the social circles of weakly tied actors overlap less. Presumably the channel capacity of a weak tie is more restricted, however, making it a conduit for news rather than resocialization.

The well-documented role of interlocking directorates in organizational diffusion may perhaps be best understood as analogous to a weak interpersonal tie (though they are often discussed under the rubric of cohesion). These structures permit "business scan" (Useem 1984), as top managers gain a glimpse of what other firms do. For example, firms are more likely to adopt poison pill defenses against hostile takeover (Davis 1991), to adopt multidimensional forms (Palmer et al 1993), and to engage in takeover efforts (Haunschild 1993) if their managers sit on the boards of firms that have previously engaged in these activities.

The analogy to Granovetter's weak ties is not entirely apt, since board interlocks familiarize executives with novel strategies more than inform them of their existence (Davis 1991). But it seems implausible that board interlocks produce a parallel to the mutual socialization produced by cohesive interpersonal relations. Overall, board interlocks appear a relatively thin sort of linkage important for the flow of information about "high" corporate strategy (for example, mergers, CEO compensation, and prestigious innovations such as massive downsizing), but they are less relevant to other kinds of organizational innovations.

In the study of social movements, collective action often diffuses via weak ties carrying the news of what others have done. Rude (1964) points to the diffusion of collective action along transportation routes in England and France between 1730 and 1848, where travelers carried the news. Skinner (1964) details the intervillage networks facilitating peasant rebellions in China.

Bohstedt & Williams (1988) argue that market networks facilitated the spread of food riots across Devonshire in the late eighteenth century. And Gould (1991) shows how weak ties among Parisian neighborhoods helped mobilize support for the Paris Commune.

STRUCTURAL EQUIVALENCE AND COMPETITION   Burt (1987) argues that structurally equivalent actors (those possessing similar ties to others) attend carefully to each other. He motivates the argument via a logic of competition: We keep up with the Joneses because we cannot afford to fall behind, most importantly in managing our mutual relation to the Smiths. As Friedkin (1984) observes, however, apparent diffusion via structural equivalence may represent the effects of similar patterns of contact with third parties.

Reanalyses of Coleman et al's *Medical Innovation* find that structurally equivalent doctors tend to adopt in tandem (Strang & Tuma 1993, Burt 1987). Galaskiewicz & Burt (1991) show that structurally equivalent pairs of corporate loan officers had closely aligned perspectives on local charities. And Mizruchi (1992) finds indirect interlocks to financial institutions a strong predictor of similar political contributions (though as Mizruchi notes, this may be interpreted as bank influence).

More prosaic forms of competition also generate mimicry. Much evidence suggests that firms in competition are highly responsive to each other's efforts at innovation. Japanese managerial and production practices diffused most quickly to firms exposed to external competition (Osterman 1992). Firms mimic those in their industry (Fligstein 1985, 1990), and states the policies of other states (Zhou 1993). In the social movements arena, Tarrow (1989a) argues that competition between protest organizations drives the diffusion of disruptive tactics as groups seek to outbid each other.

But these examples suggest that while competition often spurs imitation, it may also spur differentiation. Firms and social movements want to keep up with their competitors—but they also want to outdo them and to keep their distance. Thus Greve (1995, 1996) shows that radio stations do not imitate the strategic moves of stations in local markets (which would intensify competition). Instead, decisions are influenced by the behavior of sister stations in other markets and the behaviors that those sister stations come into contact with. Becker (1998) suggests that local congregations distance their programs and mission from other local congregations of the same denomination (with whom they most directly compete for adherents) while learning from congregations of other denominations.

PRESTIGE   While the above social relations are all symmetric, adopters may be influenced strongly by prestigious, central actors in ways that are not reciprocated. Both social psychological and structural mechanisms are involved:

Lower ranking community members aspire to be like prestigious others, find it useful to resemble powerful leaders, and adoptions by central actors shift community norms or interaction patterns sufficiently that others find it hard not to go along.

For example, Fligstein (1990) argues that models of management diffuse from central firms to the larger business community as they prove their utility in responding to new politico-economic conditions. Haveman (1993) shows that deregulation led thrifts to follow large, financially profitable thrifts into new markets. And Han (1994) argues that mid-sized companies use the accounting firms that the largest firms in their industry employ, while large firms seek to differentiate themselves from each other.[6]

SPATIAL PROXIMITY   Perhaps the most common finding in diffusion research is that spatially proximate actors influence each other. No distinctive logic can be proposed—rather, spatial proximity facilitates all kinds of interaction and influence. Where network relations are not mapped directly, proximity often provides the best summary of the likelihood of mutual awareness and interdependence.

In some work, spatial proximity is measured by pairwise distances. Knoke (1982) shows effects of geographic proximity on the spread of municipal reform. Hedstrom (1994) shows how the Swedish trade union movement expanded geographically. Petras & Zeitlin (1967) argue that radical ideology in Chile (measured by support for Allende) spread from mining communities to adjacent agricultural communities. And in a careful reanalysis of Spilerman's data using event history methods, Myers (1997) finds that the propensity to riot falls with distance from cities where riots have occurred.

Other studies examine contagion within spatially defined regions that may possess both high levels of interaction and a common sense of identity. For example, Davis & Greve (1997) point to the diffusion of golden parachutes via local business communities, while Burns & Wholey (1993) locate regional influences on the adoption of matrix management.[7]

CULTURAL CATEGORIES   Finally, reference groups may be culturally constructed around common status and purpose rather than as dense webs of interaction. McAdam & Rucht (1993) point to the importance of cultural categories such as "activist" in promoting the spread of tactics where relational ties are thin. Chaves (1996) finds that the ordination of women was contagious within groups of denominations defined by shared theological orientations. And in a

[6]Like all other communities, organizations and social movements display prestige orderings (see Schrum & Wuthnow 1988, Fombrun & Shanley 1990).

[7]Tolnay et al (1996) find a surprising negative diffusion effect of geographic proximity on lynchings (and also exhaustion rather than contagion within counties). They argue that lynchings are a social control mechanism whose memory lingers in the local population.

direct comparison of a variety of diffusion channels, Soule (1997) shows that shantytown protests diffused between similar kinds of campuses (for example, between research universities) rather than within regions.

Culturally defined similarity may also inspire organizational arrangements that press for homogeneity. Strang & Chang (1993) show that the International Labor Organization has spurred the adoption and expansion of social security programs, particularly by the welfare laggards of the industrialized world (though the United States proved immune). Soule & Zylan (1997) find that AF(D)C reforms diffused within relevant administrative groupings rather than traditionally defined regions.

CULTURAL BASES OF DIFFUSION

Both theory and empirical work generally focus on the sorts of structural bases for diffusion catalogued above. But this is only part of the story. Structural opportunities for meaningful contact cannot tell us what sorts of practices are likely to diffuse, and such opportunities may lead to conflict or boundary formation as well as to diffusion.

An analysis of the cultural (in some usage, institutional) bases of diffusion speaks more directly to what spreads, replacing a theory of connections with a theory of connecting. We emphasize three lines of analysis: discussion of the interpretive work that catalyzes flow, inspection of the diffusion industries whose stock in trade is discourse, and examination of how empirical diffusion patterns are related to the cultural status of the diffusing item.

Interpretive Work as Mediating Diffusion

Cultural approaches emphasize that a self-consciously interpretive process underlies most adoption (though there is a place for unthinking mimicry and hysterical contagion; see Kerckhoff & Back 1968). Strang & Meyer (1993) discuss how practices are theorized in terms of general models and causal relationships. Snow & Benford (1992) apply Goffman's notion of a frame: an "interpretive schema that simplifies and condenses the 'world out there' by punctuating and encoding objects, situations, events, experiences, and sequences of action." (p. 137). Lillrank (1995) portrays the interpretive process as one of translating concrete practices into abstractions for export and then unpacking the abstraction into a (suitably modified) concrete practice upon arrival. Jointly, the argument is that practices diffuse as they are rendered salient, familiar, and compelling.[8]

Strang's (1997) inquiry into the American reception of quality circles explores theorization via a content analysis of public discourse. Articles in the

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[8]Differences between these ideas have to do with the types of cultural materials viewed as most powerful (professional/scientific accounts vs cultural metaphors) and the patterns of diffusion anticipated (substantial homogeneity vs tailored differences).

business literature are coded for the claims they make about quality circles. The Japanese practice is found to have been theorized under two different frames, a dominant human relations interpretation and an undertheorized problem-solving one. These public discourses help us understand how and why American companies experimented with quality circles.

Snow (1993) examines framing in the importation of Nichiro Shoshu/Sakagakkai (NSS), a Japanese-based Buddhist movement, into the United States. He emphasizes that the incorporation of American cultural symbols by the NSS has facilitated the movement's expansion and viability. The NSS displays national symbols such as the American flag in its ceremonies, directs members to be winners (a decidedly non-Buddhist ideal), and peppers its communiqués with American archetypes such as the pioneering spirit and town meetings.[9]

Perhaps the richest analysis of interpretation is Hirsch's (1986) discussion of the language associated with hostile takeovers. This imagery shifts dramatically over time, as initially stark portrayals of hostile takeovers as crimes committed by outsiders are replaced by a more complex, richer imagery of shootouts, Big Hat Boys, rescues, and Snow Whites. Hirsch treats this language as a cultural phenomenon that evolves along with takeover behavior and its social location within the business community, initially framing resistance and later framing acceptance.

In addition to generating interesting stories, attention to the interpretive work underlying diffusion has two main implications. It points out that practices do not flow: Theorized models and careful framings do. And it argues that interpretive work selects and transforms diffusing practices: Not all practices can be theorized or framed, and none come out of the process unmodified.

Fashion-Setting Communities

Interpretive work promoting diffusion is accomplished by both sources and adopters; sometimes the source, sometimes the adopter, and sometimes both play an active role (Snow & Benford 1995). But cultural approaches to diffusion direct particular attention to the external communities whose members make their living promulgating innovation and commenting on change. These others (Meyer 1995) have access and influence largely to the extent that their interpretive frames are compelling to decision makers, and so here we see much attention to the cultural conditions for diffusion.

Today, the management fashion industry is very big business. While the theorization and hyping of organizational action has always been fundamental to managing (Eccles & Nohria 1992), a strong trend toward the externalization

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[9]Similarly, the shantytown tactic may have diffused rapidly in the college divestment movement because it provided a clear and compelling frame for the conflict emphasizing the living conditions of South African blacks. There is little evidence that use of the tactic prompted university divestment (Soule 1998).

of organizational analysis is apparent. The consultant, guru, and management scholar populations are on the rise, as are the output of the business press and the sales of business books (see Micklethwait & Wooldridge 1996).

Researchers have begun to probe the content of the business fashion-setting business. Barley & Kunda (1992) argue that managerial discourse oscillates between rational and normative models of organizing. Periods dominated by a master narrative of rationalism facilitate the construction, dissemination, and contagiousness of practices such as systems analysis, time and motion studies, and reengineering. Periods marked by a narrative of normative integration enhance the diffusion of human relations techniques and culture engineering.

These rhetorical frames appear to be the product of both local conditions and the cultural materials available in even wider societal frames. Barley & Kunda (1992) suggest that the rational-normative opposition reflects a deep antimony in Western culture that is regulated by temporal segregation. Shenhav (1995) links the rise of the Taylorist model to the professional mobility project of engineers, labor unrest, and the society-wide frame of Progressivism. And Abrahamson (1997) finds that turnover and labor union activity help explain the postemergence prevalence of normative rhetorics such as the human relations movement.

Collective discourses on narrower organizational practices also exhibit important regularities (Abrahamson 1996, Abrahamson & Fairchild 1997). Innovations have observable latency periods before bursting onto the scene and replace each other in quick succession. These dynamics seem to arise both from processes internal to the fashion industry and from exogenous drivers. Fashion setters must move on lest others catch up, and norms of progress mandate that old wine be placed in new bottles. Nor can fashions predicated on Japanese industrial superiority easily withstand a crash on the Nisei.

Discursive frames also arise in the social movement arena. Gamson & Mondigliani (1989) trace shifts in the discussions of nuclear power that enabled or disabled various forms of protest. The various media also apply characteristic modes of inquiry and representation. For example, newspapers editorialize while television is guided by a particular conception of balanced reporting where two sides of every issue are located and represented. Tarrow (1989) argues that the media's attention to the sensational produces spirals of more controversial action—an insight that might also be applied to organizational innovation.

The Cultural Status of the Diffusing Practice

Practices that accord with cultural understandings of appropriate and effective action tend to diffuse more quickly than those that do not. Strang (1990) shows that decolonization spread rapidly because it resonated with increasingly salient models of national community, popular sovereignty, and expanded partici-

pation. Hirsch (1986) notes that the frequency of hostile takeovers increased as the practice was symbolically legitimated, and Tolbert & Zucker (1983) find that the pace of civil service reform accelerated after professional groups came to consensus on its virtues.

Menzel (1960) organizes the results of much early diffusion research by observing that centrally placed actors are early adopters of culturally legitimate innovations, whereas illegitimate innovations are adopted by "marginal men" unconstrained by community norms. Contemporary research suggests similar patterns. For example, Kraatz & Zajac (1996) find that poor, failing liberal arts colleges adopt professional programs inconsistent with their larger identity. Leblebici et al (1991) note that fringe players were the carriers of innovations that challenged and repeatedly transformed the institutional structure of radio. Stearns & Allan (1996) argue that peripheral firms set off merger waves by responding quickly to changing political and economic conditions.

Strang & Meyer (1993) suggest that the more successfully theorized a diffusing practice is, the less its diffusion will be relationally structured. The notion is that an easily communicated, strongly legitimated innovation requires less local promotion and mutual sense-making than a practice that is hard to understand and motivate.[10] Davis & Greve (1997) make this point in a study of the diffusion of poison pill and golden parachute responses to the threat of hostile mergers. They find that the pill diffused rapidly via board interlocks, whereas parachutes spread slowly within local business communities. Davis & Greve argue that the public legitimacy of the poison pill permitted the relatively thin, information-carrying medium of corporate board contacts to channel adoption, while the scandalous parachute required mutual reassurance within business communities.

However, bandwagons are increasingly unlikely to form as illegitimacy rises in the eyes of adopters. For example, Kraatz & Zajac (1996) find no evidence of contagion in professional program adoption by liberal arts schools—colleges introducing these programs look more like defectors bowing to financial need than participants in a social movement for educational relevance. And Baker & Faulkner (1997) point to the extreme case of a real-estate swindle, whose perpetrators must minimize publicity and interaction.

A WIDER COMPARATIVE LENS

The most common design in diffusion research treats variability in the timing of adoption of a single practice across a single community (a relationally and culturally connected population). Almost all of the previously mentioned stud-

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[10]In a convergent vein, Tarrow (1994) argues that modular forms of protest like the boycott and the mass petition supported more widespread action and faster diffusion because they could be flexibly utilized against different opponents and in service of different causes.

ies are of this type. Much less work compares rates, patterns, and causal mechanisms across settings. We emphasize work that promotes a broader comparative analysis.

Cycles of Protest and Innovation

Diffusion processes may play a role in more complex webs of action and reaction. For social movements, the tendency of diffusion dynamics to spread and amplify protest is opposed by increasingly strong responses by the state. Pitcher et al (1978) present an early formal model of the instigation and inhibition of collective violence as learning processes. Olzak (1992) models the dynamics of collective action as the combined result of contagion and exhaustion effects.

Tarrow (1989, 1994) points to a larger set of dynamics producing protest cycles like the American civil rights–to–antiwar cycle of the 1960s. Cycles are periods of heightened conflict when new ideas are developed rapidly and diffuse across movement organizations that support, compete, and learn from one another.[11] These cycles exhibit at least three kinds of diffusion: (*a*) Collective action spreads across space and sectors (class conflict might move from heavy to light industry). (*b*) New frames of meaning diffuse across as well as within movements (for example, the rubric of "rights" spread from the civil rights to the women's movement). And (*c*) novel tactics, such as the sit-in, are forged and diffuse within protest cycles.

McAdam (1995) elaborates this model in a discussion of relationships between initiator movements (such as Solidarity in Poland) and the spin-off movements that follow. Meyer & Whittier (1994) describe the strong influence of the women's movement on the ideas, tactics, and organizational structure of the 1980s peace movement.

Business communities display parallel dynamics in cycles of technological and managerial innovation. For example, the 1980s and 1990s have been a hotbed of efforts to transform organizations. Progressive firms such as Motorola, managerial consultants such as CSC Index, and gurus like Tom Peters are the carriers of a variety of strategies for enhancing quality, speeding innovation, downsizing, and empowering workers. These movements spread from firm to firm, often following a core-periphery pattern (from big manufacturing and high-tech to services to education and government). They compete but also learn from and build on each other, as opposing strategies such as TQM and reengineering become hard to distinguish in practice.

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[11]Soule & Tarrow (1991) explore perhaps the first modern cycle of protest in the revolutions of 1848. Both spatial patterns in the temporal incidence of collective action and qualitative evidence make it clear that protest was diffusing across countries (mobs in Germany carried French flags and sang French songs). The rate of diffusion in this era of slower mass communications is startling.

Same Practice, Different Communities

A tale from a Korean village (Rogers & Kinkaid 1981) suggests the importance of cultural context. Family planning in the village of Oryu Li faced strong resistance from husbands, who beat their wives if they tried it. It spread only after a mother's club not only promoted contraception but restructured the distribution of power in the village. Led by the indefatigable Mrs. Choi, the club bought the local wineshop and fired its "chopstick girls," raised a pig, manufactured uniforms and sold them at a profit, and accumulated sufficient funds to buy much of the land surrounding the village. What would have occurred through contagious diffusion in a Midwestern town was in Oryu Li a saga of heroism, collective action, and changing gender roles.

In less dramatic fashion, explicit comparisons of diffusion processes across national societies demonstrate the operation of structural factors that would otherwise be missed. Cole (1985, 1989) argues that the diffusion patterns of small group activities in three countries were molded by national infrastructures for diffusion. In Japan and Sweden, central organizations bankrolled by industry promoted and oversaw the diffusion of best practice. The American business sector lacked such institutions, and instead business consultants operated in a free-for-all market for innovation.[12] Cole argues that the absence of a larger infrastructure led to tepid and faddish diffusion, where business consultants gained little access to top decision-makers and watered down their wares for mass promotion.

Guillen (1994) examines the reception of several major schools of management across four countries. He focuses on the impact of national cultural discourse, structures of state and occupational power, and business interests. For example, elite mentalities of modernism and a strong engineering profession hastened German use of scientific management techniques, while Spain's traditional humanism, labor unrest, and weak engineering profession led Taylorism to wilt on the vine.

Different Practices, Same Community

Comparisons of different practices diffusing in a single population or the same practice diffusing in different communities often highlight how cultural understandings shape adoption patterns. The work of Davis & Greve (1997) described above is very much in this line. Another example is Mizruchi & Fein's (1997) analysis of how authors have employed DiMaggio & Powell's (1983) concepts of coercive, mimetic, and normative mechanisms producing isomorphism. They find the greatest reference to mimetic processes, and argue that

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[12]One does see a state-sponsored infrastructure in the American health sector, with its experiments, subsidized models, and regional innovation-diffusion centers (Fennell & Warnecke 1988).

this follows from the resonance of the idea of rational copying given the view that organizations are autonomous and are rational actors.

Rowan (1982) provides a more structural analysis of legitimation, arguing that innovations diffuse rapidly when core actors are in agreement and fizzle when they are not. For example, curriculum reform was adopted rapidly by school districts when the state legislature, the state educational agency, and the teacher's association supported the same model. School districts disregarded curricular innovations when this consensus fell apart (for example, when the legislature regarded new texts as too radical).

Shifts in Causal Effects During Diffusion

Finally, much research looks for shifts in causal processes as diffusion unfolds. The most influential such analysis is Tolbert & Zucker's (1983) discussion of how local rationality is replaced by conformity to institutional models. They argue that civil service reforms diffused slowly in the nineteenth century in ways consistent with relevant city characteristics. After 1915, when civil service practices had become widely legitimated in professional circles, reform diffused rapidly and indiscriminately.

A related logic of crescive institutionalization appears in organizational studies that examine the changing effect of prior adoptions (rather than conduct a separate discourse analysis). For example, Burns & Wholey (1993) find temporal decline in the effects of internal predictors and a growing effect of regional adoption in the diffusion of matrix management among hospitals. Budros (1997) shows that the internal precipitants of corporate downsizing weaken over time while the overall bandwagon effect grows.[13]

Much work on national educational and welfare policy finds similar dynamics. Welfare policy adoption early in the twentieth century was tied to economic transformations and development, whereas after World War II policies were adopted rapidly everywhere (Collier & Messick 1975). Educational systems were tied closely to national characteristics in the nineteenth century but spread in broadcast fashion in the twentieth century (Meyer et al 1992).

Westphal et al (1997) extend this well-documented institutionalization model in analysis of TQM practices across hospitals. Breaking with standard practice, they examine the relationship between the timing of adoption and what gets adopted, contrasting conventional implementation of TQM models (measured as closeness to average use and to theoretical models) with customization of TQM to local conditions. Early adopters are shown to customize while late adopters adopt conventional forms, and network ties to adopters en-

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[13]Coefficient values for contagion are rather stable across the three historical periods of downsizing that Budros studies. But since the covariate (prior downsizing efforts) is rising continuously, the total effect of prior adoptions increases over time.

courage customization early and conventionality late. They further show that conformity to TQM standards is positively related to hospital legitimacy but negatively related to efficiency.

FORMAL MODELS AND ESTIMATION

Interest in diffusion has stimulated much attention to models and methods that capture the interdependence in outcomes central to contagion. This work builds upon the larger movement toward the dynamic analysis of longitudinal data. We briefly note the range of approaches and research strategies characteristic of quantitative analysis of diffusion.

Point-to-Point Processes

Early modeling work in diffusion arose out of attempts to fit curves to cumulative adoption patterns. The key theoretical discovery was that contagion implied the commonly observed S-shaped cumulative adoption curve. A standard mixed model combining both external and internal sources of diffusion (see Bartholomew 1982; Mahajan & Peterson 1985 for a review) gives

$$\lim_{\Delta t \to 0} \frac{\Pr[S(t+\Delta t)=s+1|S(t)=s]}{\Delta t} = [\alpha + \beta s(t)]n(t). \qquad 1.$$

Models of contagion have been pursued in two main directions. The first is to draw inferences about underlying mechanisms from the shape of the adoption curve. The classic example is Coleman et al's (1966) demonstration of differing temporal patterns of adoption for socially integrated and isolated doctors. Hernes (1972) and Diekmann (1989) find that marital rates resemble a diffusion process marked by increasing ardor but declining suitability. Yamaguchi (1994) shows that Hernes-type models provide a good fit to simple diffusion processes across simulated networks.

The more common strategy, however, is to model empirical diffusion processes at the individual level, writing event history formulations of Equation 1 that incorporate hypothesized interdependencies between adopters (Strang 1991, Morris 1993). For example, Davis (1992) analyzes the transmission of poison pill strategies by counting board interlocks with prior adopters; Zhou (1993) examines the diffusion of occupational licensing by counting the number of states with laws in place.

Strang & Tuma (1993) formalize and extend this strategy, proposing a heterogeneous diffusion framework that models the hazard as

$$r_n(t) = \exp\left[\alpha' x_n + \sum_{s \in S(t)} \left(\beta' v_n + \gamma' w_s + \delta' z_{ns}\right)\right]$$

for the multiplicative case and a related form for additive effects of contagion. This framework permits direct examination of intrinsic propensities to adopt, generalized susceptibility to influence, the infectiousness of prior adopters, and social proximity to be estimated via SAS macros (Strang 1995) or RATE (Tuma 1994). Simulation work (Greve et al 1995) indicates that heterogeneous diffusion models can be estimated robustly with complete data on populations and have some application when data is incomplete.

Spatial regression models (Doreian 1981, Marsden & Friedkin 1993) form a parallel strategy for estimating the effects of interdependence where outcomes are continuous—for example, if we studied the extensiveness of downsizing or the size of demonstrations. Models take the form

$$y = \rho W y + X \beta + \varepsilon \qquad\qquad 3.$$

where *W* represents the hypothesized structure of interdependence. While full information methods are unwieldy, Anselin (1988) and Land & Deane (1992) present estimation techniques that shortcut these problems and make spatial regression modeling widely accessible.

Few methods are available for recovering network structures of influence from data, as opposed to the hypothesis tests that heterogeneous diffusion and spatial regression models permit. Mantel (1967) develops a general permutation test for spatiotemporal clustering. This approach can be used to investigate network effects with a very general autocorrelation structure (Krackhardt 1988), though temporal ordering is sacrificed. Strang (1996) suggests the study of multiple adoption processes to identify network influence structures.

Threshold Processes

Models of threshold processes break with the notion of direct contagion to view potential adopters as responsive to the distribution of present adopters in the population (Granovetter 1978, Schelling 1978). For example, it seems plausible that white flight from cities is based on response to racial proportions rather than to direct encounters. Granovetter (1978) emphasizes the nonlinear dynamics produced by variation in individual thresholds, and Valente (1995) proposes local thresholds for reference groups based on direct network ties.

But thresholds have been difficult to establish empirically, with more use of revealed thresholds to describe adoption patterns (see Granovetter & Soong 1988, pp. 99–102; Valente 1995) than application of threshold models to predict behavior. Threshold processes are hard to identify if we need to locate both the reference group and the threshold. In the only explicit effort to locate thresholds of which we are aware, analysis of 85 policies diffusing across the United States provided no evidence of regional or national thresholds in state policy adoption (Strang 1996).

But other evidence does suggest that adopters often respond to combinations of signals. For example, Hagerstrand (1967) found that the spatial pattern of rural diffusion resembled that generated by simulations where two contacts with prior adopters led to adoption (simulations based on single contacts produced greater spatial scatter than was observed in empirical maps). And Asch (1951) demonstrated that nearly total opposition was required to induce most subjects to disbelieve their own eyes.

PIOUS HOPES FOR FUTURE RESEARCH

Design

While single-population, single-practice research designs will no doubt continue to dominate the diffusion literature, theoretical development would benefit from a larger comparative lens. Considerable insight has been developed on a case-by-case basis into the mechanisms behind the diffusion of a variety of important and interesting social practices. But insights are unlikely to be integrated, or analysts spurred to theorize more aggressively, without the challenges posed by comparative research.

Direct contrasts of diffusing practices can provide more nuanced views of the mechanisms involved, as the work of Davis & Greve (1997) illustrates. Independent studies of poison pills and golden parachutes would likely have asserted incompatible claims about the types of relational structures that underlie diffusion. Their joint analysis led to a deeper argument about how cultural meanings affect the strength of alternative diffusion mechanisms.

More attention to how innovations compete and support each other is also needed. In the social movement arena, many students of collective action are beginning to question the movement-centric focus that case studies reinforce. Attention to how tactics, strategies, symbols, and frames diffuse across movements produces a richer picture well worth the research investment. And studies of organizational diffusion would do well to place mutually evolving innovations in relation to each other rather than analyze them seriatim.

Finally, we call for examination of practices that fail to diffuse. There is a strong selection bias in diffusion research, where investigators choose ultimately popular practices as appropriate candidates for study. Investigation of practices that few adopt would provide a more balanced picture.

Study of practices that fail to diffuse would also shed light on those that do. For example, we noted above that the rapid diffusion of the shantytown tactic in the divestment movement may have flowed from its iconographic immediacy and symbolic power. Comparison to concrete tactics that were attempted but didn't diffuse (campus sleep-ins, for example) could examine this proposition, along with arguments about other attributes of tactics relevant to collec-

tive action (how they are repressed, how they build activist solidarity, how they appear on television, and whether they lead to desired results).

Substance

Relational analysis has been the backbone of diffusion research in sociology. But ideas based on interpersonal relations translate unclearly into situations where collective actors such as organizations are the adopters. The tendency to refer to the effect of any direct tie as cohesion is symptomatic (particularly since the ties under discussion often seem so weak). More important, the elaborate analyses of diffusion and diffusion-like dynamics mounted at the individual level (work such as that of Burt, Carley, Doreian, Friedkin, Macy, and Marsden) do far more with the network metaphor than analyses of collective actors seem able to pull off.

The problem is that collective actor parallels to face-to-face interaction are not as vivid or meaningful as the real thing. Valuable insights into diffusion trajectories have been garnered by analysis of interlocking directorates, geographic proximity, and culturally analyzed similarities as diffusion channels. But there is a need for close attention to what sort of information and influence flows through these channels. And it would be useful to develop models of interorganizational structure less colored by an analogy to direct interpersonal interaction.

Finally, the fashion setters who construct and disseminate new practices deserve renewed attention. Diffusion dynamics seem increasingly volatile, and diffusing practices increasingly constructed, as interpretive work is externalized in public discourse. Study of the media, consultants, and professional communities permits attention to cultural work and forms of agency that adopter-centric research overlooks. The impact of vibrant diffusion industries on the political and the business scene has hardly begun to be tapped.

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