

RESILIENCE: TRANSFORMING THE WAY WE LOOK AT CHANGE
IN ORGANIZATIONS

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ABSTRACT

This paper draws on a unified theory of evolution and the psychological concept of resilience to examine current perspectives on organizational change and development. Propositions for creating a resilient organization are developed and used to build a model of a process to create a resilient organization.

RESILIENCE: TRANSFORMING THE WAY WE LOOK AT CHANGE IN ORGANIZATIONS

That the nature of work and organizations are being transformed in complex and rapid ways is a widely accepted concept throughout management science. The increasing pace of change in the competitive environment has led to theoretical and empirical work in a number of areas designed to assist organizations and their workers cope. Major approaches to change include: planned change (Alderfer, 1975; Beckhard and Harris, 1987; Bennis, Benne et al., 1969; Goodman, Bazerman et al., 1980), strategic change (Hinings and Greenwood, 1988; Nadler and Tushman, 1986; Tichy, 1983), transformational change (Beckhard and Pritchard, 1992; Kilman, Covin et al., 1988; Nadler and Tushman, 1989), total quality management (Carroll, 1992; Crosby, 1979; Garvin, 1988), organizational learning (Argyris, 1990; Fiol and Lyles, 1985; Huber, 1991; Senge, 1990), and reengineering (Dixon, Peter et al., 1994; Hammer and Champy, 1993). In addition, specific strategies have been proposed to enhance an organization's ability to deal with change, these include: transformational leadership (Tichy and Ulrich, 1984), reframing (Bolman and Deal, 1991; Shrivastava and Schneider, 1984), strategic and social partnerships (Cummings, 1984; Henderson, 1990; Waddock, 1988), and understanding paradox and uncertainty (Handy, 1994; Poole and Van de Ven, 1989; Quinn and Cameron, 1988).

Recent reviews of the organizational change literature point to a number of problems with many of these approaches, among which is that they are piecemeal and do not fully address the complexity of change in our society (Beer, Eisenstat et al., 1990; Woodman, 1989). Recently, strategies that integrate various approaches have been suggested to address some of these weaknesses. For example, Bartunek and Louis (1988) propose integrating organizational transformation and organizational development; Lundberg (1989) suggests combining organizational development and organizational learning; and Kim (1990) proposes integrating organizational learning and total quality management. These combinations are one positive step toward a more holistic approach to organizational change.

We suggest an alternative approach —stepping out of the realm of organizational science to that of the physical sciences and psychology. These sciences posit the concept of resilience as an integrative framework to better explain complex change. In this paper we use these literatures as a bridge to organizational settings. We propose the concept of resilience as an integrating framework for understanding change at the individual, organizational and organization/environment levels. Resilience is a concept that has been used extensively in psychology (Anthony and Cohler, 1987; Fine, 1991; Flach, 1988) and the science of evolution (Holling, 1976; Jantsch, 1976; Jantsch, 1981), yet with a few exceptions (for example, Smith, 1984; Weick, 1993), it has been virtually ignored in the organizational sciences. Much work has been done to understand the characteristics and dynamics of resilient persons and ecosystems. It is this work which will form the basis for understanding an organization's ability to flourish in a changing environment.

In the first section of this paper we draw on basic definitions of resilience to show its relevance to an organizational setting. Next, we go deeper into work on a unified theory of evolution to understand properties of resilient systems. An advantage of using this perspective is that it provides a comprehensive and well-developed theory for understanding the dynamics of change. We will show that many of the current organizational change approaches and tools can be placed within the evolutionary framework, yet they suffer from the weakness of focusing on creating just one or a small subset of the properties of a resilient system.

We next present a view of resilience taken from the psychological literature. This literature focuses on the individual and attempts to discern the conditions which lead to personal resilience. In this perspective, resilience is not actively pursued but rather results from a combination of the environment, personal characteristics, experiences, and learned skills. The strategy for creating resilience is holistic and focuses on creating the enabling conditions of resilience.

In the discussion section we synthesize the organizational, psychological, and evolutionary perspectives. A series of propositions are built. We finally present a model for

creating organizational resilience which draws on a combination of the perspectives of resilience presented. Usefulness of the model is discussed in the conclusion.

DEFINITIONS OF RESILIENCE

Drawing on the physical sciences, Smith (1984) defines resilience as the ability of a system to absorb change and disturbance and survive. Resilient systems are able to transform themselves to a different state as a result of stress. This concept is radically different than previous planned change concepts drawn from open systems theory, where achieving equilibrium after stress was the primary goal (Katz and Kahn, 1978). Systems that attempt to maintain equilibrium in the face of change will ultimately be rendered dysfunctional. It is the resilient organization which strives to transform itself, not simply fight to maintain stability, which will flourish in the long run.

In psychology, Flach (1988) defines resilience as the psychological and biological strengths required to successfully master change. At an individual level, organizational actors might exhibit these resilient strengths. This is an important, but not sufficient, condition for facilitating organizational change.

THEORETICAL BACKGROUND

Unified Theory of Evolution

Jantsch (1981) presents an interdisciplinary view of evolution that extends from the physical and biological sciences to the sociocultural sphere. This work helps understanding of organizational change in two ways: the study of evolution is the study of the dynamics of change and the theory is well-developed in its understanding of change in systems ranging from the physical to the sociocultural.

In the 1970's the sciences of complexity and chaos were emerging to find underlying order in phenomena that appeared to have no order. This work influenced a number of sciences, one of which was evolution. Prior to the 1970's the Darwinian view of evolution prevailed.

This is a dualistic view which puts the evolving entity at the mercy of the environment. Either it adapts and survives, or it doesn't and dies. In the 1970's and early 1980's work on a unified theory of evolution was proposed as an alternative to the Darwinian view. This theory attempts to achieve a uniform understanding of the dynamics of change and the relationship of a system to its environment. This work is called the unified theory of evolution because it is applicable to a wide range of sciences, including: the physical, biological, ecological, and sociocultural.

A process Prigogine (1976) discovered forms the foundation for the unified theory of evolution. He tested chemical reactions operating far from equilibrium. What Prigogine found was that the reaction will operate in a deterministic fashion when it is near equilibrium. When the reaction is far from equilibrium the chemical concentrations will fluctuate in orderly patterns. There are a finite number of possible patterns, the specific one realized being unpredictable at a macroscopic level, i.e., it is no longer completely influenced by its environment. The exact pattern to develop is the result of a stochastic process dependent upon local microscopic fluctuations, i.e., it exerts control over its own destiny. Thus, as external conditions begin to push the reaction further from equilibrium, the system will spontaneously reorganize into a new state whose order can be found in the dynamic pattern of chemical concentrations, not in an equilibrium concentration. The specific pattern achieved depends on internal fluctuations, the outcome of which is indeterminate macroscopically. It is through the fluctuations that order, in the sense of a new dynamic pattern of concentrations, is achieved. Prigogine (1976) calls this "order through fluctuation," and systems that exhibit this property are referred to as dissipative self-organizing structures.

The underlying dynamic described above has been found to be applicable to systems ranging from particle physics to sociocultural phenomena (Jantsch, 1981). Relating this to organizations, we can consider the organization to be evolving as a result of stresses in the environment that move the organization further and further away from equilibrium. The organization will eventually reach a point where its old structures no longer hold up. In a physical system such as a chemical reaction, when the old structures no longer hold, the system

naturally self-organizes into another pattern. In a human system, because people can exert their free will on a situation, the transition to a new state is not as natural a process. The frame of reference of the organizational actors and their consequent actions will factor into the organization's ability to remain resilient. From an evolutionary perspective we can conclude that organizations which push toward the old equilibrium are likely to become dysfunctional and perhaps even die. If they can embrace the inherent tensions and generate sufficient internal fluctuation to reach a new state, they will survive and perhaps flourish.

Using the concept of self-organizing dissipative structures as the basis for developing a unified theory of evolution, Jantsch (1981) proposes that one of the underlying principles in understanding evolution, and therefore the dynamics of change, is the concept of co-evolution. Co-evolution is a concept which recognizes that an entity and its environment evolve together. The recognition of a dynamic connection between different levels of complexity is not unique to the study of evolution. The social sciences have developed structuration theory as well as others to address this connection (Layder, 1994). Relating co-evolution to organizations, this means that not only is the environment something that must be adapted to, it is simultaneously something that must be actively shaped.

Insert Figure 1 about here

Figure 1 shows a picture of the co-evolutionary process. There are forces the organization exerts on the environment which help shape the environment. This process is well established in organization theory (Astley and Van de Ven, 1983; D'Aveni, 1994; Pfeffer, 1982). At the same time, there are forces the environment exerts on the organization with which the organization must adapt. This process is also well established in the organizational literature (Emery and Trist, 1965; Lawrence and Lorsch, 1967; Meyer, Goes et al., 1993).

Jantsch (1981) lists ten characteristics of resilient systems that underlie a unified theory of evolution. Jantsch sees these characteristics as descriptive of the system as a whole. For the purposes of our discussion, we find it helpful to distinguish between characteristics that might be controllable by an organization and those with which the organization must cope but cannot control. This differentiation is critical in applying these concepts to organizational life. The controllable characteristics are those features which organizations can use to exert control on the environment and influence their own survival in the co-evolutionary cycle. Those characteristics which the organization has very little control over it must actively try to cope with. Figure 2 shows these characteristics (shown underlined) superimposed on the co-evolutionary cycle. Each characteristic is discussed in more detail below.

Insert Figure 2 about here

Much of the organizational literature that deals with change and surviving in rapidly changing environments can be associated with creating or coping with one or more of these ten characteristics. In Figure 2 we have also shown where we believe some of the current literature fits. We have chosen to show each particular area under the characteristic which represents what we believe to be its main focus even though we recognize some could fit in multiple places. Placing the literature in this framework highlights a potential problem with the approaches taken to help organizations thrive in turbulent times. Each approach focuses on only one or a limited combination of resilient characteristics. The implicit assumption is that improving any one characteristic will increase the organization's ability to cope with change. The unified theory of evolution suggests that the characteristics are interrelated and that resilient systems exhibit all of these characteristics.

Based on Jantsch (1981), we discuss the individual characteristics of resilient systems in more detail. First, we discuss the seven characteristics we consider to be controllable. For each

of these we provide examples from the current organizational change approaches and tools outlined in the introduction. We then discuss the last three characteristics with which the organization must cope, drawing on the broader organizational literature.

Controllable Characteristics

1. *Nonequilibrium* – The first prerequisite for a "dissipative self-organization involving exchange with the environment" (Jantsch, 1981, p. 86), i.e. a resilient system, is that the system must not be near equilibrium. When it is near equilibrium, exchange with the environment stops; this is the equivalence of death according to Jantsch. Organizations proactively engaging in double-loop learning (Argyris, 1977), questioning existing norms and not being content with the status quo, is an example of creating nonequilibrium.
2. *Self-Transcendence* – This is the "creative reaching out of a system beyond its own physical and mental boundaries. Creation is the core of evolution, not adaptation, the joy of life and not just the securing of survival." (Jantsch, 1981, p. 91). For organizations, this is the equivalent of saying that a resilient organization must reach out and proactively shape its environment. A self-transcendent organization is able to reframe its relation to the environment and recognize the principle of co-evolution; the environment and the organization evolve together. As a result, the organization strives for mutual enhancement over self enhancement. Organizations creating social and strategic partnerships is one example of this characteristic (Henderson, 1990; Waddock, 1988).
3. *Epigenealogical Process* – This implies the "reuse of broken-down elements of former self-organizing processes..." (Jantsch, 1981, p. 98). When a resilient organization changes state it does not throw away the old. Rather, it builds on its past experience to create new processes. These new processes likely incorporate elements of the old. For example, reengineering efforts attempt to build new structures but maintain the strengths of the old organization (Hammer and Champy, 1993).

4. *Autonomy* – The evolution of a resilient system is not entirely determined by the environment. The evolution is also a function of the internal generation and enforcement of changes. Autonomy leads to the system becoming increasingly flexible in coping with unexpected events. An autonomous organization would realize that its environment is in some part enacted. What it sees is what it believes it will see. The organization is in part responsible for creating its relationship with the environment. The organization is not a victim of the environment, rather it maintains a positive attitude and proactive stance; both of these qualities have been identified as success features in total quality management (Carroll, 1992).

5. *Spontaneous Symmetry Breaking* – This corresponds to the breaking down of old structures and paradigms and the building of new ones. A particular structure will prove adequate for a period of time. As the system evolves, a fluctuation will be large enough to cause the old structures to become inadequate. In physical systems there is a natural and rapid change to a new order. This has also been observed in social systems and has been described in organizational settings as punctuated equilibrium (Gersick, 1991). Jantsch describes this dynamic in terms of globally stable states (see metastability). Evolution never stops; there are always fluctuations, even within a metastable state (see irreversibility). Occasionally a fluctuation is large enough to force a change in metastable states. Human systems, however, may exert pressure to maintain the current state. Understanding and being comfortable with paradox and uncertainty is one way to reduce the likelihood that the system will avoid breaking structures and paradigms when needed (Handy, 1994; Poole and Van de Ven, 1989; Quinn and Cameron, 1988).

6. *Self-Reference* – Refers to a cyclical organization of processes. The cliché "what goes around comes around" might be used to describe this property of resilient systems. It is important for organizations to understand this property when they take action. The effects of their actions will

eventually create forces that will affect the organization. This property has been recognized in the organizational learning literature as systems thinking (Senge, 1990).

7. *Symbiosis* – This is the property of resilient systems where two parts of the system interact in ways that are beneficial to the system as a whole. This may require that each entity sacrifice a small amount of its own identity for the greater good. It is important to understand this when the organization is deciding what actions it wishes to take. The current focus on creating partnerships is an example of organizations recognizing that they may be able to act collaboratively for the good of both organizations and potentially the industry as a whole.

Characteristics To Be Coped With

8. *Irreversibility* – This property implies that evolution does not occur around equilibrium but rather constantly moves forward. It also implies that organizations should not expect stability or their current structures to be efficacious indefinitely, and that the system cannot return to a prior state. There is always a history which the system remembers. An organization's history affects behavior in the organization and cannot be erased. Organizations which understand that evolution does not stand still and that they can never return to a previous state, will be in a better position to cope with environmental forces, and thus, will be more resilient.

9. *Indeterminacy* – The course of evolution is indeterminate. This means that an organization must be able to cope with the fact that it cannot completely plan for the future. It must learn to be comfortable with uncertainty and be able to take advantage of opportunities as they become available.

10. *Metastability* – This is a property of resilient systems which recognizes that systems can be globally stable even though they are not in equilibrium. In recent organizational theory the concept of configurations has been advanced (see special research forum in *The Academy of*

Management Journal, December 1993). A configuration is a pattern of characteristics. An organization can be in any one of a number of stable configurations. The concept of metastability would say that any configuration is only temporary. The system may absorb a certain number of changes and remain in its current state, but at some point a fluctuation will get through and push the system into another state. The organization will have certain barriers and defenses to protect it from changes and help maintain its current state. To cope with metastability, a resilient organization would have some barriers to defend against constant disruption but the barriers would not be so strong so as to filter out all fluctuations and prevent a change of state.

Psychological Resilience

The psychological literature is concerned with studying the resilient personality. These are people who have the "psychological and biological strengths to master change" Flach (1988). They can absorb stress and bounce back, sometimes even stronger than before. Resilience, however, does not mean that a person always bounces back to the same state as before the stress. Flach (1988) shows that a person may have to break down the old state and put the pieces back together into a new state. This is equivalent to the epigenological process of self-organizing systems described above. In fact, Flach believes that the inability to break down the old state is dysfunctional and not characteristic of resilient people.

Insert Figure 3 about here

In their study of resilience, psychologists (Anthony, 1987; Flach, 1988; Murphy, 1987; Peck, 1987) have developed a list of traits that characterize the resilient person. Figure 3 provides a synthesized list of these characteristics. We have grouped them into four categories: positive thinking, flexibility/creativity, realistic/tolerant, and focus on action. The resilient

person has confidence that great things can be accomplished and works hard and creatively to make them happen. The future is looked upon with hope. Resilient people have the ability to be flexible. They are not fixed on any particular means to achieve an ends. There is an element of realism and a tolerance for pain and failure as being necessary yet temporary states to achieve learning and move forward. Finally, resilient people orient to new situations quickly. These characteristics enable individual action in the face of adversity; the action component is a critical link in the ability of the person to survive in the face of change.

A question that psychologists have asked in their study of resilient people is: how do they become resilient? There is a major difference between the psychological approach to understanding resilience and the approach taken in the organizational literature which focuses on understanding organizations in rapidly changing environments. The psychological literature focuses on the holistic process by which resilience is created, whereas the organizational literature attempts to understand organizational change through the reductionist approach of breaking it into its components.

A common theme for understanding the genesis of resilience in the psychological literature is the recognition of the importance of the environment. Flach (1988) outlines a set of environmental elements that facilitate individuals becoming resilient; these elements are displayed in Figure 4.

Insert Figure 4 about here

Past experiences with difficult situations also play a role in developing resilience. If a person was able to master a difficult situation and come out in tact, she is likely to be more resilient the next time. Because of differences in the environment and past experiences, there are varying degrees of resilience. A person is not either resilient or non-resilient; resilience should be thought of in terms of a continuum (Anthony and Cohler, 1987).

DISCUSSION

As we have shown, the work done in evolution provides a framework within which we can understand the dynamics of change and the conditions which create a resilient system. When the current organizational literature is examined, we find that many of the suggested approaches for surviving in today's environment are focused on creating some subset of the characteristics of a resilient system. On the other hand, when we examine the psychological literature we find that it goes beyond studying individual characteristics of the resilient personality to focus on understanding the conditions which create the resilient personality. These conditions focus on the nature of the environment, experiences, and skills which enable the resilient personality to develop. Action is directed toward the properties that create resilience (e.g. developing creativity, building self-esteem).

When the organizational approach to creating the ability to thrive in turbulent environments is examined in light of the evolutionary and psychological literature on resilience, a number of questions are raised. The first question results from comparing the organizational literature to the evolutionary framework. The evolutionary framework suggests that a resilient system has a number of interconnected and necessary characteristics. Can an approach to creating resilience which does not encompass all of the necessary characteristics be successful in the long run?

We know that the change approaches outlined achieve some success in improving the organization's ability to cope with rapidly changing environments. For example, one of the more broadly focused strategies is Senge's (1990) approach to organizational learning. His approach focuses on more than one characteristic of resilient systems. For example, systems thinking is directly related to the self-reference property, and understanding mental models helps increase autonomy. He also attempts to foster conditions within the organization which will bring about a resilient culture, for example, openness and shared visions. Although it does not encompass all of the characteristics of resilient systems, it does produce some positive results.

The psychological literature makes it clear that there are degrees of resilience (Anthony, 1987); the evolutionary literature suggests that a resilient system exhibits all ten characteristics of resilience; and actual practice shows that something less than a focus on all characteristics can produce positive results. This leads to the following proposition:

P1: An organization can exhibit varying degrees of resilience. The more characteristics of resilient systems which a particular organization exhibits, the higher the degree of resilience that will be exhibited.

Additional questions arise from considering the nature of resilient systems based on the unified theory of evolution. Resilient systems naturally exhibit properties such as learning and metastability. Under the appropriate conditions, a resilient system learns. When a system is far away from equilibrium it naturally changes to a new metastable state. Human systems on the other hand, can, to some extent, exert free will and push the system in one direction or the other. We can hasten the move to a new state or we can retard it. We can concentrate on learning or we can ignore it. Where, then, is the best place to focus organizational action? This question is important because one of the characteristics of resilience has been shown to be a focus on action. This action, however, must be directed appropriately. There are two foci of action we must consider: action directed internally that does not involve exchange with the environment, and action directed externally that does involve exchange with the environment.

In thinking first about the focus of internal action we draw from the psychological approach to creating resilience which highlights its enabling conditions. This is a holistic and indirect approach to creating resilience. Generally, individuals do not actively pursue becoming resilient. They develop characteristics and skills which allow them to be resilient. The question that arises is: Are the current organizational programs focused on the most efficient areas for creating resilience?

When we look at the psychological literature, the process of becoming resilient does not appear as daunting and overwhelming as it does when we think about organizations thriving in

rapidly changing environments. Certainly, this is partially due to the greater complexity of an organization, but should we drop the explanation there? Perhaps we need to focus organizational attention on creating organizational cultures which will enable resilience, rather than focusing on creating characteristics of resilience.

We may be channeling our energies to achieving outcomes that would happen more efficiently if instead we focused effort on creating the enabling conditions of these outcomes. This is equivalent to the notion of a catalyst in chemistry. To achieve a particular compound may require the introduction of an agent whose sole purpose is to act as an intermediary in production of the final output. Perhaps by chasing the outcome directly, it eludes us. This is analogous to catching a butterfly. The more one chases it, the more it flies away. Sit quietly in a brightly colored outfit and the butterfly is likely to come to you. Our job in catching the butterfly becomes understanding the conditions that will attract it and then working to create those conditions. This leads to a second proposition:

P2: When trying to create organizational resilience, energy will be used most efficiently when focused on creating the enabling conditions of resilience.

In our discussion of Proposition 2 we talked about internal action which focused on creating enabling conditions of resilience. We now focus on exchanges with the environment or external action. Organizational resilience only makes sense in the context of a relationship with an environment. In its exchanges with the environment an organization can choose to focus on creating or increasing one of the seven controllable characteristics of resilience, or it can focus its energy elsewhere, for example outmaneuvering the competition. Resilient organizations tend to do the former. For example, if an organization works to create fluctuations in the environment, it will likely strengthen its resilience. D'Aveni (1994), in his book *Hypercompetition*, provides excellent examples of organizations that have increased their resilience by creating fluctuations. One of many examples that D'Aveni provides is Microsoft:

Instead of trying to protect its advantage with DOS, Microsoft is actively trying to erode it. It knows that if it doesn't, a fast-moving competitor will. Microsoft

realizes that its success with MS-DOS, Windows, and many applications programs doesn't guarantee that it will lead in the next generation of software. (D'Aveni, 1994, p. 2)

By eroding its advantage and creating new ones, Microsoft is creating fluctuations in the environment and simultaneously increasing its resilience. Microsoft has, in essence, focused its external action on creating a condition of a resilient system: non-equilibrium. On the other hand, organizations which focus their action on defending against fluctuations in the environment will not increase their resilience and may even reduce it. Sliderule manufacturers are a good example of organizations that focused their actions on defending against fluctuation and died as a result. This leads us to a third proposition:

P3: Energy on external actions will be used most efficiently when focused on increasing the characteristics of resilience.

A MODEL FOR CREATING RESILIENT ORGANIZATIONS

To this point we have focused mainly on two levels of analysis: the organization and its environment. To build a model for creating a resilient organization we must recognize the importance of individual action. After all, it is individuals who must take action to create a resilient organization. The unified theory of evolution recognizes multiple, interacting levels of complexity. Figure 5 shows a diagram of the multi-level co-evolutionary process focused on creating organizational resilience.

Insert Figure 5 about here

The top half of the diagram is essentially the same as we have discussed in Figure 1. The only difference is that we have focused the diagram on the forces needed to create resilience. As suggested by Proposition 3 the focus of the organization's proactive action with the environment is on creating resilient systems.

The bottom half of the diagram adds the individual's interaction with the organization. Again, the diagram is focused on the forces for creating resilient organizations. Proposition 2 suggests that the organization will more efficiently use its energy by focusing on the enabling conditions for resilience. Since the enabling conditions are embedded in the corporate culture, the leaders of the organization play a critical role in bringing about these conditions (Schein, 1983). In keeping consistent with the co-evolutionary nature of the system, the model also shows that the organization must cope with forces from the environment and the individual must cope with forces from the organization.

Insert Figure 6 about here

Figure 6 shows a more detailed model for creating a resilient organization which combines aspects of both the psychological and evolutionary frameworks. It provides a more detailed view of the three levels and interacting loops shown in Figure 5. Proposition 2 states that internal action should focus on creating a culture that enables resilience. The middle box in Figure 6 shows what these enabling cultural characteristics are, but exactly how might the leader create these? To answer this question we can extend what we know from the psychological literature about the characteristics of environments that enable resilience; these characteristics were shown in Figure 3. The leadership actions shown in the left-hand box of Figure 6 correspond to the enabling environmental characteristics described in the psychological literature. In essence, we are suggesting that the organization's leaders are responsible for creating an environment within the organization which fosters the development of resilient cultural characteristics. We take a broad definition of "leaders," they are not just CEO's but people at all levels in the organization who have influence on the system.

Proposition 3 suggests that the organization focus its exchanges with the environment on enhancing its own as well as the system's characteristics of resilience. This is shown by the

right-hand box and the arrows which represent organizational proaction. In exchanges with the environment, the organization should act in such a way that it creates and/or increases properties of resilience. Some examples might include: introducing fluctuations to create non-equilibrium conditions, engaging in social and strategic partnerships, and/or influencing legislation so as to increase its own autonomy.

Proposition 1 suggests that the more characteristics of resilience exhibited by an organization, the more resilient it will be. This suggests that an organization should undertake multiple strategies and actions that are focused on increasing resilient properties. This is indicated by the multiple arrows going into the right-hand box.

CONCLUSION

We use the concept of resilience from the unified theory of evolution as a framework for understanding the dynamics of change in organizations and their environments. This theory has been well developed and provides new insights when applied to organizations. We showed that current work on understanding change and helping organizations cope in changing environments fits well into this framework. In this paper we have only touched the surface when it comes to applying the theory to understand change in organizations as it relates to the relationship with their environment.

Using the evolutionary framework as a basis, we brought in the concept of resilience from the psychological literature. This literature uses a different approach to understanding resilience. Whereas the organizational literature applies a reductionist approach to understanding change, the psychological literature uses a holistic approach. It recognizes the importance of creating enabling conditions for building resilience. This concept was used to suggest that organizations place more attention on creating cultures which enable resilience to grow. The characteristics of these cultures are: positive thinking, flexibility/creativity, realism/tolerance, and a focus on action.

When we examined the organizational change literature in light of the concept of resilience, a number of questions arose. The unified theory of evolution suggests that all the characteristics of resilience are interrelated and necessary. The organizational literature focuses on one or a small subset of these characteristics. Is this sufficient to create resilience? We suggested that, consistent with the psychological literature, there are varying degrees of resilience. Although focusing on a subset of resilient characteristics will help it will not achieve the highest degree of resilience. Higher degrees of resilience should be an organizational goal in this era of rapid change.

When compared to the psychological literature which focuses on creating enabling conditions of resilience, the organizational approach to coping with change raises the question: Are we focused in the right area? We suggested that it may be more efficient to focus internal actions on the enabling conditions as opposed to trying to create the individual characteristics of resilience as do many of the current initiatives for transforming organizations.

This left the question of where to focus external action in exchanges with the environment. We concluded that an organization would do best by focusing on actions which both increases its own resilient properties as well as the systems. Since resilience is increased with increased characteristics of resilience, we suggested a broad approach which focuses on many characteristics.

The frameworks suggested in this paper are a first step to a more holistic approach to organizational change. Empirical work is needed to study the propositions proposed. In addition, there are several important issues that command future exploration. These include: 1) the role of coping mechanisms; 2) the role resilient individuals other than leaders play in creating organizational resilience; and 3) whether current organizational change approaches, used in parallel, can be effective in creating resilient organizations and systems.

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FIGURE 1 : CO-EVOLUTION

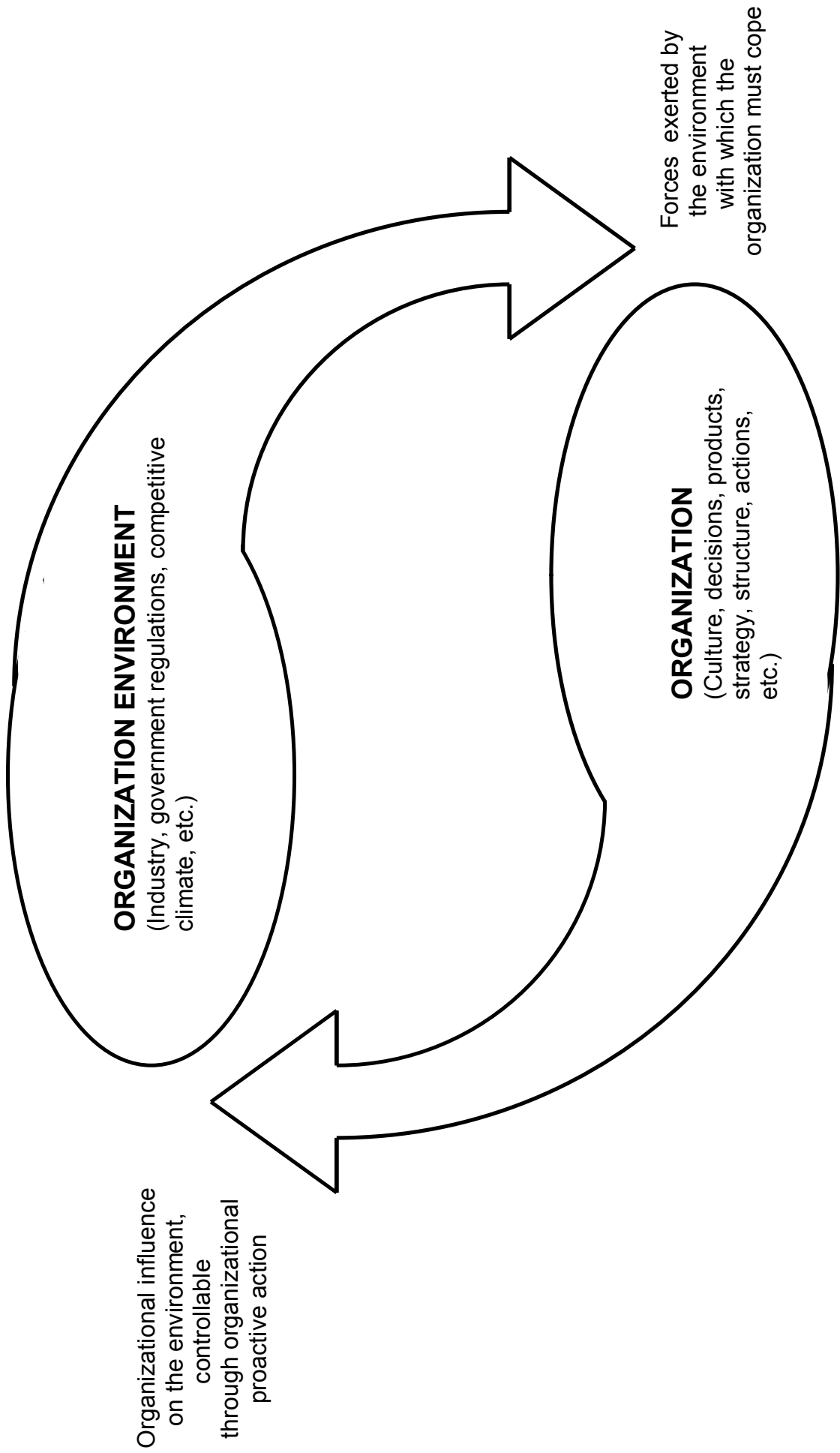
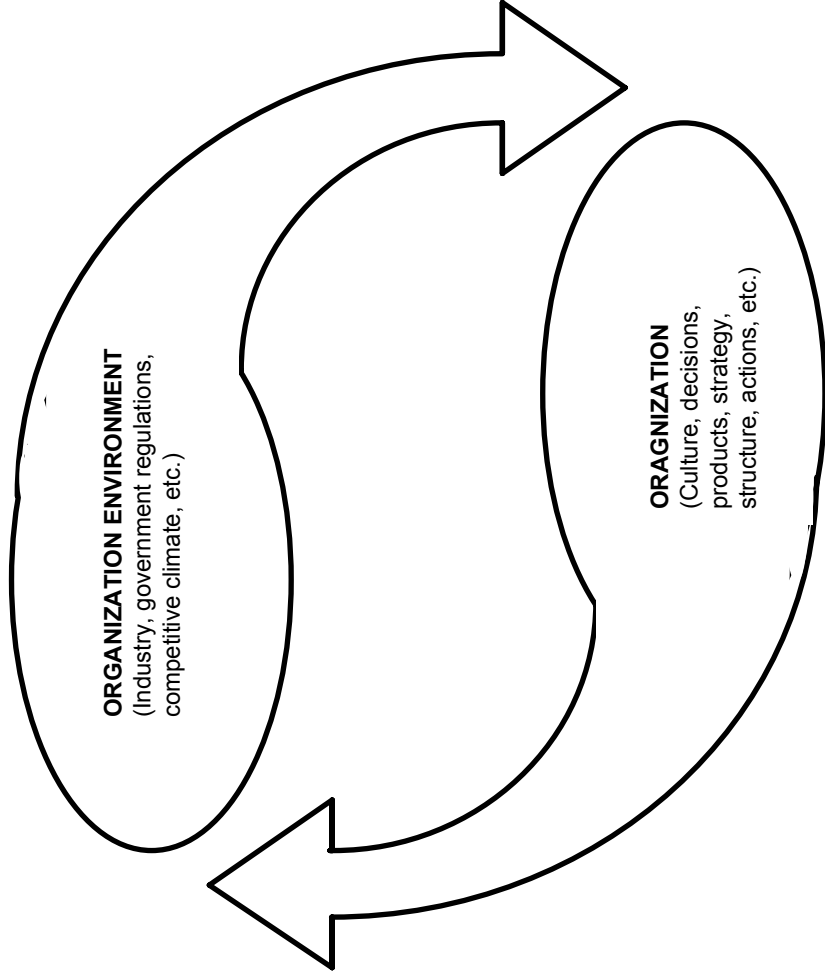
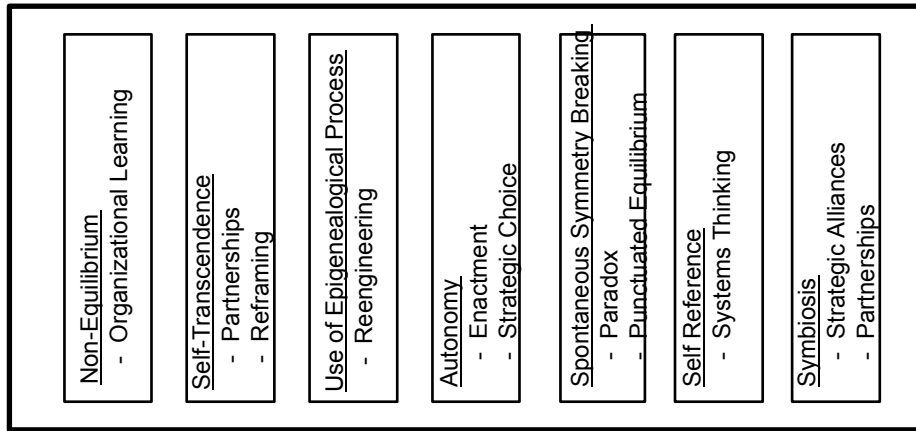


FIGURE 2: CO-EVOLUTION , THE CHARACTERISTICS OF A RESILIENT SYSTEM, AND ASSOCIATED LITERATURE

CONTROLLABLE CHARACTERISTICS OF A RESILIENT SOCIAL SYSTEM



CHARACTERISTICS OF A RESILIENT SOCIAL SYSTEM WITH WHICH THE ORGANIZATION MUST COPE

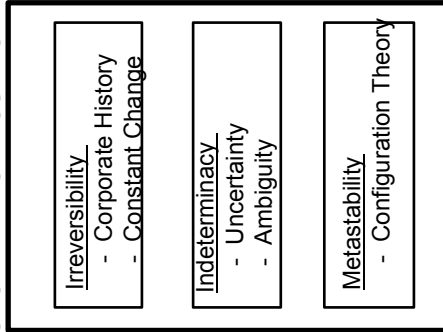


FIGURE 3: INDIVIDUAL CHARACTERISTICS OF RESILIENCE

POSITIVE THINKING

- Feel good about themselves
- Filled with hope
- Recognize their special gifts and talents
- Willing to dream
- Have faith

FLEXIBLE/CREATIVE

- Flexible with respect to means and ends
- Intuitive, original, and creative
- Able to accept substitutions
- Open minded and receptive to ideas

REALISTIC/TOLERANT

- Under stress are willing to retreat to work through the issues
- Able to tolerate pain
- Have realistic evaluations of the environment
- Orient rapidly to a situation

FOCUS ON ACTION

- Integrate thinking, feeling, and acting
- Translate ideas into action
- Have independence of thought and action
- Communicate without inhibition

FIGURE 4: ELEMENTS OF THE ENVIRONMENT THAT FACILITATE INDIVIDUAL RESILIENCE

Source: Flach (1988)

- Coherent and flexible structures
- A human network
- Respectfulness
- Recognition
- Privacy
- Defined, realistic limits on behavior
- Open Communication
- Responsiveness to new ideas
- Tolerance of conflict
- Hopefulness
- Empathy

FIGURE 5: MULTI-LEVEL CO-EVOLUTION

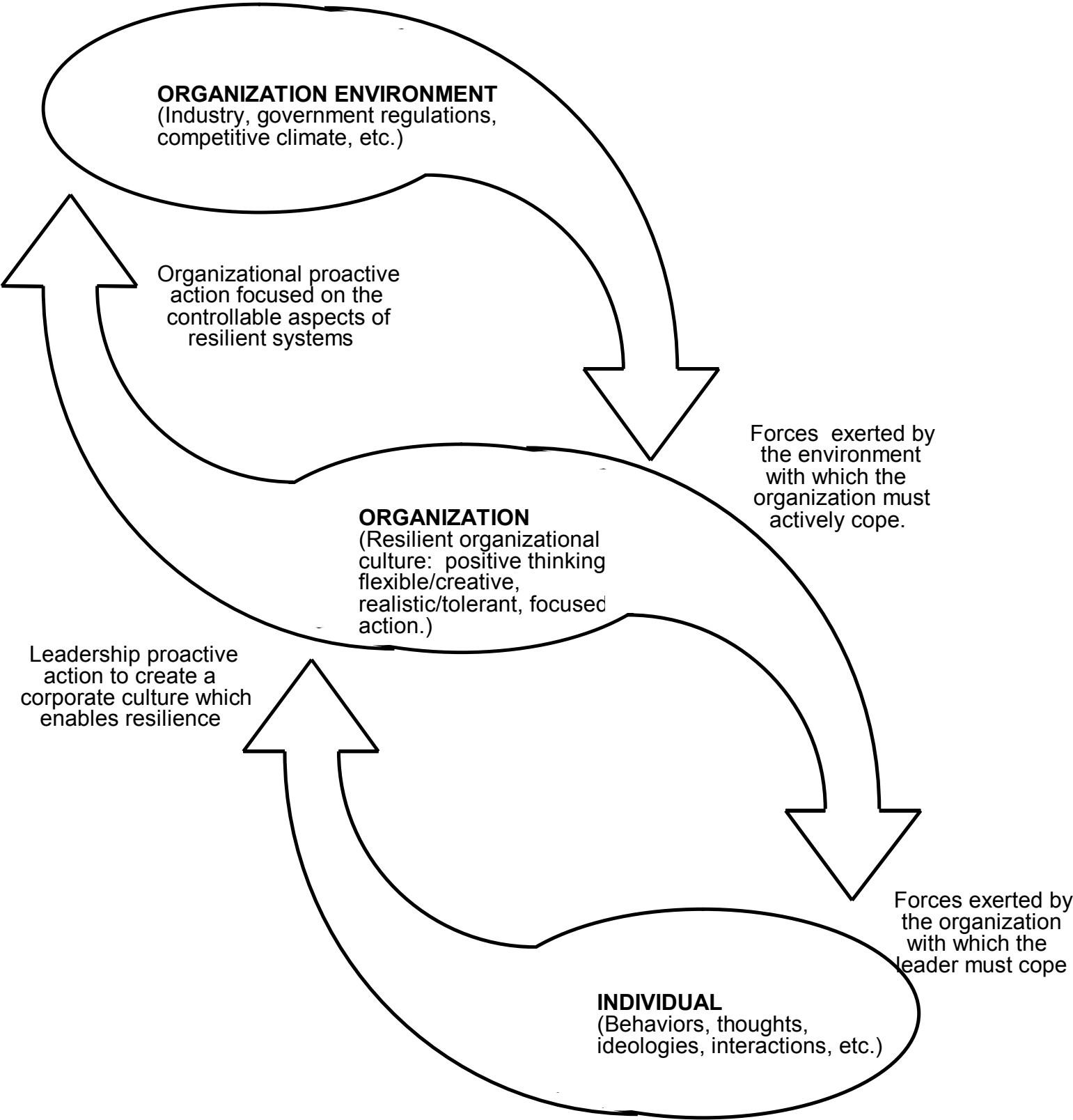


FIGURE 6: CREATING RESILIENT ORGANIZATIONS

