Organizing For Resilience

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Studies of organizing in the face of adversity have been focused on the negative. This tendency to focus on failures, decline, and maladaptive or pathological cycles is revealed in images such as threat-rigidity, downward spirals, vicious cycles, and tipping points that dominate the organizational literature. This chapter is an effort to reverse that trend.

Scholars not only have focused on the negative, but also have portrayed these maladaptive processes as deterministic, assuming that organizations and their members under adversity naturally respond rigidly (Staw, Sandelands, & Dutton, 1981). When faced with a threat, decision makers reduce the complexity and variety of the information they seek and use to make decisions, consequently narrowing the range of possible behavioral responses.[1] Even though organizational systems may be inclined toward entropy, chaos, and the pathological (see Weick this volume), pathological cycles of behavior may not be so determined. How is it that some organizations and the individuals and units of which they are comprised experience adversity and successfully adjust and thrive amidst these conditions while others fail to do so? We propose in this chapter that *resilience* provides insight into *how* organizations continually achieve desirable outcomes amidst adversity, strain, and significant barriers to adaptation or development. This processual approach both complements and enriches existing theories that have focused either on *what organizations do* to manage and cope with potential threats, or *the*

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[1] The concept of threat-rigidity has acquired a pejorative connotation and has come to be linked in the literature primarily with negative consequences. Clearly this was not the intention of Staw, Sandelands, and Dutton (1981) who argued that a threat-rigidity effect might be functional and need not be maladaptive.

characteristics that seem to distinguish organizations that survive from those that fail (e.g.,

Miller, 1993).

In this chapter we briefly examine the roots, the mechanisms, and the future of the study

of resilience as an emerging integrative concept for understanding how organizations, their units,

and their members successfully adapt in the face of adversity. The bottom line message is that

while resilience is often assumed to be remarkable or special, this conception is wrong or at least

misleading. Rather than being rare and extraordinary, recurring themes spanning multiple

literatures and levels of analysis suggest that resilience emerges from relatively ordinary adaptive

processes that promote competence, restore efficacy, and encourage growth, as well as the

structures and practices that bring about these processes. These may be ordinary processes but

they result from a set of distinct dynamics that do not readily occur in all individuals, groups, or

organizations. Dynamics that create or retain resources (cognitive, emotional, relational, or

structural) in a form sufficiently flexible, storable, convertible, and malleable give rise to

resilience and allow organizations, their units and members to avert maladaptive tendencies and

positively cope with the unexpected. We begin by defining resilience and argue that it offers both

a new way of seeing and a more accurate rendering of the world that are lacking in current

theory. Next we synthesize and thematically integrate diverse streams of literature on resilience

at the individual, group, and organization levels. We then offer an example of how these themes

can be fruitfully applied to complicate the threat-rigidity perspective (Staw, et al., 1981), and

conclude with directions for future research.

WHAT IS RESILIENCE?

Resilience refers to *the maintenance of positive adjustment under challenging conditions*.

Resilience is generally *inferred* from judgments about two elements (Masten & Reed, 2002)

implicit in the above definition. To ascertain resilience requires both a judgment that an entity is "doing OK" or "better than OK" with respect to a certain set of expectations for behavior, as well as a judgment that an entity has faced extenuating circumstances that posed a threat to good outcomes (Masten & Reed, 2002: 75).

Although this definition of resilience increasingly is being used across disciplines, discrepancies in what resilience means and how it is operationally defined both within and among fields still exist. For example, current conceptions in psychology emphasize resilience as a dynamic process, but this hasn't always been the case. Researchers have defined resilience as a personal characteristic of the individual or as a set of traits encompassing general sturdiness and resourcefulness and flexible functioning in the face of challenges (Luthar, Cicchetti, & Becker, 2000). As the number of studies of resilience have grown so too has agreement that it is critical to distinguish between *resiliency* as a personality trait (derived from ego-resiliency) and *resilience* as a process (see Masten, 1994). As Luthar and colleagues note, for example, (2000: 546), scientifically representing resilience as a personal attribute is risky because it paves the way for perceptions that some individuals simply do not 'have what it takes' to overcome adversity, curtails our understanding of the underlying processes, and may even repress possible interventions.

In organization theory, resilience (sometimes resiliency) often has been used to refer to a characteristic or capacity of individuals or organizations, or more specifically (a) the ability to absorb strain and preserve (or improve) functioning despite the presence of adversity (both internal adversity—such as rapid change, lousy leadership, performance and production pressures—and external adversity--such as increasing competition and demands from stakeholders), or (b) an ability to recover or bounce back from untoward events. The image of

resilience that comes to mind (using a metaphor from materials science) is a kind of super material that can absorb strain and still maintain its shape (Porac, 2002). For example, Wanberg and Banas (2000) studied the extent to which differences in individual resilience predicted openness to large-scale organizational change, measuring resilience as a composite of self-esteem, optimism, and perceived control. Meyer (1982) studied how hospitals adapted to an unexpected doctor's strike and used the term *resiliency* (p. 520) to refer to an organization's ability to absorb a discrete environmental jolt and restore prior order. Wildavsky's (1988: 77) view is similar: resilience is the "capacity to cope with unanticipated dangers after they have become manifest, learning to bounce back."

In contrast to the image of resilience as "super material," the image of resilience as "development" is found in other work in psychology, particularly in the literatures on child and family development, where resilience is defined as the capacity for adaptability, positive functioning, or competence following chronic stress or prolonged trauma. Resilience from a developmental perspective does not merely emerge in response to specific interruptions or jolts, but rather develops over time from continually handling risks, stresses, and strains. Positively adjusting in the face of challenging conditions is thought to add both to the strength of the current entity and also to the strength of the future entity in that resilience is the continuing ability to use internal and external resources successfully to resolve issues. This occurs as a consequence of "a hierarchical integration of behavioral systems whereby earlier structures are incorporated into later structures in increasingly complex forms" (Egeland, Carlson, & Sroufe, 1993: 518). What this means is that early experience shapes later experience such that the way in which an entity (i.e., organization, unit, individual) interprets and responds to new challenges depends on attitudes, expectations, feelings, and response possibilities derived from a history of prior

experience (e.g., adaptation). This isn't to say that resilience is fixed or that competence in one period wholly predicts later competence in a linear deterministic way (i.e., that once competent always competent). Resilience is relative, emerging and changing in transaction with specific circumstances and challenges: resilience demonstrated in one situation may not be sustained over time or transferred to other circumstances or challenges (Staudinger, Marsiske, & Baltes, 1993). But competence at one period *is* thought to make an individual, unit, or organization more broadly adapted to the environment and prepared for competence in the next period (Egeland et al, 1993; Wildavsky, 1988). An entity not only survives/thrives by positively adjusting to current adversity, but also, in the process of responding, strengthens its capabilities to make future adjustments.

A developmental perspective implies the presence of latent resources that can be activated, combined, and recombined in new situations as challenges arise. Although it has not been well elaborated in organization theory, viewing resilience as *adaptability* is gaining currency in work by Wildavsky (1988: 120), Sitkin (1992), Levinthal and March (1981, 1993), Teece, Pisano, and Shuen (1997), Weick, Sutcliffe, and Obstfeld (1999), and Eisenhardt and Martin (2000). Wildavsky (1988: 70) argues, for example, that to be resilient is to be vitally prepared for adversity which requires "improvement in overall capability, i.e., a generalized capacity to investigate, to learn, and to act, without knowing in advance what one will be called to act upon."

The beauty of a developmental perspective is that it doesn't over promise. It doesn't imply continual perfection or constant invulnerability—images that come to mind when thinking of resilience as an extraordinary trait or characteristic, and qualities that individuals, groups, or organizations are bound to violate at some time or another. Rather, a developmental perspective

recognizes both the possibility of fallibility and the probability of successful coping. In the context of adversity, individuals and organizations that forge more successful adaptations develop coping skills from which new capabilities arise and extant capabilities are refined, deepened, and strengthened. Thus the developmental perspective captures a component of resilience that is often neglected in its application in organization theory—resilience is the capacity to rebound from adversity strengthened and more resourceful. This is why it is at the heart of positive organizing.

WHY STUDY RESILIENCE?

Understanding the dynamics of resilience has assumed greater urgency and normative currency in the face of increasing terrorism, threat of war, recession and a host of other recent socio-political, technological and economic trends. But there are theoretical reasons why researchers should pay more attention to resilience. First, we began this chapter by noting that current theory suggests that impending threats or crises *invariably* lead to cognitive narrowing (i.e., a restriction in information processing) as well as to a constriction of control, both which presumably lead to rigid responses (Staw et al, 1981). An implication is that individuals, groups, and organizations are only able to positively adjust if a threat is relatively small and not especially novel. This reasoning has given rise to theories that recommend pursuing strategies, which minimize the size of impending threat (e.g., "small losses" Sitkin, 1992) or render the threat more controllable via an "autogenic crisis" (Barnett & Pratt, 2000). While the size of threat or crisis may be critical to the response it elicits, it is also the case that current perspectives too readily accept narrowing and constriction of control as given and ignore organizational capabilities and dynamics that may mitigate or counteract threat-rigidity even when potential losses are large and crisis externally driven. A resilience perspective promotes a new way of

seeing by arguing that organizations are more efficacious than threat-rigidity and other deterministic perspectives allow. This view of organizing connects directly with the emerging scholarly movements of positive psychology (Seligman & Csikszentmihalyi, 2000) and positive organizational scholarship.

Positive psychology emphasizes the study of how people flourish, facilitating the "good life," and nurturing talent. It also imbues individuals with a great deal of agency and the possibility of becoming masterful or efficacious. Resilience is well established in this tradition as an essential virtue, an embodiment of flourishing, and as both the source and result of efficacy and mastery (Sandage & Hill, 2001). Positive organizational scholarship similarly emphasizes how supportive and "virtuous" organizations can be characterized by climates that enable strength and flourishing. These scholars also imbue organizations with a great deal of agency. Organizational resilience is an essential corollary for positive organizational scholarship because it begins to articulate how organizations behave efficaciously and thrive amidst adverse conditions.

A resilience perspective also helps us to more accurately theorize organizational adjustment and adaptation in a world where organizations (and the individuals and groups that comprise them) face increasingly complex and incomprehensible environments characterized by hypercompetition and rapid change. In complex environments where the unexpected is an increasing portion of the everyday, organizations, their units and their members may have limited capacities to anticipate every challenge that could arise (Weick et al., 1999). Resilience will be a necessary capacity "to cope with unanticipated dangers after they become manifest" (Wildavsky, 1988: 147).

Lastly, resilience is often invoked in organization theory, but inadequately theorized. This is not to say that resilience has been absent, but resilience often appears as residual to explain instances when an organization unexpectedly survives or thrives. Studies of resilience in organizations is fragmented, showing up for example in the literatures on high reliability organizing (e.g., Bigley & Roberts, 2001; Weick et al., 1999; Wildavsky, 1988) and organizational learning (e.g., Sitkin, 1992). Overall, there has been little systematic empirical work and it has received little independent attention. Thus, the domain of resilience is worthy of scholarly attention as it can provide insight into the etiology and course of positive adjustment or adaptability under challenging conditions. And it is to this aim that we target the present work. In the next section we briefly review the individual, group, and organizational resilience literatures with an eye toward culling common themes.

RESILIENCE IN INDIVIDUALS, GROUPS, AND ORGANIZATIONS: A SUMMARY OF RESEARCH FINDINGS

Resilience at the Individual Level

The bulk of what we know about resilience grows out of research on vulnerable children in psychopathology and developmental psychology (see reviews by Cicchetti & Garmezy, 1993; Masten 2001; Masten & Reed, 2002). In fact, its earliest roots can be traced back to studies in highly diverse areas such as investigations of schizophrenia, poverty, and response to stress and trauma (Cicchetti & Garmezy, 1993). Because psychologists originally defined resilience as a personal trait, early studies naturally focused on uncovering the extraordinary personal qualities of resilient children. Successful high-risk children were referred to as being *invulnerable* or *stress-resistant*, although *resilient* eventually became the most prominent term for describing such individuals (Masten & Reed, 2002). Subsequent studies focused on identifying *risk factors* (i.e., threats and hazards to individual functioning and development) as well as *protective factors*,

assets, resources, or other qualities of persons or contexts implicated in the development of resilience such as attributes of children (e.g., good cognitive abilities, self-efficacy), aspects of their families (e.g., close relationships with caregiving adults, authoritative parenting), and characteristics of their wider social environments (e.g., effective schools, neighborhoods with high collective efficacy) (Masten & Reed, 2002; Luthar et al, 2000). More recently the focus has shifted away from identifying the protective factors to understanding the *protective processes*, with the intention of elaborating the underlying mechanisms in order to understand how such factors contribute to positive outcomes (Luthar et al., 2000).

The predominant themes that arise from this vast body of research suggest that resilience is founded on at least two building blocks: adequate resources and an active mastery motivation system. First, resilience is more likely when individuals have access to a sufficient amount of quality resources (i.e., human, social, emotional, and material capital) so that they can develop competence. Second, and perhaps more importantly, resilience is more likely when an individual's mastery motivation system is mobilized; that is when individuals have experiences that allow them to encounter success and build self-efficacy and that motivate them to succeed in their future endeavors (Masten & Reed, 2002). These building blocks supersede the prevention or reduction of risks and stressors (e.g., adversity factors) (Masten & Coatsworth, 1995; Masten & Reed, 2002) in promoting resilience.

What does this mean in the context of individuals in work organizations? Very simply it means that resilience is enhanced both when individuals have access to human, social, and material capital, and when they have experiences that add to their growth, competence/expertise, and efficacy. Mastery experiences that contribute to individual competence and growth, are more likely to occur when individuals can exercise behaviors such as judgment, discretion, and

imagination (Luthar et al., 2000; Masten, 2001), when they have the ability to make and recover from mistakes (Dweck, 1986), and when they have the opportunity to observe role models who demonstrate these behaviors (Kobasa, 1979; Sternberg & Kolligian, 1990). In effect, active individual choice and self-organization play a key role in resilience (Luthar et al, 2000).

In organizational settings resilience is engendered when individuals who are most likely to have the relevant and specific knowledge necessary to make a decision and resolve a problem are given decision-making authority (Wruck & Jensen, 1994). At the same time, resilience also hinges on individual training, experience, and the development of specialized knowledge. As individuals gain control over key task behaviors and exercise discretion in performing those behaviors, they develop a sense of efficacy and competence. As a sense of competence increases, individuals are better able to respond effectively in unfamiliar or challenging situations and persevere in the face of failures and challenges. To be resilient does not assure success in every endeavor. Rather, it implies a "capacity for recovery or maintained adaptive behavior that may follow initial retreat or incapacity" upon experiencing a stressful event (Garmezy, 1991). Effective action subsequently reinforces a sense of competence and efficacy. Resilience is an outcome of the self-reinforcing nature of this cycle.

Resilience at the Group Level

There are parallels between resilience at the individual level and the group level of analysis. Because group researchers have not directly investigated resilience per se, to explore such parallels we examine several seemingly divergent sub-areas that include studies of team learning, work on collective efficacy, and analyses of group disasters. Analyses of these three streams leads us to conclude that the processes underlying resilience at the group level similarly focus on factors that promote competence, encourage growth, and restore efficacy.

Studies examining how individuals develop competence and how they respond to challenges and difficulties in achievement settings have shown that individuals who construe ability as malleable and are oriented toward seeking out challenges and opportunities to learn, are perhaps more resilient (Dweck & Leggett, 1988; Heyman & Dweck, 1992: 235). Such individuals are more likely to regard mistakes as a natural part of competence building, more readily tackle failures, persist in the face of hardships, and derive more insightful solutions under adverse conditions, all of which can be construed as "resilient" behavior patterns (Wood & Bandura, 1989). Thus learning and resilience are linked in individuals.

Studies of group/team learning reveal equivalent dynamics (Edmondson, 1999; Bunderson & Sutcliffe, 2002a, forthcoming). Teams oriented toward acquiring new skills, mastering new situations, and improving competence are more likely to positively adjust to challenging conditions and be higher performing over the long term. Positive adaptation is more likely because groups that have honed their competencies are more likely to register and handle the complexity of dynamic decision environments and may be more motivated to persist in the face of obstacles and adversities. But exactly how does this happen?

One mechanism is simply through accumulated knowledge. Research shows that accumulated prior knowledge is necessary for new knowledge to be assimilated and used. Accumulated prior knowledge increases the ability to acquire new knowledge (i.e., put new knowledge into memory) and to use that knowledge in new settings because of the self-reinforcing aspect of memory development (Bower & Hilgard, 1981:424; Cohen & Levinthal, 1990; Bunderson & Sutcliffe, forthcoming). A second mechanism relates to variety in group/team composition. In addition to expanding a group's collective knowledge base (i.e., competencies, response repertoires, and capacity to make sense of new situations), the diversity

of a group's members can kindle resilience by influencing a group's capabilities to sense, register and regulate complexity (Weick, 1979).

A third, but closely related mechanism, is the experiential diversity of individual group members. Teams composed of at least some individuals with broad expertise may be better able to grasp variations in their environments and to see specific changes that need to be made and may also be better at coping—especially when they perceive they have the capability to act (Westrum, 1991). Moreover, teams composed of people who are experientially broad (e.g., generalists) may be better at recombining existing knowledge, skills, and abilities into novel combinations (Bunderson & Sutcliffe, 2000a; Weick et al., 1999). As the capabilities for action increase, groups that perceive many possibilities for action may be better able to grasp variations in their environments. Because action and cognition are linked (Weick et al., 1999), the more an entity can do, the more an entity can see in any situation which bodes well for resolving problems under challenging conditions. Jointly believing that a work group has capacity and that this capacity makes a difference reduces defensive perception, allows group members to see more, and, as they see more, increases the likelihood that they will see where they can intervene to make a difference, in effect reducing tendencies toward threat-rigidity. These capabilities are mediated by effective communication processes, which seem to occur in teams that are comprised of generalists (Bunderson & Sutcliffe, 2000b). In sum, processes that promote competence, enhance human, social, and material assets (e.g., learning capabilities), and reduce risks or stressors (i.e., the more skills the group can leverage, the less the stress) increase the likelihood of positive adjustments because they enhance a group's capabilities to register and handle complexity and increase their motivation and persistence in handling challenges.

Collective efficacy also figures prominently in promoting resilience. It is widely believed that a group's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce desired levels of attainment can have a very positive effect on performance under adversity (Bandura, 1998: 477; Wood & Bandura, 1989). In fact, the strong positive association between perceived collective efficacy and achievement has shown up both in studies where efficacy develops naturally or is created experimentally (see Bandura, 1998; Wood & Bandura, 1989).

Collective efficacy is an emergent group-level attribute rather than the simple sum of group members' perceived personal efficacies. It materializes from individuals' perceptions of the group's functioning (i.e., operative capabilities), and is ultimately the product of the interactive and coordinative dynamics among team members (Bandura, 1998). Research on teams and groups suggest there are a host of factors that contribute to a group's interactive dynamics. Key factors that show up repeatedly include: the mix of knowledge and competencies in the group, how the group is structured and its activities coordinated, how well it is led, the strategies it adopts, and whether its members interact with one another in mutually facilitory or undermining ways (Bandura, 1998; Caproni, 2001). The importance of collective efficacy and the factors contributing to it are well illustrated by what occurs in its absence. Weick's (1993) reanalysis of the Mann Gulch wildfire disaster made famous by Norman MacLean in "Young Men and Fire" (1992) emphasizes how the leader's inability to create and maintain a flexible group structure capable of handling changing demands led to a failure to establish collective efficacy. Absent the belief in their conjoint capabilities and faith in the crew leader, eleven smokejumpers lost their lives because they were unwilling or unable to question what was happening acting instead as if they understood, failed to understand how the crew was unraveling

so that corrective interventions could be made, and in the end did not follow the leader's actions which possibly could have saved them (Weick 1993).

The mechanisms by which collective efficacy contributes to a group's resilience resemble the mechanisms for efficacy at the individual level. Group members' beliefs in their collective efficacy influence how much effort they put into the group endeavor, and since efficacy influences a group's vulnerability to discouragement (Wood & Bandura, 1989), it also influences how long the group will persist when collective efforts fail to produce quick results. Thus groups that perceive they are more efficacious are likely to face challenges and threats with a sense of confidence that they will be able to handle whatever comes up. This in turn influences their problem solving capabilities and enables a group to persist in the face of adversity (e.g., unfamiliar or unexpected events). This pattern of response should enable some kind of positive adjustment. And, similar to the process at the individual level, effective action subsequently reinforces a sense of competence and efficacy. Resilience is an outcome of the self-reinforcing nature of this cycle.

Resilience at the Organizational Level

The literatures that speak most directly to understanding *organizational* resilience are those that examine organizational learning and adaptation, dynamic capabilities, and high reliability organizing. Predictably a parallel set of themes emerges from these domains: Organizational resilience is anchored in organizational processes aimed at enhancing an organization's overall competence and growth (especially the ability to learn and to learn from mistakes), and restoring efficacy through enhancing the ability to quickly process feedback and flexibly rearrange or transfer knowledge and resources to deal with situations as they arise. These processes show up in Meyer's (1982) study of how hospitals handled a doctors' strike mentioned

earlier in this chapter. In his analysis, Meyer found that attempts to restore efficacy through strategic reorientations and to promote competence through broad skills within the organization were positively associated with resiliency. He also found that structures that inhibited growth and flexibility such as rigid job descriptions and centralization were negatively associated with resiliency.

A steady stream of theory in organizational learning over the past decade suggests that positive adaptation over the long term in the face of all types of environments requires organizations to manage the tradeoff between growing (i.e., enhancing variation, innovation), and building competence (i.e., efficiency, honing existing competencies) (e.g., March, 1991). And empirical support for this line of thinking continues to grow (see for examples Bunderson & Sutcliffe, forthcoming; McGrath, MacMillan, & Venkatraman, 1995; Virany, Tushman, & Romanelli, 1992;). For example Virany et al.'s (1992) longitudinal study of minicomputer firms shows that consistently high-performing organizations (that faced alternating periods of uncertainty/turbulence and stability) initiate substantively new patterns of activity (growth) while maintaining links with established organizational competencies. We interpret this long-term adaptability in the presence of periods of uncertainty as evidence of resilience.

Organizational resilience results from enhancing particular competencies such as processes that encourage mindfulness as well as processes that enhance capabilities to recombine and deploy resources in new ways. Mindfulness improves the ability to size up and act on unexpected threats before they escalate out of control (Weick et al., 1999: 117), when there are more potential solutions. Capabilities for reconfiguring resources are born out of ordinary processes (i.e., routines) such as product innovation, strategic decision-making, and alliances with partner firms (Eisenhardt & Martin, 2000). Improvising similarly contributes to competence

at altering an organization's resource base. Recombining behavioral repertoires through improvisation enlarges the size of the action repertoire (and organizational competence) just as surely as does the addition of specific actions (Weick et al., 1999: 101). With an extended range of action goes a broadened field of perception and heightened feelings of efficacy, similar to the process that occurs at the group level. The improvement in overall capability, the generalized capacity "to investigate, to learn, and to act without knowing in advance what one will be called to act upon" is, as we noted earlier, the ultimate form of organizational resilience (Wildavsky, 1988: 70).

Finally, organizational resilience depends on the capability to restore efficacy. Efficacy is more likely to be restored swiftly in organizations that develop, through norms, structures and practices, conceptual slack (Schulman, 1993), ad hoc problem solving networks (Rochlin, 1989), and utilize rich media to communicate (Daft & Lengel, 1984). Conceptual slack refers to diversity in organizational members' analytical perspectives about the organization's technology or production processes, a willingness to question what is happening rather than feign understanding (Weick, 1993), and a greater usage of respectful interaction to accelerate and enrich the exchange of information and capability to process it (Schulman, 1993). Conceptual slack amplifies an organization's competence by increasing the number of perspectives available both for identifying the solving problems and it fosters efficacy and growth through a willingness to question inherited knowledge and value new perspectives. The use of ad hoc problem solving networks and fluid decision structures, which allow problems to flow toward expertise (Rochlin, 1989), also contribute to resilience (Weick & Sutcliffe, 2001; Weick et al., 1999). These dynamics are evident on aircraft carriers (Rochlin, 1989), nuclear power plants (Bourrier, 1996), and disaster response teams (Bigley & Roberts, 2001; Thompson, 1962) and represent a strategy

for flexible problem intervention that enables an organizational system to deal with irreducible uncertainty and imperfect knowledge. Relatedly, social capital and relationships (Leana & Van Buren, 1999) also foster resilience as organizations can tap into their networks when responding to adverse events for needed insight and assistance. This ability to tap additional resources restores feelings of efficacy as organizations can cope with a broader array of interruptions or jolts than their stock of capabilities might indicate.

As we have reviewed the literatures for individuals, groups, and organizations, we have highlighted a number of antecedents of resilience. In Table 1 we summarize some of the specific antecedents in terms of their contribution to competence, growth, or efficacy.

Insert Table 1 About Here

COUNTERACTING MALADAPTIVE PROCESSES: THREAT-RIGIDITY AS AN EXAMPLE

Throughout this chapter we have argued that organizing for resilience can counteract maladaptive processes, such as threat-rigidity cycles. But how does this work? Threat-rigidity (Staw et al., 1981) refers to a sequence whereby a threat (i.e., an adverse environmental condition such as resource scarcity) generates a sufficient amount of stress to deterministically elicit a set of organizational responses that include restricted information processing, constriction of control and formalization of processes, and conservation of resources. The idea is that threats invariantly and automatically yield rigidity. A rigid response under some conditions, such as when a threat is minor and does not reflect a fundamental change in an organization's environment, can be effective and yield resilience (positive adjustment). But if the threat is especially large or novel, it

can overwhelm organizations' emotional, cognitive, and behavioral capacities and lead to a rigid response with disastrous results. This dynamic is illustrated in the bottom half of Figure 1.

What past work does not reflect is the possibility that in the presence of certain organizational capabilities a more salutary response is likely. We have argued that resilience readies and enables individuals, groups, and organizations to respond positively to adverse conditions and emerge strengthened. In other words, the presence of certain enabling conditions (i.e., competence, growth, and efficacy) increases the likelihood of positive adjustment by broadening the information considered, decentralizing authority, and deploying organizational resources.

As organizations increase their competencies and grow by expanding their behavioral repertoires they possess a deep and broad range of possible actions that they can apply to resolve challenges at hand. Moreover, the underlying structures and practices that foster growth and competence also enable recombination of prior knowledge, which extends the range of alternative solutions that are considered. Earlier we argued that action and cognition are linked such that a broad action repertoire contributes to an extended range of perception and information processing, the idea being that the more an entity can do, the more an entity can see in any situation. This counteracts the tendency to restrict information processing or rely on prior information and knowledge. Efficacy facilitates resilience in two additional ways. First, it reduces defensive perception which reinforces the capability for broad information processing. Jointly believing that an organization has capacity and that this capacity makes a difference reduces defensive perception, allow an organization's members to notice more details and to see more ways where they can intervene to resolve a challenge. Second, the underlying interactive and coordinative dynamics serve to loosen control as decision-making and problem- solving

shifts to those who have the greatest expertise with the problem at hand. The net effect is to utilize accumulated cognitive, emotional, and relational resources rather than conserve them as the organization's focus shifts toward effectiveness rather than efficiency. In sum, contrary to the threat-rigidity perspective, the capabilities highlighted in the top half of Figure 1 serve to enlarge informational inputs, loosen control, and reconfigure resources to enable positive adjustment (i.e., resilience).

As illustrated in Figure 1, a positive adjustment at time t feeds back to strengthen the capabilities for a resilient response so that the organization is better prepared to respond to challenges at time t + 1. The organization positively adjusts to current adversity, and in the process of responding, strengthens its capabilities to make future adjustments. By maintaining the processes and structures that yield resilience (i.e., promoting competence, enhancing growth, and restoring efficacy), organizations also inoculate themselves against the liabilities of success—succumbing to complacency, inattention, and predictable routines (Leonard-Barton, 1992; Miller, 1993).

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DIRECTIONS FOR FUTURE RESEARCH

Our analysis has served as both a brief literature review and conceptual integration, but given the sparse state of existing work, particularly at the organization level, opportunities for future research abound. We offer the following as prods and starting points for future theoretical and empirical work.

Two critical conditions are implicit in the notion of resilience: exposure to threat, stress, or adversity as well as the achievement of positive adaptation in spite of the stress or adversity encountered. A natural starting point for future research is to establish criteria for defining and

ascertaining the presence of past or current conditions that pose a threat as well as determining criteria for what constitutes positive adaptation (Masten & Reed, 2002). Good outcomes are not enough to define resilience; nor is a single small challenge. We fear that resilience may run the risk of being an overused and meaningless construct unless scholars attend to these fundamental issues.

Although learning is both an important input and (presumably) outcome of resilience processes, learning can be maladaptive (or at least misleading) as in the case of superstitious learning and can encourage competency traps, whereby organizations focus on the area of their distinctive competence and overlook areas where they lack competence (Levinthal & March, 1993). How do resilient organizations combat the pathologies of organizational learning that accrue over time? Do resilient organizations combat competency traps and the perils of success by avoiding simplified interpretations (Miller, 1993) and maintaining a more complete and holistic picture of organizational operations and the environment (Eisenhardt & Martin, 2000; Weick, et al., 1999)? Or do resilient organizations have specific stocks of assets and resources that combat pathological learning because they enable the recurring recombination of existing knowledge such as dynamic capabilities (Eisenhardt & Martin, 2000), financial resources (e.g., low debt-to-equity ratios) (Gittell & Cameron, 2002), or the combination of physical and organizational architectures (Worline, Dutton, Frost, Kanov, Lilius, & Maitlis, 2002)?

We have argued that resilient organizations respond to adversity differently than their less resilient counterparts. What is unclear, however, is whether resilient organizations interpret challenges and threats differently. Jackson and Dutton (1988) found that executives are typically predisposed to interpreting issues and events as threats, but executives who perceive more control over their environments are more likely to perceive issues/events positively

(Jackson & Dutton, 1988; Thomas & McDaniel, 1990). Some evidence suggests that this sense of control comes from being able to readily process information without getting overwhelmed (Thomas & McDaniel, 1990). Are resilient organizations prone to interpreting adversity positively because they have developed better information processing capabilities? As we argued earlier, do they have broad response repertoires that help to mitigate defensive perception because decision makers can see multiple ways to intervene? Are these organizations less likely to face threats because they consistently exercise their capabilities and manage small discrepancies as they emerge? Or as Weick (this volume) asserts, are resilient organizations better able to shape the beginning stages of adaptation so it doesn't "turn sour"?

CONCLUSION

Positive organizational scholarship is both ontology and an attitude that views organizations and their actors as efficacious and capable of exceptional performance even in the face of obstacles. This is a departure from extant organization theory that views organizations and their members as highly constrained and oft-governed by deterministic processes. Even when concepts such as resilience have been invoked, they have only been loosely specified and systematic theory and research on resilience in the organizational domain have lagged behind scholarly references to the construct. We have attempted in this paper to bring some widely varied literature to bear on this rather important domain. We assert that understanding processes contributing to positive adjustment under conditions of adversity can help to broaden our understanding of adaptability that may not be evident in the ordinary environments in which most organizations exist. Evidence across multiple levels suggests that resilience emerges from ordinary factors that manifest in non-traditional ways that promote competence, restore efficacy,

and encourage growth. These insights provide a conceptual starting point for researchers who

wish to develop theory and conduct empirical research on resilience.

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Table 1 Summary of the Literatures: Organizing for Resilience

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Sufficient Resources to Build and Enhance Competence

Individuals

Increase the amount, access to, and quality of human, social, and material resources available to individuals

Build specific knowledge through training and diverse experiences

Groups

Increase the effective utilization of existing resources through flexible structure and respectful interaction

Enhance group knowledge through members with broad repertoires and experiences

Organizations

Increase the amount and quality of resources through improvisation and recombination

Develop and maintain conceptual slack

Mobilize Mastery Motivation System to Foster Growth and Efficacy

Individuals

Foster structures that enable individuals to exercise judgment, discretion, and to make and recover from mistakes

Put people in roles where they can experience success

Groups

Foster structures that facilitate learning and skill building and reinforce a learning orientation

Leadership that fosters belief in the group's conjoint capabilities

Organizations

Develop structures that allow flexibly rearranging and transferring expertise and resources (e.g., ad hoc problem solving networks, social capital)

Enhance capabilities to quickly process feedback

Figure 1 – Resilient and Rigid Responses to Threat
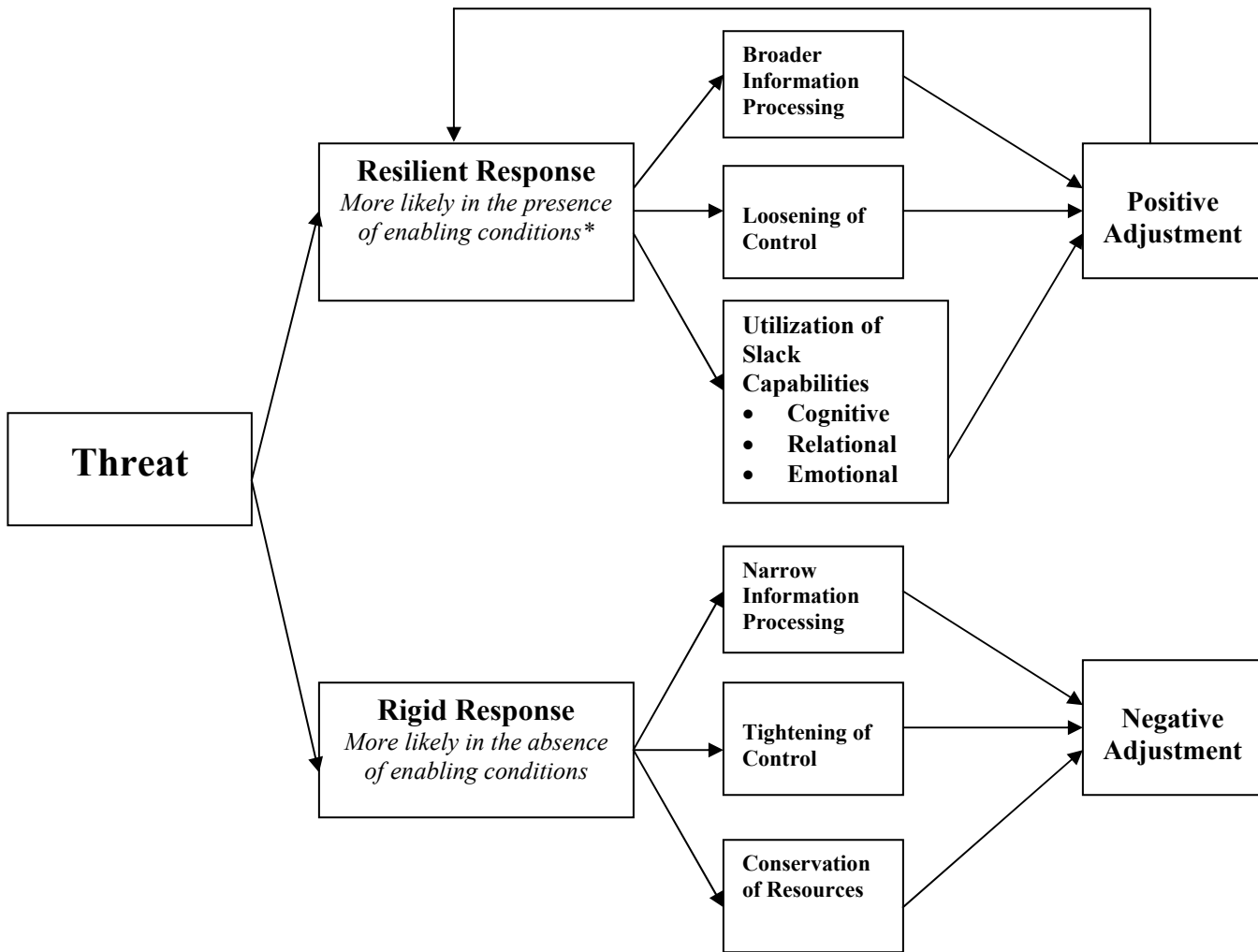
* The enabling conditions are the processes that build and enhance competence, growth, and efficacy