

A R T I C L E S

Breakdowns in Implementing Models of Organization Change

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Executive Overview

Practice theories of implementing change are lagging behind process theories of organizational change and development. To address this gap, this paper examines common breakdowns in implementing four process models of organization change: teleology (planned change), life cycle (regulated change), dialectics (conflictive change), and evolution (competitive change). Change agents typically respond to these breakdowns by taking actions to correct people and organizational processes so they conform to their model of change. Although this strategy commands most of the attention in the literature, we argue that in many situations managers and scholars might do better if they reflected on and revised their mental model to fit the change journey that is unfolding in their organization.

Change is an ongoing and never-ending process of organizational life. Although we would like to explain, predict, and control the process, organizational change often does not unfold in expected ways (Burke, 2009): Breakdowns in our models of change occur when organizations do not change in a manner that is consistent with our conceptual model: Breakdowns are perceived discrepancies or gaps between the change process we observe in an organization and our mental model of how the change process should unfold. For example, a change agent¹ with a participative and consensual model of planned change would per-

ceive a breakdown when participants resist or do not follow the change plans. These breakdowns provide important occasions for change agents to take two kinds of strategies: *action* and *reflection*.

The action strategy focuses on correcting the people or processes in the organization that prevent the change model from unfolding as expected. In our example, the change agent might explain to participants the logic and reasons for the planned change. This strategy reflects a mainstream view in the literature that change management largely entails an action-oriented problem-solving approach (Burke, Lake, & Paine, 2009). As a problem solver, a change agent attempts to intervene in and control a change initiative by diagnosing and correcting difficulties that prevent the change process from unfolding as the change agent thinks it should. This strategy assumes that

exercise agency or influence on the change process by their actions and reflections.

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¹ The literature tends to refer to “change agents” as the managers or consultants who direct and manage a change initiative. Employees and other participants are viewed as the recipients of change and academic researchers as outside observers (By, Burnes, & Oswick, 2011). We take a broader view of “change agents” as including all of these groups, for they all

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the change agent's mental model is correct and that observed activities that deviate from this model are problems to be solved.

A second strategy, reflection, focuses on revising one's mental model to one that better fits the process of change unfolding in the organization. For example, given the resistance to the planned change, the change agent might adopt a dialectical model of change that promotes constructive conflict and debate among participants with opposing plans. The reflection strategy emphasizes how change agents make sense of and socially construct understandings of the "buzzing, blooming, and confusing" changes they experience in organizations (Weick, 2011). It centers on:

meaning-making with a view to changing mindsets rather than changing more concrete phenomena (e.g., behavior, procedures, or structures). The real-time social negotiation of meaning associated with [reflection] offers a significant challenge to the manageability of the process of change management insofar as it involves "coordinating" and "facilitating" change conversations in the moment and on a largely improvised and unscripted basis rather than engaging in more established forms of planned change. (By, Burns, & Oswick, 2011, p. 3)

Most of the existing research focuses on diagnosing and correcting breakdowns in implementing a model of change—the action strategy. Far less attention has been given to the reflection strategy of revising one's conceptual model to fit the people and organization undergoing change.

We argue that the effectiveness of the action strategy without reflection is limited and sometimes self-defeating. In many situations, change agents would do better if they paid more attention to reflecting on and revising their mental models to fit the change journey that is unfolding in their organization. Indeed, the action and reflection strategies are highly related, for they represent the core activities in a cyclical process of trial-and-error learning while implementing change. Actions provide the trials and experiences for obtaining feedback, and reflections on this feedback provide opportunities to reconceptualize future actions. Learning is short-circuited when either actions or reflections are missing.

We make three suggestions for undertaking action and reflection strategies. First, because

change processes in organizations tend to be complex, we encourage change agents to expand their repertoire of conceptual models for managing organizational change. Following Conant and Ashby's (1970) principle of requisite variety, we argue that change agents are more likely to be successful when their mental models of change match the complexity of the change processes unfolding in their organization. As we will discuss, having multiple mental models of change (i.e., teleology, life cycle, dialectical, and evolutionary process theories) permits us to adopt a contingency theory of implementation where one applies the model—and interactions among them—that best fits a given situation.

Second, we propose a framework for diagnosing weaknesses and typical breakdowns in models of change and suggest remedies that may address or mitigate these breakdowns. In doing so, we provide some guidelines for diagnosing and intervening in process models of organizational change. This diagnosis of breakdowns, of course, becomes more complex when multiple change models are held by multiple change agents who are involved in multiple organizational changes. We know very little about these interacting complexities; they represent an important direction for future research on implementing organization change.

Third, this diagnosis includes recognizing when process breakdowns may have gone beyond repair or when the remedies create bigger organizational problems than they solve. Instead of escalating in failing actions designed to remedy breakdowns in change processes, we propose that change agents reflect on and revise their conceptual model to better fit the change situation. In other words, instead of "swimming upstream," the skillful change agent reconceptualizes the situation in order to "go with the flow." Switching mental models to better fit changing circumstances, of course, implies that the change agent has a repertoire of several mental models (which brings us back to our first suggestion).

These three suggestions shift the research agenda on organizational change toward a contingency theory of implementation. This contingency theory includes observing an organization change initiative using multiple process models,

identifying breakdowns perceived in implementing a model of change in particular situations, and diagnosing how and when to respond to these breakdowns. The comparative merits of correcting the organization to fit a model of change or changing one's model to fit the organization becomes a strategic question in this research agenda.

Breakdowns in Models of Change

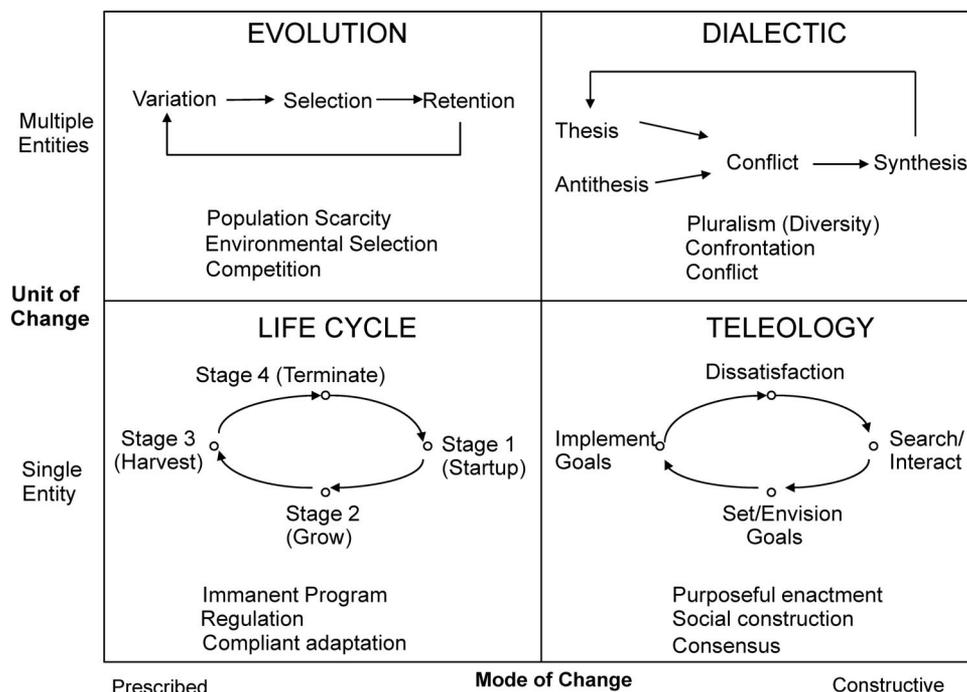
Organizational change is defined as a difference in form, quality, or state over time in an organizational entity (Van de Ven & Poole, 1995, p. 512). The entity may be an individual's job, a work group, an organizational subunit, the overall organization, or its relationships with other organizations. Change can be measured by observing the same entity over two or more points in time on a set of characteristics and then observing the differences over time in these characteristics. If the difference is noticeable, we can say that the organizational entity has changed. Much of the voluminous literature on organizational change focuses on two questions about this difference: (1) How and what produced it? and (2) How might it

be managed in sustainable and constructive directions over time?

Van de Ven and Poole (1995) addressed the first question by proposing a typology of four process models of organizational change and development, illustrated in Figure 1: teleology (planned change), life cycle (regulatory change), dialectics (conflictive change), and evolution (competitive change). As the figure indicates, these process models differ in terms of whether they apply to single or multiple organizational entities and whether the change process follows a prescribed sequence or is constructed (emerges) as the process unfolds. The cells in the figure illustrate how each theory views the process of development as unfolding in a fundamentally different progression of change events and being governed by a different generative mechanism or motor. Understanding these four process models of change, and interactions among them, represents a major step in developing a repertoire of models for managing change.

This paper focuses on the second question by examining the implementation breakdowns typi-

Figure 1
Process Models of Organization Change



Note: Arrows on lines represent likely sequences among events, not causation between events.
 Source: Van de Ven & Poole (1995).

Table 1
Breakdowns and Remedies in Process Models of Organizational Change

	Teleology (Planned Change)	Life Cycle (Regulated Change)	Dialectic (Conflictive Change)	Evolution (Competitive Change)
Process cycle	Dissatisfaction, search, goal setting, and implementation	Prescribed sequence of steps or stages of development	Confrontation, conflict, and synthesis between opposing interests	Variation, selection, and retention among competing units
Situations when model applies (generating mechanism)	Social construction of desired end state; goal consensus	Prefigured program regulated by nature, logic, or rules	Conflict between opposing forces	Competition for scarce resources
Typical breakdowns	<ul style="list-style-type: none"> • Lack of recognition • Decision biases • Groupthink • Lack of consensus 	<ul style="list-style-type: none"> • Resistance to change • Lack of compliance • Monitoring and control 	<ul style="list-style-type: none"> • Destructive conflict • Power imbalance • Irresolvable differences 	<ul style="list-style-type: none"> • Requisite variety • Lack of scarcity
Remedies	<ul style="list-style-type: none"> • Triggering attention • Critical thinking • Consensus building 	<ul style="list-style-type: none"> • Responding to complaints • Local adaptation • Internalizing mandates 	<ul style="list-style-type: none"> • Conflict management • Negotiation skills • Political savvy 	<ul style="list-style-type: none"> • Niche development • Marketing • Strategies for competitive advantage

cally experienced with each model and possible remedies for these breakdowns. Table 1 provides an overview of these breakdowns and remedies. Understanding the different breakdowns and remedies in implementing the four models of change provides a framework for diagnosing implementation processes, our second suggestion. After that, we address complexities of interacting change models held by different change agents involved in multiple change initiatives ongoing in organizations. These complexities deal with the relative merits of correcting breakdowns versus changing one's conceptual model, and emphasize the need for a contingency theory of implementing organizational change.

Teleological Process Theory (Planned Change)

A teleology or planned change model views development as a repetitive sequence of goal formulation, implementation, evaluation, and modification of an envisioned end state based on what was learned or intended by the people involved. This sequence emerges through purposeful social construction among individuals within the organizational entity undergoing change. Teleological processes of planned change break down because participants do not recognize the need for change, they make erroneous decisions, or they do not reach agreement on goals or actions (Burke, Lake, & Paine, 2009; Nutt & Wilson, 2010).

Models of planned change assume that people initiate efforts to change when their action thresholds are triggered by significant opportunities, problems, or threats. Teleological processes often fail because only a minority of participants recognize the need for change. According to March and Simon (1958), dissatisfaction with existing conditions stimulates people to search for improved conditions, and people stop searching when a satisfactory result is found. A satisfactory result is a function of a person's aspiration level, which is a product of his or her past successes and failures (Lant, 1992; Lewin, Dembo, Festinger, & Sears, 1944). When there is little difference between perceptions of current situations and aspiration levels, the need for change is hardly recognized (Greve, 1998). Cognitive psychologists have shown that when exposed over time to a set of stimuli that change very gradually, individuals do not perceive the gradual changes—they unconsciously adapt to the changing conditions (Helson, 1948, 1964; Hulin, 1991; Hulin & Judge, 2003).

Direct personal experiences with opportunities or problems are more likely to trigger individuals' action thresholds than are reports or exhortations about the need for change (Van de Ven, 1980, 1986). For example, site visits and face-to-face meetings with demanding customers, technical experts, or consultants increase the likelihood that action thresholds of organizational partici-

pants will be triggered and stimulate them to pay attention to changing environmental conditions or customer needs (e.g., von Hippel, 1978).

Teleological change processes also break down when there is a lack of consensus on plans or goals among organizational participants. Socialization activities provide a way of building consensus because teambuilding, training sessions, and social gatherings, for example, facilitate frequent interactions that in turn lead to shared understandings, common norms, and cooperative attitudes (e.g., Homans, 1950; Maloney, Shah, & Zellmer-Bruhn, 2010). Involvement in goal formulation also enhances consensus (Wooldridge & Floyd, 1990).

A teleological process may also fail due to faulty plans or goals because of biases in individual or group judgments—errors in critical thinking and decision making (Nutt, 2002). Studies of decision making have found that individuals systematically deviate from a rational ideal in making decisions, causal judgments, social inferences, and predictions (Bazerman, 1986; Cialdini, 2009). Human beings lack the capability and inclination to deal with complexity (Kahneman, Slovic, & Tversky, 1982). Common strategies for reducing cognitive biases include engaging other informants in focus groups or brainstorming processes to provide information and interpretations of the issue being considered (Delbecq, Van de Ven, & Gustafson, 1975; Eden & Ackermann, 2010; Halpern, 1996; Nutt & Wilson, 2010).

Finally, teleological processes may fail because of escalating commitments to failing courses of action (McNamara, Moon, & Bromiley, 2002; Ross & Staw, 1986; Staw, 1976, 1981; Staw, Barsade, & Koput, 1997). “Self-justification” is one of the major reasons for escalation of commitment. Individuals who are responsible for an initial decision tend to become more committed to a failing course of action than individuals not involved in the initial decision (Ross & Staw, 1986, p. 276). Studies have examined a number of ways to reduce escalating commitments to failing courses of action. One approach has different individuals make consecutive investment decisions in a project, thereby decreasing felt commitments of focal decision makers (Bazerman, Giuliano, & Appel-

man, 1984; McNamara et al., 2002; Staw et al., 1997).

Life Cycle Process Theory (Regulated Change)

A life cycle model depicts the process of change as progressing through a prescribed sequence of stages and activities over time. Activities in a life cycle model are prescribed and regulated by natural, logical, or institutional routines. In most organizational applications of a life cycle model, the rules prescribing the change process are based on routines learned in the past for managing recurrent changes in efficient and effective ways (Cohen & Sproull, 1996; Feldman & Pentland, 2003), or they may be externally induced (Rogers, 2003); that is, they come from sources outside of the organizational entity undergoing change. Life cycle theory is not simply a model of passive compliance to mandated change by an entity; it also considers how proactive individuals adapt to their environments and make use of rules to accomplish their purposes (Gibson, 1977; Norman, 1988).

In deviating from prescribed change routines, local adaptations are typically viewed as breakdowns by those who design and mandate a change routine. Prescriptions for change are perceived differently by “planners,” who design a change program, and “doers,” who implement it but do not participate in its development (Ford, Ford, & D’Amelio, 2008). As Pressman and Wildavsky’s (1973) classic study found, breakdowns happen when planners are separated from doers because “learning fails when events are caused and consequences are felt by different people” (Pressman & Wildavsky, 1973, p. 135). Consistent with the “not-invented-here” syndrome, people are more likely to implement and comply with changes that they can adapt to fit their local situations (e.g., Clagett, 1967; Katz & Allen, 1982; Lichtenthaler & Ernst, 2006). Cialdini (2009) synthesized an extensive number of psychological experiments indicating that people are more likely to comply with requests from others when a reason is provided for the request; reciprocity exists; an initial commitment is made; social proof exists that many similar others are complying; requests come from individuals they know and like; requests

come from a legitimate authority; or the opportunity is scarce, limited, or difficult to attain.

Rice and Rogers (1980) found that reinvention facilitates adopting and implementing change programs. Reinvention is a process of reverse engineering and adapting a change to fit a particular applied setting. It is fundamentally a learning process that is triggered by the inevitable setbacks and mistakes people encounter as they attempt to implement a change program. Reinvention requires some local autonomy to adapt mandated changes. Marcus and Weber (1989) showed that "autonomy," defined as customizing mandated safety guidelines, was necessary in order to implement new safety standards at 28 American nuclear power plants. They found that prior poor implementation records yielded "rule-bounded" approaches, defined as "compliance with the standard technical specifications" (p. 545), which produced a vicious cycle that perpetuated poor outcomes. Marcus and Weber (1989) also concluded that managers or external regulators should be aware of the possible consequences of blind acceptance of prescribed changes. Implementers who strictly obey the prescribed change may be complying in bad faith, which may not lead to the intended results.

Finally, Piderit (2000) and Ford et al. (2008) called into question the common assumptions of resistance to change. They noted that change managers tend to dichotomize individuals' responses into those who support or resist the proposed change and to view the latter as being disobedient. Piderit (2000) and Ford et al. (2008) discussed a number of reasons why employees resist a prescribed change, including constructive intentions to correct errors that may prevent implementation. The ambivalence employees feel toward an organizational change initiative does not necessarily represent opposition as disobedience; instead, it may reflect the complexity of most organizational changes as having both positive and negative characteristics.

Dialectic Process Theory (Conflictive Change)

Dialectical theories explain stability and change in terms of the relative balance of power between opposing entities. Stability is produced through

struggles and accommodations that maintain the status quo between oppositions. Change occurs when challengers gain sufficient power to confront and engage incumbents. Change is generated through the resolution of conflict between the current thesis (A) and an antithesis (Not-A), which results in a synthesis (Not Not-A). Conflict is the core generating mechanism of dialectical change. Dysfunctional methods of conflict resolution tend to impede dialectical change processes and may lead to undesirable win-lose outcomes.

To be a constructive force, conflict has to be resolved effectively. Studies at individual and group levels suggest that problem solving and open confrontation of conflicts are more likely to lead to expressions and debates of different opinions; this in turn facilitates the resolution of differences and conflicts (Jehn & Bendersky 2003; Peterson & Behfar, 2003). In addition, Behfar, Peterson, Mannix, and Trochim (2008) found that high-performing teams explicitly discuss reasons for decisions reached and assign work to members who have the relevant task expertise rather than using other common means such as volunteering, default, or convenience. Gelfand, Leslie, and Keller (2008) found that a collaborative conflict culture can foster adaptation to change, given that there is an emphasis on active listening to others' points of view and seeking the best solutions for all parties involved; in contrast, organizations with avoidant conflict cultures are likely to be less adaptive to change because norms against open discussion and the lack of information sharing can prevent effective solutions to disagreements, and, therefore, may impede conflictive change processes.

Studies of formal conflict management practices in organizations tend to examine three types of dispute resolution methods (Bendersky, 2003, 2007). The first method is "rights-based processes," which involve third parties determining the outcome of a dispute based on laws, contracts, or standards of behavior. Examples are arbitration, formal complaint investigations, and peer review panels. The second method involves third parties who intervene in disputes, but help the parties reach agreements that meet their mutual interests rather than determine if one party's rights have

been violated by the other. Examples are mediators, ombudspeople, facilitators, and coaches. The third type is “negotiation,” which covers all efforts by individual disputants to resolve conflicts themselves, without any third-party intervention. Bendersky (2007) found that joint use of all three generated greatly improved outcomes in terms of employees’ approaches to conflict management, their attitudes toward conflict at work, and their rate of success in resolving conflict.

Power is another concept that is central to a dialectical model of change. Conflict can be expressed when the opposing parties have sufficient power to confront each other and engage in struggle. Conflict tends to remain latent or to be squelched by dominant actors until challengers can mobilize sufficient power to confront opposing parties (Hargrave & Van de Ven, 2006). Studies of political strategies and tactics used by institutional entrepreneurs in social movements are relevant for understanding the politics of organizational change (Clemens, 1997; Davis, Morrill, Rao, & Soule, 2008; Garud, Jain, & Kumaraswamy, 2002; Lounsbury, Ventresca, & Hirsch, 2003; McAdam, McCarthy, & Zald, 1996; Rao, 1998; Rao, Monin, & Durand, 2003). Echoing Alinsky’s (1971) “rules for radicals,” Fligstein (1997), for example, cataloged a variety of tactics and social skills that institutional entrepreneurs need to affect institutional change.

Evolutionary Process Theory (Competitive Change)

Evolutionary change unfolds as a recurrent and probabilistic progression of variation, selection, and retention activities (Campbell, 1969). Variations—the creation of novel forms—are often viewed as emerging by blind or random chance. Selection occurs principally through competition among forms; customers or higher level decision makers select those forms that are best suited for the resource base of an environmental niche. Retention involves the forces and routines that perpetuate and maintain certain organizational forms (Aldrich & Ruef, 2006; Baum & McKelvey, 1999).

Initial applications of evolutionary theory adopted a Darwinian view of evolution at the orga-

nizational population level of analysis (e.g., Carroll & Hannan, 1989; Hannan & Freeman, 1977, 1989). Later, many organizational scholars shifted their level of analysis to the organization or units within it to apply an evolutionary theory of change that recognizes the roles of managerial choice and action. Burgelman (1991), Miner (1994), and Baum and Rao (2004) adopted a Lamarckian view of evolution, which argues that organizations learn, adapt, and acquire novel variations at different times throughout their life span. Burgelman (1991), for example, examined strategy making as an intraorganizational evolutionary process of variation, selection, and retention. He viewed variations as deriving from managers’ initiatives to compete for scarce resources, selection processes being exerted through corporate resource allocation mechanisms, and retention taking the form of corporate strategy that defines the areas in which the firm has learned it can operate successfully.

Evolutionary processes, both at the population and intraorganizational levels, are subject to two common types of breakdowns: (1) a small number of homogeneous variations and selection criteria and (2) lack of competition for scarce resources. An evolutionary model of change emphasizes the need for a heterogeneous pool of variations and competition for scarce resources (Baum & Rao, 2004; Campbell, 1969).

Variations provide the raw materials from which selection can be made. A greater number of diverse variations are more likely to produce innovations than a process that generates a small number of homogeneous variations (Weick, 1989). A lack of diverse variations may result from an organization’s imbalance between exploration (unprecedented) and exploitation (recurrent) activities. March (1991) pointed out that given the success of existing routines, organizations tend to be distracted from exploration because of the high probability of obtaining short-run rewards from exploitation. Some of the managerial practices of institutionalized experimentation discussed by Miner (1994) represent remedies to generate diverse variations by investing more resources in research and development, supporting innovation “champion” and “entrepreneurial” roles, and cre-

ating parallel projects in which several teams compete on the same general problem.

Miner (1994) also discussed approaches top management may use to engage selection processes, such as setting goals without methods to reach them, establishing broad values, and setting project screening and selection criteria. Finally, retention processes are influenced by the application of consistent controls, formalized routines, and organization culture and values. Illustrating Miner's managerial evolution model, O'Reilly, Harrell, and Tushman (2009) showed the role of decentralized structure, common culture and vision, and supportive leadership in promoting the variation-selection-retention process in the case of IBM's Emerging Business Opportunities project.

A related difficulty is selecting among variations when the performance or fitness of variations cannot be determined until after they are selected. Weick's (1989) remedy for this difficulty is the same as for increasing the diversity of variations: apply many diverse selection criteria in a consistent way to each variation. He emphasized that if criteria are altered each time a variation is selected, few variations will be rejected and little understanding will accumulate (Weick, 1989).

A key characteristic of variation is its "blindness" with respect to its ability to improve an organization's fitness (Campbell, 1969). When variations are not blind, evolutionary selection processes tend to be biased in directions that may not promote adaptation and fitness. One source for this lack of blindness is the existence of powerful "vicarious selectors" that lead decision makers to favor variations that are believed to produce good outcomes (Baum & Rao, 2004). Finally, evolutionary theory works only under conditions of competition for scarce resources; it breaks down when resources are munificent and competition is low (Baum & Rao, 2004). When resources are munificent and competition is low, both efficient and inefficient variations tend to survive and grow (Romanelli, 1999).

The four process models of change just discussed represent simplified attempts to understand and manage organization change. Juxtaposing these models provides insights for deciding which model of change is appropriate in specific situa-

tions and what kinds of breakdowns and remedies are likely to apply when implementing a change. Next, we propose several contingency theories for implementing organization change.

Contingency Propositions on Breakdowns and Remedies

Juxtaposing the four process models of change, we find that:

1. A teleological model of planned change applies when a group of participants agrees on and moves toward a shared organizational goal. The model breaks down when participants cannot reach consensus on a goal or when the conclusions reached are subject to individual and group biases—errors in recognition, critical thinking and decision making, escalating commitments to failing courses of action, and groupthink.
2. Dialectical processes of change apply when different organizational units conflict and confront one another on an issue. Dialectics fail due to dysfunctional methods of conflict resolution and power inequalities that limit or inhibit confrontations among opposing parties.
3. Regulated life cycle models are appropriate for managing many recurrent and predictable organizational changes in efficient and effective ways. They break down when the rules are wrongly designed and when people or units resist implementing the change mandates, resulting in sabotage of, or mere compliance with, mandates, rather than internalization of them.
4. Evolutionary processes of variation, selection, and retention apply when multiple units within or between organizations compete for scarce resources by developing different methods of products for a given market. Evolution breaks down when variations are homogeneous and when resources are munificent or competition is low.

When breakdowns occur they tend to trigger two kinds of remedial actions. Our propositions above focus on the action or problem-solving strategy of correcting the people or processes in the organization that prevent the change model

from running as expected. Our discussion indicates that an extensive and diverse body of research (often not associated with organization change) is useful for diagnosing and correcting breakdowns with each of the four models of change. However, the effectiveness of our propositions is limited because many observed processes of organizational change are more complex than any one of the four models can adequately address.

Thus, a second strategy for dealing with breakdowns is to revise the mental model we have in our heads to one that better fits the process of change unfolding in the organization. This reflective strategy appears prudent only after reasonable attempts are made, but fail, to implement the first strategy. Thus we propose that change agents tend to be action oriented, and do not adopt the reflective strategy until they recognize that the breakdowns in implementing their model of change cannot be corrected or repaired. Hence, the greater the perceived breakdowns the more likely a change agent shifts from an action to reflection strategy.

Complexities of Interacting Models, Agents, and Changes

As we turn to consider breakdowns, we recognize that not all sources of breakdowns are the same. Some are triggered by multiple changes ongoing in organizations, others by multiple change agents with different models for the same changes, and others by temporal interactions among the change models themselves. We discuss each of these different sources of breakdowns and propose conditions that lead change agents to change their action or reflection strategies. We caution that these interacting complexities have received very little empirical research, and represent an important research direction for studying processes of change implementation.

Interdependent Organization Changes. Many change processes are embedded and nested in complex organizational systems. Fortunately, the vast majority of these changes are recurrent and follow routines prescribed by a life cycle (regulated) process model without much problem or attention. This permits change agents and researchers to focus on a vari-

ety of unprecedented changes ongoing in most organizational initiatives. In particular, we propose that the more interdependent and novel the organizational changes, the greater the perceived breakdowns, and the more likely change agents will shift from an action to a reflection strategy.

Van de Ven and Garud (1993) illustrated this proposition in a study of the development of the cochlear implant, which was shaped by change processes occurring in multiple organizational units and levels over time. A teleological process seemed to explain the course of development of the implant in the firm's R&D lab. At a higher organizational level the action of top managers in selecting and funding more than 250 competing innovation projects was consistent with an evolutionary model (as Miner, 1994, described). However, selection premises and timing of managerial interventions moved at a different pace than that of the development team.

At a certain point in its development, the biomedical product had to be approved by the Food and Drug Administration, which required a prescribed sequence of proposals, clinical trials, and regulatory reviews and approvals. This prescribed sequence, which embodied a life cycle motor, came into play later than the teleological and evolution motors, but it was judged important enough that the other units had to rearrange their efforts to meet the FDA's requirements. A dialectical model seemed to operate at the larger professional community of researchers and clinicians concerned with hearing health. Following its initial support for the firm's pioneering implant design, evidence mounted that led most researchers and clinicians to switch allegiance to a competing firm's design.

As this example suggests, studying or managing organization change with one theory of change is unlikely to provide an adequate explanation of observed processes unfolding in an organization. As Graetz and Smith noted (2005, p. 311), "One theoretical view can be misleading in understanding the subtleties and complexities of the actual changes that occur." Multiple models of change are needed, and a contingency theory is needed to determine when and where each model applies. An important direction for future research is to

examine contingencies (such as change novelty and interdependence) in diagnosing what strategies change agents adopt to handle multiple changes unfolding in different organizational units and levels, as the cochlear implant case illustrates.

Change Agents with Different Mental Models. In addition to multiple changes ongoing in an organization, another complication is that different change agents may adopt different conceptual models for the same changes. Because of individual differences, experiences, and role responsibilities, it is well known that change agents and participants have different interpretations and mental models of a given change process in which they all participate (Van de Ven, Polley, Garud, & Venkataraman, 1999). This variety of views provides opportunities to study how participants either triangulate and learn from their divergent perspectives or undermine and suppress the efforts of other change agents. As Huber and Lewis (2010) suggested, whether this cross-understanding of the mental models of other change agents leads to positive or negative outcomes depends on the motivations of the change agents. Specifically, the more a change agent is open to ideas and different perspectives on a change initiative, the more likely it is that the cross-understandings lead to positive learning outcomes.

Aubry and Lievre (2010) provided an exemplary study of divergent mental models that emerge during the change process. They examined two cases of polar expeditions where significant breakdowns in initial plans to undertake the expeditions occurred due to unforeseen environmental events. These events led expedition team members to suggest alternative models of change and ambidexterity in maneuvering several change processes concurrently and diachronically. In one case, a leader's inability to adapt to the changing situation resulted in the entire project being placed at risk. Fortunately, a team member made up for the leader's failure by introducing an alternative approach to continue with the expedition.

The study raises a key question: At what point should one switch to a different model of change? Aubry and Lievre (2010) focused on prerequisites for organizational learning to address this ques-

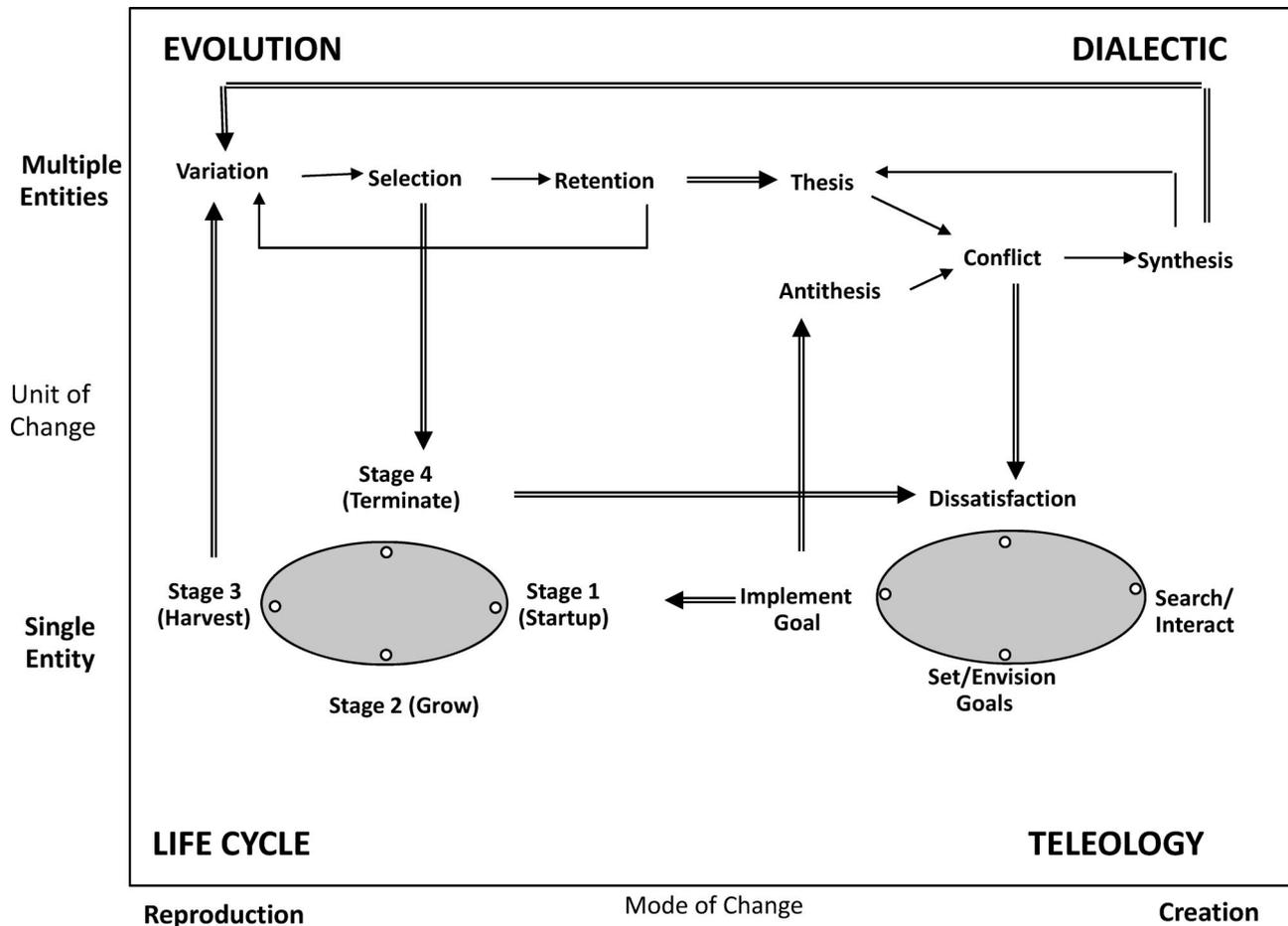
tion: perceptual awareness of a breakdown, openness for learning, and the need to experiment with different models of change. They stated:

The implementation of an organizational learning process [begins with a] perception by at least one actor of a discrepancy in a given situation that will lead to an interpretation in terms of errors; this discrepancy can be translated as a gap between intentions and achievements . . . or between the capacities of an actor and the situation. . . . [This] allows us to highlight . . . the pertinence of studying management situations as closely as possible to their unfolding order to grasp the contextual logic that underlies the choice of mode of action and the pertinence of its performance, and the need to deepen these perspectives by grasping the subjective perception of the actors in the situations. (Aubry & Lievre, 2010, p. 42)

Unprecedented changes typically unfold in ambiguous and uncertain ways. We propose that frequent reflective meetings during which change agents share and socially construct both cross-understandings (Huber & Lewis, 2010) and some shared understandings (Randolph-Seng & Norris, 2011) of their diverse mental models increase the likelihood of learning and maneuvering the change journey.

Relations Among Models. Many organizational changes are far more complex than can be explained by any one of our simplified models of change. To address this limitation, Van de Ven and Poole (1995) considered 16 applied models that emerged from interactions among two or more of the four process models. We propose that underlying these 16 models are three heuristics that may explain when it may be useful to adopt a reflective strategy of shifting our mental models to fit the temporal contexts of change processes unfolding in an organization. First, each of the change process models is limited and incomplete; the weaknesses of one model are the strengths of another. Second, the usefulness of a model changes depending on the organization's life cycle stage (Beer & Walton, 1987). Third, managing ambiguous and unprecedented changes requires balancing opposing and often contradictory views of change. Our discussion concludes with an examination of these three proposed heuristics. Figure 2 illustrates these heuristics.

Figure 2
Temporal Relations Among Change Models



Note: Arrows on lines represent likely sequences among events, not causation between events.

Model Strengths and Weaknesses. Each of the four models emphasizes a particular set of managerial challenges in managing organizational change that can sometimes be addressed and remedied by adopting a different conceptual model of change. For example:

- If participants are unable or unwilling to reach consensus on a goal after several attempts to do so, a change agent may do more harm than good by exhorting disagreeing parties to “get on board because the train is leaving the station.” While this disagreement and conflict represents a breakdown in implementing a planned change (teleological) model, it serves as the generating mechanism for implementing a dialectical model of change.
- The frequently observed breakdown of resistance to mandated changes in a life cycle model

can often be remedied by involving the people affected in a teleological model of planning and goal setting. People, after all, prefer to implement plans of their own making rather than those mandated by some external party.

- Breakdowns in one model can also contribute to breakdowns in other models of change. For example, a breakdown in the dialectical model of squelching opposing viewpoints and proposals may contribute to breakdowns of groupthink in a teleological model and may contribute to a lack of heterogeneous variations for competitive selection with an evolutionary model.

As these examples suggest, the incompleteness of one model of organizational change may be remedied by adopting the perspectives of other models. As Figure 2 illustrates, each model has

one or more components whose values are determined exogenous to the model.

- The goal developed by a group with a teleological model may explain the emergence of the antithesis in the dialectical model; at the same time, the dialectical model enriches the teleological model by calling attention to the context in which planned change processes emerge.
- The source of variation in an evolutionary model is often the synthesis produced through dialectical struggle. A dialectical model also makes salient that even when a particular change plan has been selected for implementation in a teleological model, competing plans nevertheless lurk, suppressed yet available for mobilizing challengers of the status quo when these challengers gain sufficient power.

Model Temporal Relations. Interactions among the change models and their associated breakdowns also have important temporal relationships. As Hargrave and Van de Ven (2006) discussed, each model of change represents a possible link in understanding the temporal stages or cycles of organizational change. The four models of change can be viewed not only as alternative perspectives on a single phenomenon but also as different temporal phases in the journey of change in a complex organization. This change journey may unfold over phases of *emergence*, *development*, *implementation*, and *diffusion*, with different models of change playing a dominant role in each period.

In the initial *emergence phase*, which corresponds to the teleological or planned change model, actors interact and socially construct a new envisioned state, but they may not yet have mobilized plans and resources sufficiently to frame the issues and introduce their proposals for change in the more macro level of the organizational field. As a result, organizational action may be driven by technical considerations, and there is little conflict. This is particularly true when plans for change are novel or frame-breaking and other organizational units and actors are unable to make sense of them. During this stage of organizational change, opponents have not yet organized to mobilize a dialectical response.

Dialectical processes become more evident during the *developmental phase* of organizational change when networks of organizational actors and units emerge to introduce competing alternative approaches or designs that entail different proposals for change. However, the efficacy of competing alternatives remains moderately ambiguous and questionable. Competing units, each pursuing its own objectives, engage in political behavior to gain support and legitimacy from key constituencies for their own frames and proposals on the issues of organizational change in question. During this period, a pluralistic field emerges as networks of partisan groups mobilize political campaigns to advance their cause and discredit competing alternatives. In this phase, the signature of organizational change is no longer actors' identities and goals but rather the dialectical dynamics of conflict, power, and politics among multiple units. During this stage thesis and antithesis have collided to produce a synthesis.

Finally, the life cycle and evolution models may best explain *implementation* within units and *diffusion* across multiple units once a particular organizational form has won the political campaign and becomes legitimated and ratified. Thereafter, dialectical processes subside as the new organizational arrangements supporting the winning design are adopted and diffused, while the proposals and designs of the losing groups are silenced and submerged (at least temporarily) until the next opportunity arises to mobilize a campaign to replace or change the dominant organizational arrangements. The synthesis produced during the developmental phase has become a new thesis. Its antithesis lies dormant, not yet mobilized or theorized.

This conceptualization of organizational change as a progression through the models of change is consistent with a punctuated equilibrium view of change (Anderson & Tushman, 1990; Tushman & Romanelli, 1985) or an episodic view of change (Quinn and Weick, 1999). Based on the idea that once institutionalized, beliefs and practices become taken for granted and experienced as objective, enduring, and reliably reproduced (Berger & Luckmann, 1967; Tolbert & Zucker, 1996), we propose that cycles of organizational change may

consist of long periods of evolution in the incremental unfolding of regulated forms of organizational changes punctuated by relatively brief but revolutionary periods of teleological and dialectical processes of change. These revolutions may occur when the legitimacy or performance of an organizational arrangement is shattered due to a multiplicity of meanings, internal contradictions, and/or inconsistency with other institutions (Clemens & Cook, 1999; Sewell, 1992).

Viewing organizational change as being bracketed by discontinuous periods of teleology and dialectics clarifies that even during incremental and convergent periods of change, conflict is always latent, and the process of organizational change cycles endlessly between periods of life cycle and evolutionary convergence and teleological and dialectical divergence. New organizational forms emerging from divergence episodes are both the synthesis of an existing dialectic and the (soon to be challenged) thesis of a new dialectic.

Balancing Tensions and Oppositions. Tensions and oppositions are inevitable and play a central role in organization change. Seo, Putnam, and Bartunek (2004) and Farjoun (2010) discussed a number of these tensions, including whether a change initiative is triggered by internal or external forces, driven from the top down or the bottom up, open or closed to stakeholder participation, targeted at individuals and groups or organization-wide, and takes a negative or a positive focus. While these dualities do not necessarily represent mutually exclusive contradictions, they do make salient a central ethical question: Who and what are privileged and ignored or subjugated during the process?

This question is equally relevant to assessing the theories we use to manage and study organization change. Teleology celebrates freedom of choice in constructing an envisioned future, but this privilege is often limited to top managers in top-down and closed processes of planned change, which subjugates other participants to implementing their mandates in a life cycle model of regulated change. Dialectics celebrate an open, bottom-up approach to engaging in conflict among

groups with opposing teleologies but subjugates and ignores the groups without sufficient power to confront opposing groups. Evolutionary theory celebrates open competition and “blind” market selection among multiple units, but tends to ignore the planned and regulated changes that enable individuals to compete in the market. And life cycle models tend to celebrate institutionalism (i.e., the rules of the game that make life predictable) and deny individualism (i.e., individual freedom, creativity, and self-governance).

The point is that every model of change creates its own tensions; it favors some values and overlooks others. As Seo et al. stated (2004, p. 101), “These tensions reflect the choice points that people make, either implicitly or explicitly, as they initiate and/or implement a change program. More importantly, this . . . emphasizes the importance of acknowledging and valuing . . . tensions rather than (perhaps implicitly) assuming that change efforts should privilege one pole.”

Given the aforementioned complexities of organizational change, change agents may create bigger organizational problems by sticking with their mental model of change and focusing on correcting the breakdowns. In such “iatrogenic” situations, “the decision maker should thoroughly examine all the potential system effects, and perhaps refrain from action” (Boal & Meckler, 2010, p. 333). Instead of “swimming upstream,” the skillful change agent reflects on the situation and revises his or her mental model in order to “go with the flow.” This requires that change agents expand their repertoire of conceptual models for managing organizational change, and have a contingency theory for knowing what models to use in different circumstances. Having multiple mental models of change (i.e., teleology, life cycle, dialectical, and evolutionary process theories) permits us to apply the model(s)—and interactions among them—that fits a given situation.

Concluding Discussion

Observed processes of organization change seldom unfold as a theory in use suggests they should. Breakdowns may be due to difficulties in implementing a model of change that is appropriate for the situation and/or for different situa-

tions where the change model no longer applies. Diagnosing the breakdowns and knowing what strategy to follow in directing organization change remains an art. Three contributions of this paper make this art more accessible and researchable.

First, a process model of change is a strategic choice, and making this choice implies knowledge of alternative models from which to choose. We reviewed Van de Ven and Poole's (1995) four process models of organization change and development and proposed that each model applies in the different situations outlined in Table 1. Other scholars have proposed useful variations of these four basic process models (Huy, 2001; Meyer, Goes, & Brooks, 1993; Weick & Quinn, 1999). The important point of these models is that they encourage managers and scholars to expand their repertoire of models for managing organizational change. This enables us to think beyond a single change model—such as the dominant model of planned change (Cummings & Worley, 2008)—and to propose a contingency theory of organization change processes.

“A way of seeing is a way of not seeing” (Poggie, 1965, p. 284). Managing and researching organizational change can become more strategic and less myopic by increasing one's repertoire of alternative models of change. Any single mental model provides only a partial account of complex processes. Juxtaposing several different models provides insights for deciding which model of change is appropriate in different situations and what kinds of breakdowns and remedies are likely to apply when implementing a change. Specifically, we introduced a number of contingency theory propositions for implementing each of the four models of organization change.

We argued that when breakdowns occur, they tend to trigger two kinds of strategies: action and reflection. Typically, the first strategy is to take actions intended to correct the people or processes in the organization that prevent the change model from running as expected. An extensive and diverse body of research literature (often not associated with organization change) can be applied in fruitful and imaginative ways to diagnose and correct breakdowns with each of the four models of change.

A second strategy for dealing with breakdowns is to reflect on and revise the model to one that better fits the process of change unfolding in the organization. This strategy represents the scientific method of testing and rejecting a theory if data do not support it and then revising or adapting a theory that fits the observed data. This second strategy appears prudent only after reasonable attempts are made but fail to implement the first strategy.

Our discussion implies that an important future research agenda is to shift our research on organizational change toward a contingency theory of implementation. This contingency theory includes determining when and where each change model—and interactions of multiple models—applies, identifying breakdowns perceived in implementing a model of change in particular situations, and diagnosing how and when to respond to these breakdowns. To develop this contingency theory, a number of research directions are needed.

First, we need to empirically test propositions that examine different situations when teleology, dialectical, evolutionary, and life cycle models—and their interactions—reflect the change processes unfolding in an organization. For example, we suggested that a dialectical process of change fails when power inequalities limit or inhibit confrontation among opposing parties. Although this is generally accepted in theory, we lack empirical studies testing such propositions.

Second, we need studies to better understand the interacting complexities of change processes. To date, studies tend to examine a single model to reflect a particular organizational change process. We argue that multiple models are needed to address complexities of having multiple changes ongoing in an organization, multiple change agents with different mental models of any given change, and multiple interactions between change models over time. This requires research on the interdependencies and interactions among various models, agents, and changes. For example, each model emphasizes a particular set of managerial challenges in managing organizational change that can sometimes be remedied by adopting a different model. It is important to study conditions or situations when change agents shift their

conceptual model of change to the one that reflects the change processes ongoing in their organization.

Finally, we need research that examines the learning cycle of acting to correct an organization to fit one's model of change, and reflecting on how one's model might be revised to better fit the processes unfolding in the organization. A central challenge in studying and managing processes of change in complex organizations is achieving balance between implementation actions and feedback reflections on four generative motors of change: consensus, conflict, competition, and regulation. This is not to suggest that change agents can control or that researchers can predict these relations. They can, however, engage in a process of trial-and-error learning by engaging in a balanced and repetitive cycle of actions to implement their models of change and reflections on revising their social constructions of organization change.

References

- Aldrich, H. E., & Ruef, M. (2006). *Organizations evolving*, 2nd ed. Thousand Oaks, CA: Sage.
- Alinsky, S. (1971). *Rules for radicals*. New York: Random House.
- Anderson, P., & Tushman, M. L. (1990). Technological discontinuities and dominant designs: A cyclical model of technological change. *Administrative Science Quarterly*, 35, 604–633.
- Aubry, M., & Lievre, P. (2010). Ambidexterity as a competence for project leaders: A case study from two polar expeditions. *Project Management Journal*, 41(3), 32–44.
- Baum, J. A. C., & McKelvey, B. (Eds.). (1999). *Variations in organization science: In honor of Donald T. Campbell*. Thousand Oaks, CA: Sage.
- Baum, J. A. C., & Rao, H. (2004). Evolutionary dynamics of organizational populations and communities. In M. S. Poole & A. H. Van de Ven (Eds.), *Handbook of organizational change and innovation* (pp. 212–257). New York: Oxford University Press.
- Bazerman, M. H. (1986). Biases. In B. M. Staw (Ed.), *Psychological dimensions of organizational behavior*, 2nd ed. (pp. 199–223). Englewood Cliffs, NJ: Prentice Hall.
- Bazerman, M., Giuliano, T., & Appelman, A. (1984). Escalation of commitment in individual and group decision making. *Organizational Behavior and Human Performance*, 33(2), 141–152.
- Beer, M., & Walton, A. E. (1987). Organization change and development. *Annual Review of Psychology*, 38, 339–367.
- Behfar, K. J., Peterson, R. S., Mannix E. A., & Trochim, M. K. (2008). The critical role of conflict resolution in teams: A close look at the links between conflict type, conflict management strategies, and team outcomes. *Journal of Applied Psychology*, 93(1), 170–188.
- Bendersky, C. (2003). Organizational dispute resolution systems: A complementarities model. *Academy of Management Review*, 28, 643–656.
- Bendersky, C. (2007). Complementarities in organizational dispute resolution systems. *Industrial and Labor Relations Review*, 60, 204–224.
- Berger, P. L., & Luckmann, T. (1967). *The social construction of reality*. Garden City, NY: Doubleday.
- Boal, K., & Meckler, M. (2010). Decision errors of the 4th, 5th, and 6th kind. In P. C. Nutt & D. C. Wilson (Eds.), *Handbook of decision making* (pp. 327–348). West Sussex, UK: John Wiley & Sons Ltd.
- Burgelman, R. A. (1991). Interorganizational ecology of strategy making and organizational adaptation: Theory and field research. *Organization Science*, 2(3), 239–262.
- Burke, W. W. (2009). Understanding organizations: The process of diagnosis. In W. W. Burke, D. G. Lake, & J. W. Paine (Eds.), *Organization change: A comprehensive reader* (pp. 259–272). San Francisco: John Wiley & Sons, Inc.
- Burke, W. W., Lake, D. G., & Paine, J. W. (Eds.). (2009). *Organization change: A comprehensive reader*. San Francisco: Jossey-Bass.
- By, R. T., Burnes, B., & Oswick, C. (2011). Change management: The road ahead. *Journal of Change Management*, 11(1), 1–6.
- Campbell, D. T. (1969). Variation and selective retention in socio-cultural evolution. *General Systems*, 16, 69–85.
- Carroll, G. R., & Hannan, M. T. (1989). Density delay in the evolution of organizational populations: A model and five empirical tests. *Administrative Science Quarterly*, 34, 411–430.
- Cialdini, R. B. (2009). *Influence: Science and practice*, 5th ed. New York: Quill, Prentice Hall.
- Clagett, R. P. (1967). *Receptivity to innovation: Overcoming N.I.H.* (Master's Thesis). Cambridge, MA: MIT Press.
- Clemens, E. S. (1997). *The people's lobby: Organizational innovation and the rise of interest group politics in the United States, 1890–1925*. Chicago: University of Chicago Press.
- Clemens, E. S., & Cook, J. M. (1999). Politics and institutionalism: Explaining durability and change. *Annual Review of Sociology*, 25, 441–466.
- Cohen, M. D., & Sproull, L. S. (Eds.). (1996). *Organizational learning*. Thousand Oaks, CA: Sage.
- Conant, R. C., & Ashby, W. R. (1970). Every good regulator of a system must be a model of that system. *International Journal of Systems Science*, 1, 89–97.
- Cummings, T. G., & Worley, C. G. (2008). *Organization development and change*, 9th ed. Cincinnati, OH: South-Western College Publishing.
- Davis, G. F., Morrill, C., Rao, H., & Soule, S. A. (2008). Introduction: Social movements in organizations and markets. *Administrative Science Quarterly*, 53, 299–304.
- Delbecq, A., Van de Ven, A., & Gustafson, D. (1975). *Group techniques for problem solving and program planning*. Reading, MA: Addison-Wesley.
- Eden, C., & Ackermann, F. (2010). Decision making in

- groups. In P. C. Nutt & D. C. Wilson, (Eds.), *Handbook of decision making* (pp. 231–272). West Sussex, UK: John Wiley & Sons Ltd.
- Farjoun, M. (2010). Beyond dualism: Stability and change as a duality. *Academy of Management Review*, 35(2), 202–225.
- Feldman, M. S., & Pentland, B. T. (2003). Re-conceptualizing routines as a source of flexibility and change. *Administrative Science Quarterly*, 48, 94–118.
- Fligstein, N. (1997). Social skills and institutional theory. *American Behavioral Scientist*, 40, 397–405.
- Ford, J. D., Ford, L. W., & D'Amelio, A. (2008). Resistance to change: The rest of the story. *Academy of Management Review*, 33(2), 362–377.
- Garud, R., Jain, S., & Kumaraswamy, A. (2002). Institutional entrepreneurship in the sponsorship of common technological standards: The case of Sun Microsystems and Java. *Academy of Management Journal*, 45, 196–214.
- Gelfand, M. J., Leslie, L., & Keller, K. (2008). On the etiology of organizational conflict cultures. *Research in Organizational Behavior*, 28, 137–166.
- Gibson, J. J. (1977). The theory of affordances. In R. Shaw & J. Bransford (Eds.), *Perceiving, acting and knowing*. Hillsdale, NJ: Erlbaum.
- Graetz, F., & Smith, A. (2005). Organizing forms in change management: The role of structures, processes and boundaries in a longitudinal case analysis. *Journal of Change Management*, 5(3), 311–328.
- Greve, H. R. (1998). Performance, aspirations, and risky organizational change. *Administrative Science Quarterly*, 43, 58–86.
- Halpern, D. F. (1996). *Thought and knowledge: An introduction to critical thinking*, 3rd ed. Mahwah, NJ: Lawrence Erlbaum.
- Hannan, M. T., & Freeman, J. (1977). The population ecology of organizations. *American Journal of Sociology*, 82, 929–964.
- Hannan, M. T., & Freeman, J. (1989). *Organizational ecology*. Cambridge, MA: Harvard University Press.
- Hargrave, T. J., & Van de Ven, A. H. (2006). A collective action model of institutional innovation. *Academy of Management Review*, 31(4), 864–888.
- Helson, H. (1948). Adaptation-level as a basis for a quantitative theory of frames of reference. *Psychological Review*, 55, 294–313.
- Helson, H. (1964). Current trends and issues in adaptation-level theory. *American Psychologist*, 19, 23–68.
- Homans, G. C. (1950). *The human group*. New York: Harcourt, Brace and Company.
- Huber, G. P., & Lewis, K. (2010). Cross-understanding: Implications for group cognition and performance. *Academy of Management Review*, 35(1), 6–26.
- Hulin, C. L. (1991). Adaptation, persistence, and commitment in organizations. In M. D. Dunnette & L. M. Hugh (Eds.), *Handbook of industrial and organizational psychology* (2nd ed., Vol. 2, pp. 445–505). Palo Alto, CA: Consulting Psychologists Press.
- Hulin, C. L., & Judge, T. A. (2003). Job attitudes. In W. C. Borman & D. R. Ilgen (Eds.), *Handbook of psychology: Industrial and organizational psychology* (Vol. 12, pp. 255–276). New York: Wiley.
- Huy, Q. N. (2001). Time, temporal capability, and planned change. *Academy of Management Review*, 26(4), 601–623.
- Jehn, K., & Bendersky, C. (2003). Intragroup conflict in organizations: A contingency perspective on the conflict-outcome relationship. *Research in Organizational Behavior*, 25, 187–242.
- Kahneman, D., Slovic, P., & Tversky, A. (1982). *Judgment under uncertainty: Heuristics and biases*. Cambridge, UK: Cambridge University Press.
- Katz, R., & Allen, T. J. (1982). Investigating the not-invented-here (NIH) syndrome: A look at performance, tenure and communication patterns of 50 R&D project groups. *R&D Management*, 12, 7–19.
- Lant, T. K. (1992). Aspiration level adaptation. *Management Science*, 38, 623–644.
- Lewin, K., Dembo, T., Festinger, L., & Sears, P. (1944). Level of aspiration. In J. M. Hunt (Ed.), *Personality and the behavior disorders* (Vol. 1, pp.333–378). New York: Ronald Press.
- Lichtenthaler, U., & Ernst, H. (2006). Attitudes to externally organising knowledge management tasks. *R&D Management*, 36, 367–386.
- Lounsbury, M., Ventresca, M., & Hirsch, P. M. (2003). Social movements, field frames and industry emergence: A cultural-political perspective on US recycling. *Socio-Economic Review*, 1, 71–104.
- Maloney, M., Shah, P., & Zellmer-Bruhn, M. (2010). *The lasting imprint of teams: Project teams and intra-organizational network formation* (Working Paper). Minneapolis, MN: University of Minnesota.
- March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, 2, 71–87.
- March, J. G., & Simon, H. (1958). *Organizations*. New York: Wiley.
- Marcus, A. A., & Weber, J. J. (1989). Externally-induced innovation. In A. Van de Ven, H. Angle, & M. S. Poole (Eds.), *Research on the management of innovation: The Minnesota Studies* (pp. 537–560). New York: Harper & Row.
- McAdam, D., McCarthy, J. D., & Zald, M. N. (1996). Introduction: Opportunities, mobilizing structures, and framing processes toward a synthetic, comparative perspective on social movements. In D. McAdam, J. D. McCarthy, & M. N. Zald (Eds.), *Comparative perspectives on social movements: Political opportunities, mobilizing structures and cultural framings* (pp. 1–20). New York: Cambridge University Press.
- McNamara, G., Moon, H., & Bromiley, P. (2002). Banking on commitment: Intended and unintended consequences of an organization's attempt to attenuate escalation of commitment. *Academy of Management Journal*, 45, 443–452.
- Meyer, A. D., Goes, J. B., & Brooks, G. R. (1993). Organizations reacting to hyperturbulence. In G. P. Huber & W. H. Glick (Eds.), *Organization change and redesign* (pp. 66–111). New York: Oxford University Press.
- Miner, A. S. (1994). Seeking adaptive advantage: Evolu-

- tionary theory and managerial action. In J. A. C. Baum & J. V. Singh (Eds.), *Evolutionary dynamics of organizations* (pp. 76–93). New York: Oxford.
- Norman, D. (1988). *The psychology of everyday things*. New York: Basic Books.
- Nutt, P. C. (2002). *Why decisions fail: Avoiding the blunders and traps that lead to debacles*. San Francisco, CA: Berrett-Koehler.
- Nutt, P. C., & Wilson, D. C. (Eds.). (2010). *Handbook of decision making*. West Sussex, UK: John Wiley & Sons Ltd.
- O'Reilly, C. A., Harreld, J. B., & Tushman, M. L. (2009). Organizational ambidexterity: IBM and emerging business opportunities. *California Management Review*, 51(4), 75–99.
- Peterson, R. S., & Behfar, K. J. (2003). The dynamic relationship between performance feedback, trust, and conflict in groups: A longitudinal study. *Organizational Behavior and Human Decision Processes*, 92(1–2), 102–112.
- Piderit, S. K. (2000). Rethinking resistance and recognizing ambivalence: A multidimensional view of attitudes toward an organizational change. *Academy of Management Review*, 25, (4), 783–794.
- Poggie, G. (1965). A main theme of contemporary sociological analysis: Its achievements and limitations. *British Journal of Sociology*, 16, 283–294.
- Pressman, S., & Wildavsky, H. (1973). *Implementation*. Berkeley, CA: University of California Press.
- Quinn, R. E., & Weick, K. E. (1999). Organizational change and development. *Annual Review of Psychology*, 50, 361–386.
- Randolph-Seng, B., & Norris, J. I. (2011). Dialogue: Cross-understandings in groups: How to cross over without dying. *Academy of Management Review*, 36(2), 420–422.
- Rao, H. (1998). Caveat emptor: The construction of non-profit consumer watchdog organizations. *American Journal of Sociology*, 103(4), 912–961.
- Rao, H., Monin, P., & Durand, R. (2003). Institutional change in Toque Ville: Nouvelle cuisine as an identity movement in French gastronomy. *Annual Journal of Sociology*, 108, 795–843.
- Rice, R., & Rogers, E. (1980). Reinvention in the innovation process. *Knowledge: Creation, Diffusion and Utilization*, 1(4), 499–514.
- Rogers, E. (2003). *Diffusion of innovations*, 5th ed. New York: Free Press.
- Romanelli, E. (1999). Blind (but not unconditioned) variation: Problems of copying in sociocultural evolution. In J. A. C. Baum & B. McKelvey (Eds.), *Variations in organization science: In honor of Donald T. Campbell* (pp. 79–91). Thousand Oaks, CA: Sage.
- Ross, J., & Staw, B. (1986). Expo 86: An escalation prototype. *Administrative Science Quarterly*, 31, 274–297.
- Seo, M., Putnam, L. L., & Bartunek, J. M. (2004). Dualities and tensions of planned organizational change. In M. S. Poole & A. H. Van de Ven (Eds.), *Handbook of organizational change and innovation* (pp. 73–107). New York: Oxford University Press.
- Sewell, W. H. (1992). A theory of structure: Duality, agency, and transformation. *American Journal of Sociology*, 98(1), 1–29.
- Staw, B. M. (1976). Knee-deep in the big muddy: A study of escalation commitment to a course of action. *Organization and Human Performance*, 16, 27–44.
- Staw, B. M. (1981). The escalation of commitment to a course of action. *Academy of Management Review*, 6, 577–587.
- Staw, B. M., Barsade, S. G., & Koput, K. W. (1997). Escalation at the credit window: A longitudinal study of bank executives' recognition and write-off of problem loans. *Journal of Applied Psychology*, 82(1), 130–142.
- Tolbert, P. S., & Zucker, L. G. (1996). The institutionalization of institutional theory. In S. Clegg, C. Hardy & W. Nord (Eds.), *Handbook of Organizational Studies* (pp. 175–190). Thousand Oaks, CA: Sage.
- Tushman, M. L., & Romanelli, E. (1985). Organizational evolution: A metamorphosis model of convergence and reorientation. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior* (Vol. 7, pp. 171–222). Greenwich, CT: JAI Press.
- Van de Ven, A. H. (1980). Problem solving, planning, and innovation. Part 2. Test of the program planning model. *Human Relations*, 33, 757–779.
- Van de Ven, A. H. (1986). Central problems in the management of innovation. *Management Science*, 32(5), 590–607.
- Van de Ven, A. H., & Garud, R. (1993). Innovation and industry development: The case of cochlear implants. In R. Burgelman & R. Rosenbloom (Eds.), *Research on technological innovation, management, and policy* (pp. 1–46). Greenwich, CT: JAI Press.
- Van de Ven, A. H., Polley, D. E., Garud, R., & Venkataraman, S. (1999). *The innovation journey*. New York: Oxford University Press.
- Van de Ven, A. H., & Poole, M. S. (1995). Explaining development and change in organizations. *Academy of Management Review*, 20, 510–540.
- von Hippel, E. (1978). Successful industrial products from customer ideas. *Journal of Marketing*, January, 39–40.
- Weick, K. E. (1989). Theory construction as disciplined imagination. *Academy of Management Review*, 14(4), 516–531.
- Weick, K. E. (2011). Reflections: Change agents as change poetson reconnecting flux and hunches. *Journal of Change Management*, 11(1), 7–20.
- Weick, K. E., & Quinn, R. E. (1999). Organizational change and development. *Annual Review of Psychology*, 50, 361–386.
- Wooldridge, B., & Floyd, S. W. (1990). The strategy process, middle management involvement, and organizational performance. *Strategic Management Journal*, 11, 231–241.

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