

# Overcoming Resistance to Organizational Change: Strong Ties and Affective Cooptation

Julie Battilana

Harvard Business School, Harvard University, Boston, Massachusetts 02163, [jbattilana@hbs.edu](mailto:jbattilana@hbs.edu)

Tiziana Casciaro

Rotman School of Management, University of Toronto, Toronto, Ontario M5S 3E6, Canada, [t.casciaro@utoronto.ca](mailto:t.casciaro@utoronto.ca)

**W**e propose a relational theory of how change agents in organizations use the strength of ties in their network to overcome resistance to change. We argue that strong ties to potentially influential organization members who are ambivalent about a change (fence-sitters) provide the change agent with an affective basis to coopt them. This cooptation increases the probability that the organization will adopt the change. By contrast, strong ties to potentially influential organization members who disapprove of a change outright (resistors) are an effective means of affective cooptation only when a change diverges little from institutionalized practices. With more divergent changes, the advantages of strong ties to resistors accruing to the change agent are weaker, and may turn into liabilities that reduce the likelihood of change adoption. Analyses of longitudinal data from 68 multimethod case studies of organizational change initiatives conducted at the National Health Service in the United Kingdom support these predictions and advance a relational view of organizational change in which social networks operate as tools of political influence through affective mechanisms.

*Key words:* organizational studies; behavior; effectiveness; performance; networks; organizational change; institutional theory

*History:* Received July 17, 2011; accepted March 31, 2012, by Jesper Sørensen, organizations. Published online in *Articles in Advance* October 24, 2012.

## Introduction

Political behavior inevitably accompanies organizational change (Buchanan and Badham 1999, Frost and Egri 1991, Pettigrew 1973, Van de Ven and Poole 1995). When change agents in organizations initiate premeditated interventions intended to modify organizational functioning—i.e., planned organizational changes (Lippitt 1958)—they need to persuade others in the organization to adopt new practices (Kanter 1983, Kimberly 1976). To overcome the likely resistance from organization members (Coch and French 1948), the change agent must exercise social influence in favor of coalition building (Kanter 1983, Kotter 1995), because failure to neutralize or win over potential opponents can thwart change efforts (Cyert and March 1963/1992, March 1988, Stevenson et al. 1985).

In spite of the pervasive relational content of organizational change, research on change management has devoted limited attention to the role of a change agent's intraorganizational social network in overcoming resistance to change. Instead it has focused on the role of communication, education, and participation in reducing resistance (Armenakis and Bedeian 1999, Judson 1991, Kotter 1995). Most attention has been devoted to crafting a vision that resonates with as many organization members as possible to convince potential opponents of the need for change

(Armenakis and Harris 2002), choosing appropriate communication and influence tactics (Thomas et al. 2011), involving organization members in the development of the change (Beer and Eisenstat 1996), and designing formal structures and systems to reward and consolidate new behaviors and practices (Kotter 1995, Nadler and Tushman 1990).

Yet, change agents' ability to overcome resistance to change depends not only on the content of their vision, its effective communication, and the design of systems and structures, but also on the structure and content of the interpersonal relationships they establish within the organization. These relationships have been shown to increase actors' social influence (Brass 1984, Gargiulo 1993), involvement in innovation (Ibarra 1993, Obstfeld 2005), and their ability to outmaneuver opposition in policy conflicts (Stevenson and Greenberg 2000). Despite this evidence, however, much is still unknown about how the structure and content of intraorganizational social networks may enable change agents to overcome resistance to change. Addressing this gap may yield insights into how change unfolds in organizations.

In this paper, we focus on one of the most significant features in an actor's social network—the strength of ties (Granovetter 1973, Krackhardt 1992). We complement the prevailing emphasis in the

literature on the role of tie strength in knowledge transfer (Hansen 1999, Levin and Cross 2004) with a novel perspective on strong ties as a means of affective cooptation of organization members whose opposition to the change may derail it. We distinguish two types of potential opponents: outright resisters who have a purely negative attitude toward a change initiative, and fence-sitters who have both positive and negative attitudes toward a change and are therefore ambivalent about it (Oreg and Sverdlik 2011, Piderit 2000, Pratkanis 1989). If not preempted or converted, both potential fence-sitters and resisters, whose opposition toward the change may range from passive inertia to active hostility (Giangreco and Peccei 2005), may ultimately derail the change initiative (Balsano et al. 2008, Kaplan 2008, Kellogg 2011, Markham 2000), particularly when they yield influence in the organization. In this paper, we label “resisters” as those organization members who have a negative attitude toward the change and have the potential to influence change adoption. Likewise, we label “fence-sitters” as organization members who are ambivalent toward the change and have the potential to influence change adoption. We propose that strong ties linking change agents to these potentially influential resisters and fence-sitters play a central role in overcoming resistance and, consequently, in an actor’s ability to implement change in an organization.

We theorize that strong ties to those who represent a potential threat to a change initiative may provide a change agent with an affective basis for their cooptation, thus removing potential obstacles or securing support. We develop a theory of how affective cooptation as a relational strategy enables a change agent to influence the behavior of fence-sitters on the one hand and resisters on the other hand. First, we argue that the emotional bonds that underlie strong ties motivate fence-sitters to support the change agent or, at a minimum, discourage them from damaging the change project. Second, in the case of resisters, we propose that the benefits of strong ties are contingent on the intensity of the resistance that the change elicits. Namely, affective cooptation operates more effectively with potential resisters when a change diverges little from taken-for-granted practices in the organization’s field of activity, thereby eliciting less intense resistance. With more divergent changes, the advantages of strong ties accruing to a change agent are weaker, and may even turn into liabilities that reduce the likelihood of change adoption. This is because being emotionally close to people who strongly oppose the change makes the change agent more susceptible to their reverse affective cooptation.

We test our theory with longitudinal multimethod data from 68 case studies of organizational change initiatives that clinical managers at the National Health

Service (NHS) in the United Kingdom initiated and attempted to establish in their respective organizations, with varying degrees of success, in 2004–2005.

## Strong Ties and Affective Cooptation

Granovetter (1973, p. 1361) originally defined tie strength as a “combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the tie.” Organizational scholars following on Granovetter’s footsteps have highlighted the informational implications of strong ties, arguing that emotional closeness between two actors motivates them to invest time and energy in sharing complex, tacit, or confidential knowledge (Hansen 1999). The informational benefits of strong ties are therefore derivative of the affective bond between two actors (Krackhardt and Stern 1998, Marsden and Campbell 1984) and specifically the trust (Levin and Cross 2004) that motivates one “to treat the other in positive ways, or at least not to do something that would hurt the other” (Krackhardt 1992, p. 219). This foundation of trust has been shown to increase cooperation among organizational subunits during a crisis, boosting an organization’s adaptive performance in response to exogenous and endogenous shocks (Krackhardt 1992, Krackhardt and Stern 1998).

Building on this research, we argue that strong ties provide a change agent with a relational basis to overcome resistance when attempting to institute organizational change. Below we specify mechanisms through which strong ties to organization members with the potential to derail change allow the change agent to reduce resistance and thus boost the chances of change adoption. We then identify conditions under which such mechanisms are likely to affect fence-sitters and resisters differently.

## Resistance to Change and Affective Cooptation

Strong ties can increase an actor’s ability to introduce organizational change by providing her with an affective basis for the cooptation of actors capable of influencing the outcome of the change initiative. Cooptation is the preeminent influence tactic to manage those with the potential to hinder an actor’s goals (Gargiulo 1993, Pfeffer and Salancik 1978). Selznick (1949) first defined cooptation as a political process for managing opposition. External elements are incorporated into the decision-making structure of an organization by being given formal or informal power on the grounds of their potential to threaten essential goals. As a result, these potential opponents are neutralized or won over through assimilation into an established group or culture (Salancik and Pfeffer 1978). Organizational scholars first conceptualized cooptation as a tactic for preserving organizational

stability (Selznick 1949), but the influence achieved through cooptation can be directed toward garnering support for new ideas as much as it can be used to preserve the status quo in an organization (Gargiulo 1993).

Affective cooptation, as we define it, is a relational strategy in which the neutralization or conversion of those with the potential to threaten an actor's goals hinges not on conferring tangible advantages—such as status or monetary rewards—to the coopted actor, but rather on the emotional bond between individuals. We propose that two relational mechanisms account for the positive effect of strong ties on change adoption: benevolence-based trust (Mayer et al. 1995) and personal approval (Raven 1992). Benevolence, a form of interpersonal trust (Mayer et al. 1995), exists when actors have genuine care and concern for the welfare of partners and want to do good to them. Benevolence toward the change agent motivates an actor to support her or, at a minimum, to avoid engaging in behaviors that can harm her. The counterpart of benevolence toward the change agent is the change agent's personal approval. A threat of disapproval from someone we care for can serve as an effective source of power for that person; likewise, their approval can operate as a powerful reward through which they can influence others' behavior (Raven 1992).

Any organization member whose potential resistance threatens the change agent's goals is a potential target of affective cooptation. Because their attitude toward the change constitutes a potential threat, both fence-sitters and resisters are susceptible to affective cooptation. When they feel benevolence toward the change agent and care for her personal approval, their positive interpersonal attitude may tip the balance in favor of the change. Fence-sitters' and resisters' desire to support the change agent, or at least to not disappoint her, may override their negative attitude toward the change, increasing the likelihood of its eventual adoption by preempting potential opposition. Such preempting is particularly important when the influence that potential fence-sitters and resisters yield in the organization is sufficient for their opposition to derail the change.

In principle, however, both change agents and their close contacts may use affective cooptation to influence each other. The mutual confiding and reciprocal services that characterize a strong tie imply not only that change agents may be able to overcome the potential resistance of their close contacts through affective cooptation, but also that close contacts who oppose a change may leverage the change agent's benevolence toward them and desire for their personal approval to dissuade the change agent from pursuing the initiative. Yet, the nature of the

social interaction between change agents and potential opponents makes the psychic cost of disappointing the change agent particularly high for her close contacts, for two reasons. First, by launching a change initiative, the change agent effectively requests others' support. In social interactions, people feel obliged to comply with requests coming from those they are affectively close to (Roskosewoldsen and Fazio 1992, Taylor 1978, Westphal et al. 2006). Second, by launching a change initiative, change agents publicly commit to implementing the change and, therefore, face consistency pressures (Gerard and Rotter 1961, Rosenfeld et al. 1984). These pressures make reversing course onerous for the change agent, and opposing her psychologically taxing for her close contacts, who may be reluctant to engage in behaviors that would damage the change agent's standing in the organization. Whether affective cooptation ultimately favors the change agent or the fence-sitters and resisters she is close to will depend, therefore, on the balance of psychological costs bearing on these actors.

Fence-sitters are ambivalent toward a change initiative because the pros and cons they associate with it counterbalance each other in their mind. Because fence-sitters see potential benefits in the change initiative, any reluctance a change agent may feel about disappointing fence-sitters to whom she is close to is offset by the awareness that fence-sitters value aspects of the change. At the same time, fence-sitters' benevolence toward the change agent and their desire for her personal approval is likely to discourage them from letting the change agent down by opposing the change, given that they see potential benefits, and not only potential drawbacks, stemming from it. Their support may come with an expectation of reciprocity in the future, but, at the time of change implementation, the change agent's request for help is likely to make the psychic cost of disappointing a close contact higher for fence-sitters than for change agents.

*HYPOTHESIS 1. A change agent's strong ties to potentially influential fence-sitters increase the likelihood of change adoption.*

In contrast to fence-sitters, closeness to resisters does not have a linear relationship with affective cooptation. Because the change itself has no substantive upside in the eyes of resisters, complying with the change agent's request for support requires resisters to refrain from acting on their unambiguously negative attitude toward the change solely for the sake of their relationship with the change agent. Likewise, to push the change through, the change agent has to disappoint close contacts, knowing that they see no benefit from the change. When the opponent's attitude toward the change is wholly negative, we argue that the benefits that change agents derive from

affective cooptation are contingent upon the intensity of the resistance that the change elicits.

The intensity of a negative attitude toward a change initiative is shaped in part by the content of what is being resisted (Jermier et al. 1994). Understanding resistance thus requires understanding what the change entails. Not all organizational change initiatives are equivalent. An important dimension along which they vary is the extent to which they break with the existing institutions in a field of activity, which are defined as patterns of acting and organizing that have become so taken for granted that actors perceive them as the only possible ways of acting and organizing (Douglas 1986). Organizations embedded in the same environment, and thus subject to the same institutional pressures, tend to adopt similar practices (for a review, see Heugens and Lander 2009). Organizational changes thus often converge with the institutional status quo, but they may also diverge from it (D'Aunno et al. 2000, Greenwood and Hinings 1996). The latter organizational changes, hereafter referred to as divergent organizational changes, are particularly challenging to implement, because they are likely to elicit more intense resistance, as they require persuading organization members to adopt practices that are not only new to them but also break with the norms in their institutional environment (Battilana et al. 2009, Greenwood and Hinings 1996).

We propose that the degree to which the change diverges from the institutional status quo in the organization's field of activity constitutes a boundary condition on change agents realizing the benefits of strong ties to potential resisters. Namely, when implementing less divergent changes, affective cooptation is likely to favor a change agent, because it may persuade resisters to tolerate a change that does not alter significantly the functioning of the organization. When the potential impact of the change is thus circumscribed, resisters' benevolence toward the change agent and desire for her approval may tip the balance in favor of the change. This is because the sense of social obligation to comply with requests coming from someone to whom they are close is likely to offset resisters' mild concerns about the change (Roskosewoldsen and Fazio 1992, Taylor 1978, Westphal et al. 2006).

When the degree of change divergence is higher, however, the advantages of strong ties accruing to the change agent are weaker, and may turn into liabilities that reduce the likelihood of change adoption. Two mechanisms account for this contingency. First, more divergent changes represent a greater threat for resisters, strengthening their opposition (Dent and Goldberg 1999). The result is likely to be a dampening of the benefits change agents draw from affective cooptation, because in this case complying with

the change agent's request for support requires resisters to override their intense opposition to the change solely for the sake of their relationship with the change agent. Second, pushing through a more divergent change increases the psychic cost for change agents, who may become reluctant to disappoint a close contact who sees only the downside of a change with the potential to alter substantially the functioning of the organization. This reluctance makes the change agent more vulnerable to reverse affective cooptation. As a result, with more divergent changes, greater closeness to resisters may decrease the likelihood of change adoption, not just because resisters are less likely to tolerate changes that threaten basic organizational functioning, but also because the psychic toll of their intense resistance can dampen the change agent's own impetus toward change. We hypothesize, therefore, that the effect of closeness to potentially influential resisters on change adoption is moderated by the degree to which the change initiative diverges from the institutional status quo in the organization's field of activity and the intensity of the resistance that this divergence implies. Therefore, we do not predict a main effect of closeness to potentially influential resisters on change adoption, but rather posit the following interaction effect:

**HYPOTHESIS 2.** *The less the change diverges from the institutional status quo, the more a change agent's strong ties to potentially influential resisters increase the likelihood of change adoption.*

By contrast, divergence from the institutional status quo has no contingent effects on the affective cooptation of fence-sitters. Unlike resisters, fence-sitters have a balanced view of the change's potential upside and downside, irrespective of the extent to which the change diverges from the institutional status quo. In their perception, breaking with taken-for-granted practices may greatly upset the organization but may also greatly improve it. In the case of fence-sitters, therefore, the attitudes induced by divergent changes are countebalanced in the positive and negative domains, thus not altering the likelihood of realizing the benefits of affective cooptation.

## Method

### Site

To test our hypotheses, we use multimethod longitudinal data on 68 change initiatives conducted at the NHS in the United Kingdom. The NHS is a state-funded healthcare system that delivers free universal healthcare. In 2004–2005, when the data for this study were collected, the NHS comprised a collection of more than 600 organizations that fell into three categories: administrative units, primary care service

providers, and secondary care service providers. It had a budget of more than £60 billion and employed more than one million people.

In 1997, under the leadership of the Labour Government, the NHS undertook a 10-year initiative to improve the quality, reliability, effectiveness, and value of the healthcare services delivered to society (Department of Health 1999). A crucial part of this initiative was to move away from the institutionalized model of medical professionalism (Giaimo 2002), a model predicated on physicians' dominance over all other categories of healthcare professionals (Harrison et al. 1992) and the placement of hospitals at the heart of the healthcare system (Peckham and Exworthy 2003). Physicians were the key decision makers in this system, controlling not only the delivery of services, but also, in collaboration with successive governments, the organization of the NHS (Harrison et al. 1992). As for hospitals, they typically held a monopoly position as providers of secondary-care health services and therefore received most of the resources. The NHS aimed to shift away from this system, which focused on treating acute episodes of disease in the hospital setting, to a system that would provide continuing care by integrating services and increasing cooperation among professional groups, and emphasizing follow-up and preventive care in the home or community setting that was under the responsibility of primary care organizations rather than hospitals. Though seven years had passed since the start of this initiative, physicians and hospitals were still operating at the apex of the hierarchy across the NHS at the time of the data collection (Ferlie et al. 2005, Peckham and Exworthy 2003). This suggests that the model of medical professionalism was still dominant, thereby defining the institutional status quo across NHS organizations. This context provided us with a unique opportunity to study the effects of informal bases for social influence in an entrenched system where the ability to effect organizational change has potentially vast societal implications.

### Sample

Our theory aims to explain the ability of change agents to persuade their organization to adopt the change. We are concerned, therefore, with actors who voluntarily initiate planned organizational changes. We tested our model with a sample of 68 clinical managers (i.e., actors with both clinical and managerial responsibilities) who initiated and implemented change initiatives in NHS organizations. The extent to which the changes initiated by these clinical managers were ultimately adopted by their respective organizations varied considerably. This variation is the object of the present study.

We selected this sample based on their participation in an executive education program entitled "Clinical Strategists Programme," a two-week residential learning experience conducted by a European business school. This voluntary program was available to all clinical strategists within the NHS, and was advertised both online and in NHS brochures. All 95 applicants were admitted to the program, and all who were admitted chose to attend and complete the program. The first week of the program focused on developing individuals' skills to improve their effectiveness in their immediate sphere of influence and leadership within clinical bureaucracies. The second week focused on developing participants' strategic change capabilities at the levels of the organization and the community health system. In their initial application to the program, applicants were asked to provide a description of a change project they would be required to implement within their organization after completing the program.

The final sample of 68 change projects reflects the omission of 27 participants who did not fill out the social network survey. All participants had clinical backgrounds as well as managerial responsibilities, their levels of responsibility varying from mid- to top-level management. The participants also represented a variety of NHS organizations (54% worked within primary care organizations, 26% in hospitals or other secondary care organizations, and 19% in NHS administrative units) and professions (25% medical doctors and 75% nurses or allied health professionals). Their ages ranged from 35 to 56 years, averaging 44. We ran unpaired *t*-tests comparing the full sample with this final sample along demographic and regression variables recorded in both samples. We found no significant differences, which alleviated potential concerns with nonresponse bias.

### Procedure and Data

We gathered data from multiple sources over a period of 12 months. Data on the participants' demographics and professional trajectories were obtained from their curriculum vitae. NHS human resource records provided data on the participants' formal position. Data on their social networks were collected through two sources. First, during the first week of the executive program, participants completed an extensive survey, administered in person, on the content of their social network ties both in their organization and in the NHS. Second, at the beginning of the study, we randomly selected eight change projects for which we conducted in-depth case studies including data from a weeklong visit to each of the eight research sites after one year of project implementation. During the field visits, we conducted between 12 and 20 interviews per site and attended all the meetings related to

the change. The interviews lasted between 45 minutes and two hours and were transcribed. Interviewees answered questions about a wide range of change-related topics, including the nature of their social relationship with the change agent.

Data about the content of the change projects at different points in their design and implementation were gathered from the change agents. We reassured them that their change project descriptions would remain confidential. Participants submitted descriptions of their intended change project when they applied to the program, and were asked to present it in more detail during the first week of the program. After three months of implementation, we asked participants to write a refined project description, which elaborated on the original description. Four months after they started implementing their change initiative, we conducted one-on-one (10–15 minute) telephone interviews with all participants as well as with members of their organizations. These interviews allowed us to assess whether participants had initiated implementation of their change projects and to compare the change being implemented to what was described in their project descriptions. We confirmed that all participants had initiated projects that reflected their proposals. After six and nine months of project implementation, we conducted two additional phone interviews lasting between 20 and 40 minutes with each of the participants. Participants were asked to (1) describe the main actions that they had taken in relation to change implementation, (2) identify the main obstacles to change implementation (if any), (3) assess their progress in implementing the change, and (4) describe what they thought would be the next steps in implementing the change. These interviews were not recorded for confidentiality reasons, but we took extensive notes during the interviews. In addition to our interviews, each participant provided us access to all NHS official records related to the change initiative produced over the first year of change implementation and other relevant organizational specific documents.

We collected data on the outcome of the projects from three sources. First, we administered a telephone survey to the participants after 12 months of implementation. This survey focused on the degree in which the change projects had been adopted in the organization. Second, we verified the information provided by the change agents with two qualitative assessments of the change projects' degree of adoption collected from phone interviews with two informants working in the same organization as the participants. In most cases, one of the informants was directly involved in the change effort, and the other was either a peer or a superior of the change agent who knew about the change effort but was not

directly involved in it. Although we could not record these interviews for confidentiality reasons, we took extensive notes. Third, we used interview data and formal documentation from the eight in-depth field studies to corroborate the information provided by participants and the two informants on the outcome of the randomly selected subsample of change initiatives. By aggregating the data we collected from the change agents, other members of their organization, and organizational and NHS documents produced in relation to the change, we created longitudinal case studies of the 68 change initiatives.

### Dependent Variable

We measured the outcome of the change agent's initiative as the degree to which the organization had adopted it after 12 months of implementation. To that end, we used a scale comprising the following three items from the phone survey administered to change agents after one year of project implementation: (1) on a scale of one to five, how far did you progress toward completing the change project, where one is defining the project for the clinical strategists program and five is institutionalizing the implemented change as part of standard practice in your organization; (2) in my view, the change is now part of the standard operating practice of the organization; (3) in my view, the change was not adopted in the organization. The third item was reverse coded. The last two items were assessed using a five-point scale that ranged from one (strongly disagree) to five (strongly agree). Cronbach's alpha for the scale was 0.60, which is the acceptable threshold value for exploratory studies like ours (Nunnally 1978). To corroborate the change agents' reports, the research team that had followed the evolution of the change projects and collected all survey and interview data throughout the year produced a joint assessment of the degree of institutionalization of each change project using the same three-item scale later presented to the change agents, but before gathering the change agents' responses to these three items. The two sets of responses correlated 0.98.

To further test the reliability of the measure of change adoption, two raters independently coded the notes taken during the interviews with the informants working in the same organization as the participants to assess the level of adoption of the changes. The coders used the same three-item scale as the one used in the phone survey. Inter-rater reliability ( $Kappa = 0.88$ ) indicated a high degree of agreement among the raters (Landis and Koch 1977). The two raters reconciled any remaining differences in their respective assessments and produced a consensual evaluation (Larsson 1993). The resulting measures were nearly identical to the change agents' self-reported measures of the level of adoption of the change.

We also leveraged the case studies we developed on each change initiative. Two additional independent raters read and coded all case studies to assess the level of adoption of the changes. Once again, we obtained a high level of inter-rater reliability (Kappa coefficient = 0.90). The two raters were then asked to reconcile any differences in their assessments and produce a consensual evaluation. The final results of this coding were nearly identical to the change agents' self-reported measures of the level of adoption of the change thus further assuaging concerns related to possible self-reported biases.

### Independent Variables

*Mean tie strength with resisters and fence-sitters.* We measured the network variables in our model based on ego-network data collected with a name-generator survey approach commonly used in studies of organizational networks (e.g., Burt 1992). In this type of procedure, the survey respondents (egos) are asked to list contacts (alters) with whom they have one or more criterion relationships. The respondents are then asked to specify the nature of the relationship linking alters to one another. Although name-generator procedures may lead respondents to oversample on close contacts and central actors in the network (Marin 2004), ego-network data have been shown to correlate well with data where each dyad is constructed based on information gathered from both members of the pair (McEvily 1997), and measures from ego-network data are highly correlated with measures from whole-network data (Everett and Borgatti 2005). As we detail below, we corroborated our ego-network data with the qualitative evidence from the in-depth case studies we conducted on eight of the change initiatives.

Conceptually, we are not interested in all fence-sitters and resisters, but we are specifically concerned with fence-sitters and resisters who have the potential to derail the change initiative. This is consistent with the notion of cooptation as an influence process aimed at neutralizing or winning over actors with the potential to threaten essential goals. To identify such potentially influential resisters and fence-sitters, we used two survey items. The first item asked: "For your change project, are there any individuals in your primary care trust (PCT)/hospital trust/organization (delete as appropriate) whose *endorsement* of the project will significantly increase its chance of success?" The second item was similarly worded: "For your change project, are there any individuals in your PCT/hospital trust/organization (delete as appropriate) whose *active resistance* to the implementation of the project can derail it?" As the survey was administered in person to all participants, we explained to them that, in response to the first item, they needed to list potentially influential endorser, that is, people

who they thought would be in favor of the change and who had the potential to boost its chances of adoption. Similarly, we explained to participants that in response to the second item they had to list potentially influential resisters, that is, people who they thought would be opposed to the change and who had the potential to derail its adoption. As for organization members who they thought would be ambivalent toward the change and who had the potential to either boost or hinder change adoption, participants were asked to list them as both potentially influential endorser and resisters. In response to these survey questions, change agents listed 47% of alters as both potentially influential resisters and endorser. We coded these actors as potentially influential fence-sitters. By contrast, alters that the change agent listed only in response to either the "endorsement" or the "resistance" question were coded as potentially influential endorser and potentially influential resisters, respectively.

Following the established notion that "a measure of 'closeness' or intensity is the best indicator of tie strength" (Marsden and Campbell 1984, p. 482), we measured tie strength as a function of personal closeness to a network contact. To that end, we used the survey item "How close would you say you are with this person?" using a seven-point scale ranging from "especially close" to "very distant," with four as the neutral point "neither close nor distant." This scale was accompanied by the following explanation: "Note that 'especially close' refers to one of your closest personal contacts and that 'very distant' refers to the contacts with whom you do not enjoy spending time, that is, the contacts with whom you spend time only when it is absolutely necessary." Based on responses to the "closeness" survey item, we constructed measures for mean tie strength to potential resisters, fence-sitters and endorser, respectively, as the average tie closeness with members of the three nonoverlapping subgroups. In our statistical models, we used mean tie strength to resisters and fence-sitters as predictor variables and mean tie strength to endorser as a control variable.

Because our measures of endorser, resisters, and fence-sitters, as well as closeness to them, were based on the change agents' assessment, we used the eight in-depth case studies to validate these measures on a subsample of change initiatives. Two external coders were asked to identify all the names of endorser, fence-sitters, and resisters cited in the interviews conducted within the organization in which the change agent operated. We then compared this list with the list generated by the change agents. In seven out of the eight cases, the two lists were identical. In one case, the change agent identified one endorser whom interviewees did not cite. This endorser was the head

of the PCT with whom the change agent was interacting but to whom the people interviewed did not have access, thereby preventing them from assessing her level of support. In addition, over 80% of the people we interviewed for the eight in-depth cases had been identified as endorsers and/or resistors by the change agents. Because we asked all the interviewees about their relationship with the change agent, we thus gathered information about potentially influential endorsers', resistors' and fence-sitters' perception of their degree of closeness to the change agent. The two external coders used the same scale as the one used in the social network survey to assess interviewees' perceived degree of closeness to the change agent. In all eight cases, the two coders' independent ratings were consistent with each other and with the measure reported by the change agent, increasing our confidence in the validity of the survey measure. For example, one interviewee that the change agent rated as very distant had the same perception of their low level of closeness, as indicated by one of his comments:

I think that this change is a very bad idea. I already told [name of the change agent] about it. ... Anyway, we do not interact much, which may be better because we often disagree on what is best for this health community.

Although the qualitative evidence from the eight in-depth case studies fully corroborated participants' reports, we cannot rule out the possibility of inaccuracies in change agents' expectations about likely endorsers or resistors of other change initiatives in our sample. In particular, a change agent's closeness to other actors may have affected her assessment of their potential for endorsement or resistance, such that closeness and expected resistance would be negatively correlated. This possibility makes for a conservative test of our predictions because those listed as resistors would be the residual after discounting the support expected from strong ties. More generally, the potential for error in the measurement of resistors, fence-sitters, and endorsers decreases statistical power, thus increasing the likelihood of false negatives.

*Divergence from institutional status quo.* To measure the degree of divergence for each change project from the institutionalized model of medical professionalism, which was the dominant institutionalized template for organizing within in the NHS at the time of the present study (Giaimo 2002, Peckham and Exworthy 2003), we used two scales developed by Battilana (2011). The first scale<sup>1</sup> measures the degree

to which change projects diverged from the institutionalized model of role division among professionals through four items aimed at capturing the extent to which the change challenged the dominance of doctors over other healthcare professionals in both the clinical and administrative domains. The second scale<sup>2</sup> measures the degree to which change projects diverged from the institutionalized model of role division among organizations through six items aimed at capturing the extent to which the change challenged the dominance of hospitals over other types of organizations in both the clinical and administrative domains. Each of the ten items in the questionnaire was assessed using a three-point rank ordered scale that ranged from one (no extent) to two (some extent) to three (great extent).

Two independent raters blind to the study's hypotheses used these two scales to code the participants' change project descriptions collected three months after the start of implementation. These descriptions averaged three pages in length and followed the same template: presentation of the project goals, resources required to implement the project, people involved, key success factors, and measurement of the outcomes. Inter-rater reliability, as assessed by the kappa correlation coefficient, was 0.90. To resolve rating discrepancies, the raters discussed passages in the change project descriptions deemed relevant to the scale until they reached consensus. Using this method, all change projects were assigned a score on each of the two scales ranging from one (no extent) to three (great extent) corresponding to the average of the items included in each scale. We measured the degree of change divergence as the unweighted average of the two ratings, because a single change initiative could diverge from both the

of professionals' role division: (1) To what extent does the project aim to increase nurses'/allied health professionals'/managers' decision-making power in the clinical domain? (2) To what extent does the project aim to increase nurses'/allied health professionals'/managers' decision-making power in the administrative domain? (3) To what extent does the project aim to decrease doctors' decision-making power in the clinical domain? (4) To what extent does the project aim to decrease doctors' decision-making power in the administrative domain?

<sup>2</sup> Six additional items in the questionnaire (scale 2) assessed the degree to which change projects diverged from the institutionalized model of organizations' role division: (1) To what extent does the project aim to increase the influence of the primary care sector in the clinical domain? (2) To what extent does the project aim to increase the influence of the primary care sector in the administrative domain? (3) To what extent does the project aim to decrease the influence of the secondary care sector in the clinical domain? (4) To what extent does the project aim to decrease the influence of the secondary care sector in the administrative domain? (5) To what extent does the project aim to improve cooperation across organizations (especially across primary, secondary and social care organizations)? (6) To what extent does the project aim to promote continuous care through integration of services?

<sup>1</sup> Four items in the questionnaire (scale 1) captured the degree to which change projects diverged from the institutionalized model



**Table 1** Examples of Change Initiatives with High and Low Levels of Divergence from the Institutional Status Quo

High divergence	Low divergence
<p><i>Sample initiative 1.</i> The objective of this initiative was to transfer stroke rehabilitation services (e.g., language retraining) from the secondary to the primary care sector. Traditionally, stroke patients were stabilized and rehabilitated in a hospital, resulting in long stays. This approach consumed substantial resources that were unnecessary for the rehabilitation phase of treatment. Moreover, because many beds were occupied by rehabilitating patients, there were often shortages for stroke patients who required more acute care. Under this proposed change, stable postacute patients were relocated from a hospital to a unit in a PCT for rehabilitation. This transfer of the delivery of rehabilitation services from the secondary to the primary care sector significantly diverged from the institutionalized model of role division among organizations.</p> <p><i>Sample initiative 2.</i> This initiative aimed to develop a nurse-led patient discharge system. This significant change would transfer clinical tasks and decision-making authority from physicians to nurses. Traditionally, discharge decisions were made exclusively by physicians; with this new initiative, nurses would make the final decision to discharge patients. Not only would this give more responsibility on nurses, but it would also place more accountability on them for clinical decisions. Although physicians would relinquish control over certain routine decisions, they would also be freed to focus their attention and skills on more complex patients and tasks.</p>	<p><i>Sample initiative 3.</i> This initiative aimed to transfer a ward that specialized in the treatment of the elderly from a PCT to a hospital. Before this change, both the PCT and hospitals provided various services for the elderly, who represent the majority of patients receiving services in hospitals. The transfer of responsibility for all elderly care services to the hospital reinforced the centralization of services in hospitals and therefore did not diverge from the institutionalized role division among organizations.</p> <p><i>Sample initiative 4.</i> The goal of this initiative was to hire an administrative assistant to implement and manage a computerized appointment system. The addition of an employee did not challenge the status quo because it neither changed the division of labor nor altered the balance of power between healthcare professionals.</p>

institutionalized model of role division among professionals and among organizations. Table 1 provides examples of change initiatives characterized by high and low divergence from the institutional status quo.

Based on this measure of divergence, we constructed an interaction term by multiplying the mean-centered measures of change divergence and mean tie strength to resisters.

### Control Variables

*Hierarchical level.* Actors' position in their organization's hierarchy can affect the outcome of change efforts (Tushman and Romanelli 1985). To account for this, we measured change agents' hierarchical level with a rank-ordered categorical variable using job titles to code the hierarchical position of both the change agents and all the contacts they listed in the social network questionnaire. As a government-run set of organizations, the NHS has standardized definitions and pay scales for all positions. This standardization insured that participants' roles, responsibilities, and hierarchical positions were comparable across organizational sites. In consultation with NHS professionals, we were able to develop an accurate classification scheme to link job titles to a hierarchical position.<sup>3</sup>

<sup>3</sup> The coding scheme is as follows: 1 = secretaries, P.A.s, coordinators, and other jobs with no management responsibility; 2 = assistant managers, assistant directors, associate directors, deputy directors, deputy head, nurses, allied health professionals; 3 = head of service, lead/leader, consultants, matron, senior nurses, general practitioners, professors, manager, general manager; 4 = nonexecutive director, dean, deputy chair; 5 = executive director, chief executive officer, chairman, vice chair.

*Tenure in the organization.* We controlled for the number of years the change agent had spent in his or her organization. Individuals with longer tenure in their organization usually command greater legitimacy in the eyes of other organization members and tend to be more knowledgeable about specificities of their organizations (Huber et al. 1993), which may increase their ability to have their organization adopt the change.

*Professional group status.* In the NHS, as in most healthcare systems, the status hierarchy between professional groups distinctly favors physicians, who occupy a higher status position relative to other healthcare professionals, such as nurses and allied health professionals (Ferlie et al. 2005, Harrison et al. 1992). Change agents who belong to higher status social groups have more legitimacy and greater access to resources, which may increase their ability to have their organization adopt the change. Accordingly, we used a dummy variable to account for professional groups' status that was coded 0 for low status professionals (i.e., nurses and allied health professionals) and 1 for high status professionals (i.e., physicians).

*Organizational status.* Lower-status organizations, which are less concerned about potential status loss when considering change, are likely to be more amenable to implementing change (Greenwood and Hinings 1996, 2006). Of the three types of organizations that compose the NHS, primary care organizations were considered to be lower status organizations than hospitals or administrative units (Peckham and Exworthy 2003). There was no clear status difference between the hospitals and administrative organizations (Peckham and Exworthy 2003).

To account for these differences in status, we created a dummy variable valued 1 for primary care trusts and 0 for hospitals and administrative organizations.

*Organizational size.* Smaller organization may have fewer resources to devote to change implementation (Huber et al. 1993). On the other hand, change in large organizations may be more difficult because of the increased coordination demanded by implementation in a complex system (Kimberly 1976). To account for these effects, we controlled for organizational size measured in total full-time equivalents (FTEs).

*Creation of new service.* Creating a new service typically requires more energy and effort than redesigning an existing service (Van de Ven et al. 1989). For this reason, it may be more challenging for change agents to implement such changes. We therefore included a dummy variable for creation of a new service. To that end, we coded the change-project descriptions that participants prepared after three months of project implementation. We distinguished between two project types: projects aimed at creating new administrative services (e.g., computerized patient records or clinical care databases) or patient-care services (e.g., programs targeting vulnerable populations, such as the frail elderly); and projects aimed at redesigning existing administrative services (e.g., pay or certification improvement programs) or patient care services (e.g., redefinition of the roles of nurses, allied health professionals, and physicians in the delivery of rehabilitation services for stroke patients).

*Mean tie strength with endorser.* Because strong ties to endorser may facilitate change adoption by leading endorser who are close to the change agents to do even more to help her than they would otherwise, we controlled for mean strong tie with endorser.

## Results

Descriptive statistics and correlation coefficients are reported in Table 2. Table 3 presents the results of

ordinary least squares regressions with organization-clustered robust standard errors predicting the degree of adoption of the change initiative. Model 1 includes the control variables. The number of observations is 58, due to seven change agents who did not list any contacts as a pure endorser and three change agents whose organizations had unstable size (measured as total number of FTEs) as a result of undergoing mergers and related personnel restructuring during the 12 months of data collection.

None of the control variables have a statistically significant effect on change adoption. The coefficient for mean tie strength with endorser, in particular, suggests that closeness to potential influencers who are positively disposed toward the change does not provide a change agent with distinctive advantages. Endorser may well aid change adoption by championing the initiative and generating support for it (Markham 2000). Their benevolence toward the change agent and desire for her personal approval is, however, unlikely to change their behavior, because their attitude toward the change is positive from the start, thereby posing no threat to their relationship with the change agent. Our qualitative data provided several illustrations of this behavioral pattern. For example, a nurse who was attempting to implement nurse-led preadmission clinics for patients who were about to undergo surgery, stated:

When I launched this project I knew that I could count on the support of my supervisor, of the theater manager and of the service improvement facilitator. ... We know about each other's family and always try to be supportive of each other. ... I was surprised to get the support of two young doctors who I did not know before I launched this initiative. Contrary to most other doctors, they were convinced from the beginning that the project was worth implementing. ... When I think about it, they did as much to help me as did my supervisor and the service improvement facilitator. They

**Table 2** Means, Standard Deviations of Variables, and Correlation Matrix

	Mean	SD	Min	Max	1	2	3	4	5	6	7	8	9	10	11
1 <i>Change adoption</i>	3.91	0.82	1.67	5.00											
2 <i>Tenure in the organization</i>	5.60	6.05	0.00	26.00	−0.06										
3 <i>Hierarchical level</i>	3.85	0.95	1.00	5.00	−0.07	0.16									
4 <i>Professional group status (doctor)</i>	0.25	0.43	0.00	1.00	0.03	0.24	0.33								
5 <i>Organizational status</i>	0.52	0.50	0.00	1.00	0.09	−0.11	0.10	0.06							
6 <i>Organizational size</i>	23.03	21.46	1.71	71.28	−0.12	−0.11	−0.24	−0.22	−0.58						
7 <i>Change divergence</i>	1.41	0.38	1.00	2.67	0.09	−0.13	−0.11	−0.09	0.35	−0.02					
8 <i>Creation of new service</i>	0.36	0.48	0.00	1.00	−0.20	0.05	0.04	−0.07	0.00	−0.16	−0.16				
9 <i>Mean tie strength with endorser</i>	4.97	0.92	3.20	7.00	0.07	−0.07	−0.14	−0.07	0.12	0.06	0.00	−0.16			
10 <i>Mean tie strength with fence-sitters</i>	4.38	1.15	1.00	7.00	0.31	0.03	0.24	0.10	0.11	0.13	0.08	−0.15	0.11		
11 <i>Mean tie strength with resisters</i>	4.27	1.33	1.00	7.00	0.10	−0.09	−0.05	0.07	0.02	0.14	−0.13	−0.13	0.26	0.35	
12 <i>Divergence × Mean tie strength with resisters</i>	−0.07	0.51	−1.10	1.52	−0.40	0.15	0.22	0.03	−0.10	−0.15	−0.05	0.08	0.04	−0.10	−0.15

Note. Correlation coefficients > 0.23 are significant at 0.05 level.

**Table 3** Ordinary Least Squares Regressions with Robust Standard Errors Predicting Degree of Adoption of the Change Initiative

	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Hierarchical level</i>	−0.060 (0.125)	−0.219 (0.139)	−0.314 (0.162)	−0.270 (0.183)	−0.192 (0.188)
<i>Tenure in the organization</i>	−0.015 (0.016)	−0.013 (0.020)	−0.002 (0.023)	0.003 (0.023)	
<i>Professional group status (doctor)</i>	0.075 (0.277)	0.162 (0.278)	0.109 (0.260)	0.100 (0.218)	
<i>Organizational status</i>	−0.068 (0.334)	0.079 (0.326)	0.292 (0.409)	0.068 (0.404)	
<i>Organizational size</i>	−0.011 (0.007)	−0.009 (0.007)	−0.010 (0.009)	−0.014 (0.008)	−0.013* (0.006)
<i>Change divergence</i>	0.332 (0.306)	0.358 (0.302)	0.448 (0.357)	0.390 (0.302)	0.154 (0.330)
<i>Creation of new service</i>	−0.407 (0.244)	−0.148 (0.226)	−0.121 (0.271)	−0.048 (0.247)	
<i>Mean tie strength with endorsers</i>	0.071 (0.116)	0.028 (0.122)	−0.054 (0.143)	0.008 (0.146)	
<i>Mean tie strength with fence-sitters</i>		0.301*** (0.082)	0.279* (0.118)	0.238* (0.105)	0.232* (0.090)
<i>Mean tie strength with resisters</i>			0.059 (0.130)	0.025 (0.088)	0.025 (0.084)
<i>Divergence × Mean tie strength with resisters</i>				−0.580* (0.264)	−0.619** (0.202)
<i>Constant</i>	4.263*** (0.752)	4.492*** (0.848)	4.645*** (0.996)	4.645*** (0.952)	4.665*** (0.975)
<i>R</i> <sup>2</sup>	0.152	0.310	0.405	0.511	0.405
<i>N</i>	58	49	39	39	40

Note. Robust standard errors in parentheses; two-tailed tests.

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

made themselves available every time I needed their help. ...It was clear that they wanted this change to happen.

This quote indicates that relational closeness is neither a prerequisite for an endorser to champion a change initiative nor does it boost the amount of support that endorsers provide to the change agent. The extent of endorsers' support appears therefore to be independent of their personal connection to the change agent.

Model 2 tests the effects of tie strength to fence-sitters. The number of observations is 49, due to nine change agents who did not list any alters as fence-sitters. The coefficient for mean tie strength to fence-sitters is positive and statistically significant, supporting Hypothesis 1. This variable contributes an additional 15.8% of explained variance over Model 1 ( $\chi^2_{(1)} = 34.01$ ,  $p < 0.001$ ). By contrast, the variable mean tie strength with resisters (Model 3) is not statistically significant. This result indicates that a change agent's strong ties with potential resisters of the change initiative do not directly increase the likelihood that the change initiative will be adopted in the organization. Our qualitative data offers multiple illustrations of our findings regarding the effectiveness of strong ties to fence-sitters in change implementation and enable

us to document directly the mechanisms underlying the predicted effects of tie strength. In four out of the eight change initiatives for which we conducted in-depth case studies, the change was ultimately adopted. In all four cases, the change agents reported having strong ties to fence-sitters. One of these change agents was attempting to implement a new system of quality control in his hospital, and explained:

When I first presented the project to my colleagues, a number of them were skeptical. They could see some of the benefits of the new system that I wanted us to use, but they also expressed serious doubts about it. ...I knew that I had to win them over. I decided to start with those among them with whom I was friend. I was confident that they would not betray me. ...My reasoning was that if I had them on board, they would then help me convert others and they did.

Another change agent who succeeded in having his practice adopt a new information technology booking system insisted on the role of his close relationship to potentially influential fence-sitters:

Three of my colleagues understood why we needed to adopt this new booking system, but they were still somehow reluctant to go ahead with the change. I knew two of them personally. ...I was able to discuss the project with them outside of work. It was a

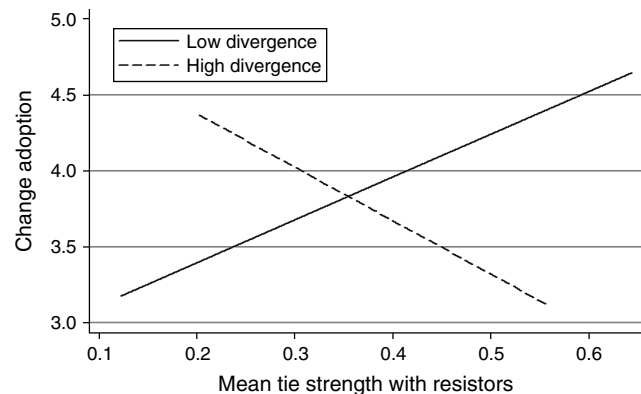
turning point. They realized that I needed their support. ... They started helping.

This change agent further explained that after he talked to his two close contacts, they agreed to try out the new booking system. The interviews that we conducted, not only with the change agent's two close contacts but also with other members of this organization, all confirmed that these two contacts subsequently advocated in favor of its adoption throughout the practice.

Model 4 tests Hypothesis 2. The number of observations is 39, due to 10 change agents who did not list any alters as pure resisters. The negative and significant coefficient for the interaction between change divergence and mean tie strength to resisters, combined with the lack of a significant coefficient for the main effect of mean tie strength to resisters, indicates that the positive effect of closeness to potentially influential resisters on change adoption is contingent on the degree to which the change diverges from the institutional status quo. This effect contributes an additional 10.6% of explained variance over Model 3 ( $\chi^2_{(1)} = 7.66, p < 0.01$ ). To account for the ratio of number of predictors to number of observations in our models, we also performed our analyses excluding control variables—such as, seniority in organization, professional group status, organizational status and mean tie strength with endorser—that failed to have statistically significant effects in our models and had low correlations with the predictors of interest. The exclusion of these controls affected neither the magnitude nor the statistical significance of the hypothesized effects (Model 5).<sup>4</sup>

Figure 1 graphs the moderation between divergence and mean tie strength to resisters observed in our data, using the median split of the distribution of change divergence. Simple-slope analyses indicate that the slope for low divergence is positive and statistically significant when tested on both Model 4 ( $\beta = 0.486; t = 2.59, p < 0.05$ ) and Model 5 ( $\beta = 0.557; t = 3.00, p < 0.01$ ). The simple slope for high divergence is negative and marginally significant when tested on Model 4 ( $\beta = -0.398; t = -1.83, p < 0.10$ ) and statistically significant with Model 5 ( $\beta = -0.465; t = -2.16, p < 0.05$ ). These analyses indicate that the association between closeness to resisters and change divergence follows the predicted crossover interaction pattern. In

**Figure 1** Observed Interactive Effect of Mean Tie Strength with Resisters and Divergence from Institutional Status Quo on Change Adoption



supplemental analyses not included in Table 3, we also performed regressions including multiplicative terms for change divergence and mean tie strength to, respectively, endorser and fence-sitters. Consistent with our theory, neither interaction term was statistically significant.

Our qualitative data provides illustrations of the level of change divergence moderating the effect of strong ties to resisters on change adoption and the mechanisms responsible for the moderation. For example, a change agent who was attempting to transfer a rehabilitation unit for stroke patients from the hospital to the PCT in her health community, thereby diverging from the institutionalized model of organizations' role division in the NHS, explained:

I was not surprised that the senior consultant in charge of the stroke unit at the hospital strongly opposed the project. ... I initially thought that the fact that we were neighbors and that we got on well together would help me to convert him but that never happened.

When interviewed, this senior consultant, whom the change agent had identified as a potentially influential resistor in the social network survey, explained why he remained firmly opposed to the transfer:

Our patients don't quite fit the quick in-and-out. Most of the patients I deal with are pretty disabled and very ill, with swallowing problems, etc. We have to try and accommodate that in the most suitable surroundings. ... I do not think that the PCT facilities provide an adequate setting for treating these patients, which is why I continue to oppose the transfer.

Despite their disagreement on the change project, the senior consultant confirmed the change agent's assessment that they were close, as reported in the social network survey. Indeed, talking about his relationship with the change agent, he stated:

We have known each other for a long time and there is mutual respect between us. ... We are neighbors and

<sup>4</sup> To address concerns regarding the changes in sample size due to missing data for the three measures of tie strength to endorser, resisters, and fence-sitters, and the measure for organizational size, we estimated models in which we replaced the missing data for each of these four variables with the mean value that variable had in the available sample (e.g., missing data for mean tie strength with endorser were replaced with the average tie strength with endorser across the 58 available observations). The results for our predictions are robust to this estimation.

we get on very well together. I always enjoy getting together with [name of the change agent]. She is a delightful person.

In the case of this change initiative, which diverged from the institutional status quo, the change agent's strong tie to the senior consultant who opposed the project did not help her to convert him. The change agent modified her strategy after six months of project implementation. Instead of trying to convince the senior consultant, she focused her energy on convincing the other stakeholders, including the hospital administration and the rest of the medical staff in charge of the stroke unit. She described her approach in the following way:

It was clear to me that the hospital administration and some of the medical staff in charge of the stroke unit shared some of the same concerns as the senior consultant. However, I could also see that they understood the advantages of the transfer that would ultimately free up more beds for acute stroke patients at the hospital. ...I knew some of the medical staff working in the unit well and I was quite confident that they would support me, as we had known each other for a long time. ...I had a friendly relationship with some of them who I would sometimes see outside of work. I told them that I really needed their support and they backed me up. ...Once I had secured their support, I turned to the other medical staff members.

This change agent, who was trying to implement a divergent change, thus successfully leveraged her closeness to some of the fence-sitters to turn them into endorsers of the project. When asked about the names of the fence-sitters that she first targeted, the change agent named four people who she had identified as being both potential resistors and endorsers in the social network survey and to whom she reported being close. When interviewed, these four people all reported being close to the change agent. One of them remembered:

When [name of the change agent] asked me for help with the project, I could not let her down. We have known each other for more than a decade. [name of the change agent] is more than a colleague; she became a friend over time. ...I had some concerns with the transfer like everyone else in the unit but I knew I could trust [name of the change agent] and I just could not imagine not doing anything to help her.

This person, who was part of the hospital medical staff, further explained how he informally met one-on-one with most of the members of the hospital ward in charge of treating stroke patients to tell them about the potential benefits of the change for the patients. The change agent, who confirmed that these meetings did take place, stated:

He took the time to explain the benefits of the new organization to his colleagues. ...It was very helpful.

The cases of two change agents involved in similar change initiatives in their respective hospitals are another telling example of both the importance of change agents' closeness to fence-sitters and the moderating effect of the level of change divergence when it comes to the effect of strong ties to resistors of change. Both change agents were attempting to transfer patient discharge decisions from doctors to nurses, thereby diverging from the institutionalized model of professionals' role division in the NHS. Whereas one of them tried to turn resistors to whom she was close into endorsers of the initiative, the other focused on turning fence-sitters to whom she was close into endorsers. In the former case, the change agent described her strategy in the following way:

I knew very well who the four resistors to the change would be. I had known two of them for a long time, as we had worked together in the past. ...Although I knew that they would initially disagree with me, I thought that I would be able to turn them around. ...We had been working together for such a long time that we had become more than colleagues. I know their family. They know mine.

Although the two resistors to whom the change agent felt close reported being close to her as well, they continued to oppose the change throughout its implementation. One of them explained:

I do not think that it is a good idea to have nurses in charge of discharge. They are not trained to do so. I like [name of the change agent] a lot, but I cannot possibly support such an initiative.

The emotional toll of continued resistance from people the change agent felt close to also emerged from the qualitative data. This nurse explained:

Some of my colleagues with whom I had worked for a long time continued to oppose the project. Even [name of one her colleagues], who I have known forever, thought that it was not a good idea. ...It was a bit hard on me.

This quote illustrates the weakening of change agents' motivation to push through a divergent change when those they are close to continue to oppose the change over time. The mechanisms at play are both the more intense resistance of close contacts and the greater psychic cost of their disapproval.

By contrast, the other change agent who was trying to implement nurse-led discharge at her hospital did not try to turn resistors into endorsers, but rather focused on turning fence-sitters to whom she was close into endorsers. This strategy was effective, as this change agent succeeded in implementing nurse-led discharge. The comparison of the interviews with the social network data confirmed that the three individuals that the change agent had identified as

fence-sitters to whom she was close were indeed fence-sitters and that they considered themselves as being close to the change agent. One of these fence-sitters whom the change agent successfully turned into an endorser remembered:

[name of the change agent] came to me early on to talk about the initiative. She made it clear that she knew that I would be reluctant to endorse the project, but she asked me to support her. ... I know her well and I like her. I could not be one of the people who would prevent her from succeeding with this initiative.

This person ended up facilitating a number of the workshops that the change agent organized to train nurses and help doctors understand the benefits of nurse-led discharge.

### Robustness Checks

In supplemental regression models, we tested the effect of additional control variables, including change agents' gender, age, educational background, tenure in a management position, tenure in current position, and a squared term for change agents' hierarchical level to account for the possibility that middle managers might be best positioned to implement change. Furthermore, we controlled for the possible influence of the organizational budget. These variables had no statistically significant effects in any model, nor did they affect the sign or significance of any variables of interest. They are therefore excluded from the regression models we report here, mindful as we are of how our sample size constrains the model's degrees of freedom. We also calculated the bootstrap coefficient estimates for all models, and obtained results fully comparable with those reported in Table 3.

Because our model uses the average tie strength to resistors, fence-sitters and endorsers, respectively, we wished to account for characteristics of the distribution of closeness that were not captured by the arithmetic average. To that end, we ran additional regression models controlling for the following features of each of the three subgroups of resistors, fence-sitters, and endorsers, respectively: (1) the number of alters; (2) the variability of tie strength, measured as the standard deviation of closeness scores; (3) the absence of alters, measured with dummy variables indicating whether a change agent had provided no nominations; and (4) the presence of very strong ties, measured as the number of alters with closeness (or frequency of interaction) ratings higher than five. None of these supplemental models changed either the direction or the statistical significance of the coefficients reported in Table 3. These robustness checks indicate therefore that it is the overall positioning

of a change agent in relation to resistors and fence-sitters that influences the likelihood of change adoption, rather than other features of the distribution of tie strength with resistors and fence-sitters, such as the variability of closeness, the absence of a particular alter type, or an especially close relationship to given individuals.

We also verified the robustness of our measure of tie strength with a measure of frequency of interaction collected in the social network survey. Frequency of interaction is a problematic measure of tie strength because it can confound tie strength with the foci around which network ties may be organized (work groups, formal superior-subordinate relationships, etc.); it also does not capture directly the affective content of the social relationship (Marsden and Campbell 1984). Having noted these concerns, we followed the approach of other studies (Hansen 1999, Levin and Cross 2004) and constructed alternate measures of tie strength using the average of closeness and frequency of interaction with potential resistors, fence-sitters, and endorsers. The results did not change when using these alternate measures of tie strength. By contrast, the coefficient based on frequency of interaction as the only measure of tie strength to potential fence-sitters were smaller in magnitude and weaker in statistical significance than those based on closeness, consistent with our argument that the mechanisms through which strong ties yield social influence stem from the affective bond between two actors, rather than the opportunity to collect information provided by frequent interaction.

To account for the possibility that a close personal connection may be particularly beneficial when potential resistors, endorsers, and fence-sitters occupy a high-rank position in the formal structure of the organization, we ran models including three interaction terms for mean tie strength with potential resistors, endorsers, and fence-sitters, respectively, and the mean hierarchical level of actors in each of these three groups. We found no evidence for any such pattern. We also tested our predictions using the subsample of resistors and fence-sitters with low professional status (i.e., non-doctors in the NHS). The results were consistent with those obtained with the full sample, suggesting that the effects of closeness to resistors and fence-sitters did not change with their professional status.

Finally, in addition to formal status, the change agent's informal status in the organization may affect the probability of change adoption, because well-regarded actors may be more effective change agents and have more strong ties to influential members of the organization. To account for this possibility, we constructed a measure of an actor's prominence in the task-advice network using the difference between

the number of received advice ties and the number of sent advice ties. The inclusion of prominence in the task-advice network altered neither the direction nor magnitude of the coefficients for our main predictors. Neither did measures of network size (i.e., the total number of alters in the change agent's network) and of network closeness (i.e., the total number of alters to which the change agent reported being close), indicating that the change agent's centrality in the organizational network, however measured, is not what underlies the effects of strong ties to fence-sitters and resisters that we document.

Overall, the results were robust across all model specifications and were entirely consistent with the qualitative evidence from the 68 case studies.

## Discussion

Organizational scholars have long recognized that change agents need to build a coalition behind the change they initiate (Kanter 1983, Kotter 1995) and that the effectiveness of such a coalition can be hampered by the failure to incorporate key players (Cyert and March 1963/1992, March 1988, Stevenson et al. 1985). Academic research on change, however, has tended to neglect the network mechanisms underlying coalition building. Our model addresses this gap by specifying relational mechanisms associated with change agents' network ties that aid them in their attempts to manage fence-sitters and resisters of the change initiative. First, we find that strong ties to potentially influential fence-sitters increase the likelihood that an organizational change will be adopted, irrespective of how divergent the change is. Second, we find that the effects of strong ties to potentially influential resisters on change adoption are contingent upon the extent to which the change diverges from the institutional status quo. The lower the levels of divergence the change entails, the more affective cooptation favors the change agent, because it increases the chance that the benevolence felt by resisters toward the change agent may persuade them to tolerate a change they do not approve of but which is unlikely to alter significantly the functioning of the organization. As the degree of divergence increases, however, not only does closeness to resisters have decreasing positive effects on change adoption, but it can have detrimental effects too, as the intense disapproval of close contacts increases the psychic toll change implementation takes on the change agent, dampening her own drive toward change.

Our theory and findings advance research on social networks and organizational change. Network scholars have made great strides in understanding the role of strong ties for organizational phenomena associated with change, including knowledge search

and transfer (Hansen 1999, Levin and Cross 2004), and organizational adaptation (Krackhardt and Stern 1998). This literature, however, has been more concerned with the presence or absence of strong ties and the resources flowing through them rather than the characteristics of the actors involved in the tie. Our findings demonstrate that the effects of tie strength can be contingent on whom the actor establishes a social connection with. In our sample, strong ties to endorsers of the change initiatives had no influence on the likelihood of change adoption. The beneficial effects of tie strength were confined to actors with the potential to derail the change. These findings indicate the need to theorize with greater nuance about the contingent effects of different targets of strong and weak social connections in organizations.

Our results also complement the prevailing emphasis in the literature on the role of tie strength for knowledge search and transfer with novel insight into strong ties as political means of affective cooptation. We show that cooptation, as a basic process for managing opposition, can rest on affective foundations and not just the instrumental ones generally emphasized in the literature. The change agent can win the support of those with the potential to derail the change by leveraging their benevolence and the power of personal approval—affective mechanisms that underlie the political impact of strong ties on organizational functioning. Although our primary focus is on how change agents' network of strong ties can help them influence other organization members, we also identify conditions under which organization members may in turn leverage the affective content of their relationship with change agents to influence them in return. Recognizing the potential mutuality of affective cooptation further informs the relational processes through which change unfolds—or fails to—in organizations (Thomas et al. 2011).

In addition to its contributions to the social networks literature, our study advances the body of work on organizational change in three ways. First, it provides theory and evidence of the benefits of change agents' closeness to fence-sitters and resisters for change adoption. Although the practitioner literature on organizational change has suggested that closeness to fence-sitters plays an important role in organizational change (Block 1987), scholarly research had not yet offered a systematic and rigorous analysis of this possibility. Upon closer inspection, our findings on the contingent effect of strong ties to resisters on change adoption indicate that the business principle that efforts to convert resisters of change are futile (Block 1987) should not be applied indiscriminately to all types of change. Conversely, our findings also indicate that there are limits to the popular wisdom suggesting the importance of closeness to

those who constitute a potential threat to the attainment of one's objectives, as expressed in the oft-cited adage "keep your friends close and your enemies closer." We find that, in the context of more divergent organizational change initiatives, close ties to resisters may not facilitate change adoption, and may in fact hamper it, which suggests that the strategy of trying to keep your potential "enemies closer" may be counterproductive when the divergent nature of the change intensifies their resistance. However, when the change does not diverge from the institutional status quo, change agents who divert their influence efforts away from resisters may be ill-advised, as our findings reveal that strong ties to resisters may in this case facilitate change adoption. This result suggests that change initiatives should be systematically considered for the extent to which they diverge from the institutional status quo. Doing so opens the way to research bridging the organizational change and institutional change literatures that have mostly evolved on separate tracks (Battilana et al. 2009, Greenwood and Hinings 2006).

Second, organization theorists have tended to favor the organizational level of analysis in examining change (for reviews, see Armenakis and Bedeian 1999, Van de Ven and Poole 1995). By contrast, more practice-oriented researchers have focused on the actions of change agents within organizations (Judson 1991, Kotter 1995). This separation of theory and practice has come at the expense of our understanding of organizational change, and has led to repeated calls for studies that would help resolve it (e.g., Beer and Eisenstat 1996, Pettigrew et al. 2001). Our study contributes to resolving this dichotomy by bridging the individual and organizational levels of analysis in examining the influence of individual actors' informal ties in organizational networks on the likelihood of change adoption.

Third, although it is well established that the structural position of change agents affects their ability to implement change in organizations (Tushman and Romanelli 1985), research on organizational change has focused on the influence of change agents' formal position in the organizational structure at the expense of considering the change agent's informal position in organizational networks. Our study contributes to filling this gap by specifying theoretically and documenting empirically the influence of network characteristics on a change agent's ability to implement change in organizations.

A limitation of this research is that, although we were able to draw data from multiple sources, our sample size was constrained by the significant challenges of collecting data on scores of organizations over time (Pettigrew et al. 2001). Nonetheless, all of our hypotheses were confirmed in the quantitative

data and the theoretical mechanisms documented in the qualitative evidence, increasing our confidence in the robustness of our findings. The limited statistical power of the estimations, however, makes it difficult to draw firm conclusions based on results that were not statistically significant. In addition to concerns about its size, our sample was nonprobabilistic, as it comprised purposefully selected and self-appointed change agents. This is a population of interest because, as we demonstrate, self-appointed change agents vary considerably in their effectiveness at persuading the organization to adopt the change they championed. Therefore, even when the process of self-selection into the role of change agent is not studied directly, understanding what factors affect the effectiveness of change agents is an important undertaking. Yet, uncovering the conditions under which organizational actors become change agents is as important a question as understanding the factors that contribute to change adoption (Buchanan and Badham 1999).

With regard to external validity, our analysis concerned a sample of planned organizational change projects initiated by clinical managers in the NHS, a large public-sector organization. With the question of how to reform existing institutions—such as financial and healthcare systems—an increasingly urgent public policy concern all over the world, a better understanding of the factors that counteract resistance to change in entrenched systems make the NHS a highly consequential setting for this study. Still, comparative research across different settings is needed to better account for how contextual factors may interact with informal networks to shape change agents' ability to change their organizations. For example, the hierarchical nature of the NHS can stifle informal channels of influence under a cloak of bureaucratic control while also making personal networks all the more important in overcoming the resistance of deeply rooted formal structures and cultural norms. Less mature and formalized organizational environments may reveal effects of network ties as sources of influence in organizational change that may not be as relevant and apparent as they are in a field with strong institutionalized norms such as healthcare.

These avenues for future research notwithstanding, our study demonstrates the relevance of interpersonal networks as political tools for change agents attempting to shape their organizations. It encourages network and organizational change scholars alike to consider the affective interpersonal dynamics that underlie the effectiveness of individual agency in organizations while accounting for the nature of the change, and thus improve our understanding of the relational foundations of macro behavior in organizational fields.



## Acknowledgments

The authors contributed equally to this paper. The authors thank Jesper Sørensen and the anonymous associate editor and reviewers for their valuable comments on earlier versions of this paper. The authors also acknowledge the helpful comments they received from Michel Anteby, Joel Baum, Peter Bracken, Thomas d'Aunno, Stefan Dimitriadis, Martin Gargiulo, Mattia Gilmartin, Ranjay Gulati, Morten Hansen, Herminia Ibarra, Sarah Kaplan, Otto Koppius, Tal Levy, Christopher Marquis, Bill McEvily, Jacob Model, Metin Sengul, Bill Simpson, Michael Tushman, and seminar participants at INSEAD, McGill University, Harvard University, Bocconi University, and HEC Paris.

## References

- Armenakis AA, Bedeian AG (1999) Organizational change: A review of theory and research in the 1990s. *J. Management* 25(3):293–315.
- Armenakis AA, Harris SG (2002) Crafting a change message to create transformational readiness. *J. Organ. Change Management* 15(2):169–183.
- Balsano TJ, Goodrich NE, Leek RK, Miley JW, Morse TF, Roberts DA (2008) Identify your innovation enablers and inhibitors. *Res. Tech. Management* 51(6):23–33.
- Battilana J (2011) The enabling role of social position in diverging from the institutional status quo: Evidence from the UK National Health Service. *Organ. Sci.* 22(4):817–834.
- Battilana J, Leca B, Boxenbaum E (2009) How actors change institutions: Towards a theory of institutional entrepreneurship. *Acad. Management Ann.* 3(1):65–107.
- Beer M, Eisenstat RA (1996) Developing an organization capable of implementing strategy and learning. *Human Relations* 49(5):597–619.
- Block P (1987) *The Empowered Manager: Positive Political Skills at Work* (Jossey-Bass, San Francisco).
- Brass DJ (1984) Being in the right place—A structural analysis of individual influence in an organization. *Admin. Sci. Quart.* 29(4):518–539.
- Buchanan D, Badham R (1999) Politics and organizational change: The lived experience. *Human Relations* 52(5):609–629.
- Burt RS (1992) *Structural Holes: The Social Structure of Competition* (Harvard University Press, Cambridge, MA).
- Coch L, French JRP (1948) Overcoming resistance to change. *Human Relations* 1(4):512–532.
- Cyert RM, March JG (1963/1992) *A Behavioral Theory of the Firm* (Prentice Hall, Englewood Cliffs, NJ).
- D'Aunno T, Succi M, Alexander J (2000) The role of institutional and market forces in divergent organizational change. *Admin. Sci. Quart.* 45(4):679–703.
- Dent EB, Goldberg SG (1999) Challenging “resistance to change.” *J. Appl. Behavioral Sci.* 35(1):25–41.
- Department of Health (1999) *Agenda for Change: Modernizing the NHS Pay System—Joint Framework of Principles and Agreed Statement on the Way Forward* (Crown, London).
- Douglas M (1986) *How Institutions Think* (Syracuse University Press, Syracuse, NY).
- Everett M, Borgatti SP (2005) Ego network betweenness. *Soc. Networks* 27(1):31–38.
- Ferlie E, Fitzgerald L, Wood M, Hawkins C (2005) The nonspread of innovations: The mediating role of professionals. *Acad. Management J.* 48(1):117–134.
- Frost PJ, Egri CP (1991) The political process of innovation. Cummings LL, Staw BM, eds. *Research in Organizational Behavior*, Vol. 13 (JAI Press, Greenwich, CT), 229–295.
- Gargiulo M (1993) 2-step leverage: Managing constraint in organizational politics. *Admin. Sci. Quart.* 38(1):1–19.
- Gerard HB, Rotter GS (1961) Time perspective, consistency of attitude, and social influence. *J. Abnormal Soc. Psych.* 62(3):565–572.
- Giaimo S (2002) *Markets and Medicine: The Politics of Health Care Reform in Britain, Germany and the United States* (University of Michigan Press, Ann Arbor).
- Giangreco A, Peccei R (2005) The nature and antecedents of middle manager resistance to change: Evidence from an Italian context. *Internat. J. Human Resource Management* 16(10):1812–1829.
- Granovetter M (1973) Strength of weak ties. *Amer. J. Sociol.* 78(6):1360–1380.
- Greenwood R, Hinings CR (1996) Understanding radical organizational change: Bringing together the old and the new institutionalism. *Acad. Management Rev.* 21(4):1022–1054.
- Greenwood R, Hinings CR (2006) Radical organizational change. Clegg SR, Hardy C, Lawrence TB, Nord WR, eds. *The Sage Handbook of Organization Studies* (Sage, London), 814–842.
- Hansen MT (1999) The search-transfer problem: The role of weak ties in sharing knowledge across organization subunits. *Admin. Sci. Quart.* 44(1):82–111.
- Harrison S, Hunter D, Marnoch G, Pollitt C (1992) *Just Managing: Power and Culture in the National Health Service* (MacMillan, London).
- Heugens P, Lander MW (2009) Structure! Agency! (and other quarrels): A meta-analysis of institutional theories of organization. *Acad. Management J.* 52(1):61–85.
- Huber GP, Sutcliffe KM, Miller CC, Glick WH (1993) Understanding and predicting organizational change. Huber GP, Glick WH, eds. *Organization Change and Redesign: Ideas and Insights for Improving Performance* (Oxford University Press, New York), 215–268.
- Ibarra H (1993) Network centrality, power, and innovation involvement: Determinants of technical and administrative roles. *Acad. Management J.* 36(3):471–501.
- Jermier JM, Knights D, Nord WR (1994) *Resistance and Power in Organizations* (Routledge, New York).
- Judson AS (1991) *Changing Behavior in Organizations: Minimizing Resistance to Change* (Blackwell, Cambridge, MA).
- Kanter RM (1983) *The Change Masters: Corporate Entrepreneurs at Work* (Simon & Schuster, New York).
- Kaplan S (2008) Framing contests: Strategy making under uncertainty. *Organ. Sci.* 19(5):729–752.
- Kellogg KC (2011) Hot lights and cold steel: Cultural and political toolkits for practice change in surgery. *Organ. Sci.* 22(2):482–502.
- Kimberly JR (1976) Organizational size and the structuralist perspective: A review, critique, and proposal. *Admin. Sci. Quart.* 21(4):571–597.
- Kotter JP (1995) *Leading Change: Why Transformation Efforts Fail* (Harvard Business Review, Cambridge, MA).
- Krackhardt D (1992) The strength of strong ties: The importance of philios in organizations. Nohria N, Eccles RG, eds. *Networks and Organizations* (Harvard Business School Press, Cambridge, MA), 216–239.
- Krackhardt D, Stern R (1998) Informal networks and organizational crises: An experimental simulation. *Soc. Psych. Quart.* 51(2):123–140.
- Landis JR, Koch GG (1977) The measurement of observer agreement for categorical data. *Biometrics* 33(1):159–174.
- Larsson R (1993) Case survey methodology: Quantitative analysis of patterns across case studies. *Acad. Management J.* 36(6):1515–1546.
- Levin DZ, Cross R (2004) The strength of weak ties you can trust: The mediating role of trust in effective knowledge transfer. *Management Sci.* 50(11):1477–1490.
- Lippitt R (1958) *The Dynamics of Planned Change* (Harcourt, Brace, New York).

- March JG (1988) *Decisions and Organizations* (Basil Blackwell, New York).
- Marin A (2004) Are respondents more likely to list alters with certain characteristics? Implications for name generator data. *Soc. Networks* 26(4):289–307.
- Markham SK (2000) Corporate championing and antagonism as forms of political behavior: An R&D perspective. *Organ. Sci.* 11(4):429–447.
- Marsden PV, Campbell KE (1984) Measuring tie strength. *Soc. Forces* 63(2):482–501.
- Mayer RC, Davis JH, Schoorman FD (1995) An integrative model of organizational trust. *Acad. Management Rev.* 20(3):709–734.
- McEvily B (1997) *Bridging the Industrial Divide: Small Firm Innovativeness and Regional Institutions in Geographical Clusters* (University of Minnesota, Minneapolis).
- Nadler DA, Tushman ML (1990) Beyond the charismatic leader: Leadership and organizational change. *Califor. Management Rev.* 32(2):77–97.
- Nunnally JC (1978) *Psychometric Theory* (McGraw-Hill, New York).
- Obstfeld D (2005) Social networks, the Tertius lungens and orientation involvement in innovation. *Admin. Sci. Quart.* 50(1):100–130.
- Oreg S, Sverdluk N (2011) Ambivalence toward imposed change: The conflict between dispositional resistance to change and the orientation toward the change agent. *J. Appl. Psychol.* 96(2):337–349.
- Peckham S, Exworthy M (2003) *Primary Care in the UK: Policy, Organization and Management* (Palgrave Macmillan Basingstoke, New York).
- Pettigrew A (1973) *The Politics of Organizational Decision Making* (Tavistock Publications, London).
- Pettigrew AM, Woodman RW, Cameron KS (2001) Studying organizational change and development: Challenges for future research. *Acad. Management J.* 44(4):697–713.
- Pfeffer J, Salancik GR (1978) *The External Control of Organizations: A Resource Dependence Perspective* (Stanford University Press, Stanford, CA).
- Piderit SK (2000) Rethinking resistance and recognizing ambivalence: A multidimensional view of attitudes toward an organizational change. *Acad. Management Rev.* 25(4):783–794.
- Pratkanis AR (1989) The cognitive representation of attitudes. Pratkanis AR, Breckler SJ, Greenwald AG, eds. *Attitude Structure and Function* (Lawrence Erlbaum Associates, Hillsdale, NJ), 71–98.
- Raven BH (1992) A power-interaction model of interpersonal influence: French and Raven thirty years later. *J. Soc. Behav. Personality* 7(2):217–244.
- Rosenfeld P, Giacalone RA, Tedeschi JT (1984) Cognitive-dissonance and impression management explanations for effort justification. *Pers. Soc. Psychol. Bull.* 10(3):394–401.
- Roskosewoldsen DR, Fazio RH (1992) The accessibility of source likability as a determinant of persuasion. *Perspect. Soc. Psych. Bull.* 18(1):19–25.
- Salancik GR, Pfeffer J (1978) Social information-processing approach to job attitudes and task design. *Admin. Sci. Quart.* 23(2):224–253.
- Selznick P (1949) *TVA and the Grass Roots* (University of California Press, Berkeley).
- Stevenson WB, Greenberg D (2000) Agency and social networks: Strategies of action in a social structure of position, opposition, and opportunity. *Admin. Sci. Quart.* 45(4):651–678.
- Stevenson WB, Pearce JL, Porter LW (1985) The concept of coalition in organization theory and research. *Acad. Management Rev.* 10(2):256–268.
- Taylor R (1978) Marilyn's friends and Rita's customers—A study of party-selling as play and as work. *Sociol. Rev.* 26(3):573–611.
- Thomas R, Sargent LD, Hardy C (2011) Managing organizational change: Negotiating meaning and power-resistance relations. *Organ Sci.* 22(1):22–41.
- Tushman M, Romanelli E (1985) Organizational evolution: A metamorphosis model of convergence and reorientation. Cummings LL, Staw BM, eds. *Research in Organizational Behavior* (JAI Press, Greenwich, CT), 171–222.
- Van de Ven AH, Poole MS (1995) Explaining development and change in organizations. *Acad. Management Rev.* 20(3):510–540.
- Van de Ven AH, Angle HL, Poole MS (1989) *Research on the Management of Innovation* (Ballinger Publishing, Grand Rapids, MI).
- Westphal JD, Boivie S, Chng DHM (2006) The strategic impetus for social network ties: Reconstituting broken CEO friendship ties. *Strategic Management J.* 27(5):425–445.

Copyright 2013, by INFORMS, all rights reserved. Copyright of Management Science is the property of INFORMS: Institute for Operations Research and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.