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STRATEGIC RENEWAL AND THE INTERACTION OF CUMULATIVE STRESS AND INERTIA

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Strategic renewal is accomplished in large and small ways. This paper proposes a four phase characterization of how organizations move between state sustaining renewal and the more radical reconceptualizations that significantly alter organization activity. The argument juxtaposes inertia (or commitment to current strategy) and stress, the dissatisfactions that signal the need for renewal. To explore the details of this interaction, and its implications for the evolution of strategy over time, a formal model is developed. Quite plausible organization paths of renewal are simulated via the model which help illustrate our main theoretic arguments.

'Strategic renewal' is one of several terms that have begun to supplant the older phrase 'strategic change.' The shift in vocabulary emphasizes the fact that strategic redirection is evolutionary (Grinyer and Spender, 1979; Miller and Friesen, 1980; Nelson and Winter, 1982; Meyer, Brooks, and Goes, 1990)—it grows out of the current situation and is accomplished over time. In fact, the need for renewal is never ending. The viable organization must have the capacity to frequently improve its alignment with internal and external demands.

This paper describes renewal in a way that emphasizes these evolutionary characteristics. Renewal efforts are characterized as virtually continuous, but pulsing in ways that depart more

and less dramatically from the *status quo* over time. The key driver of this dynamic can be summarized in terms of the tension between *inertia*, an overarching concept that encompasses personal commitments, financial investments and institutional mechanisms supporting the current way of doing things, and *stress*, arising from a mismatch between the demands and opportunities facing the organization and the capacity of the current stategy to respond to those conditions.

The idea that stressful forces erode the fit between the organization and its environment has long been a central concept in the strategy literature (e.g. Chandler, 1962; Andrews, 1971). More recently, attention has been given to the many compelling reasons that organizations remain within the confines of their current strategy despite stressful changes in context (Hannon and Freeman, 1984; Tushman and Romanelli, 1985; Schwenk and Tang, 1989).

A current dilemma for theory development, however, is that both stress and inertia are expected to increase over time in these descriptions, and thus renewal is simultaneously more and less likely. There is little guidance available to suggest when renewal will actually be initiated, given countervailing forces, and insufficient guidance for predicting whether the action taken will focus on incremental adjustments (Braybrooke and Lindblom, 1963) or the more dramatic change in direction traditionally of interest to strategy researchers.

This paper offers a theoretic description of the dynamic balance between stress and inertia as a base for better understanding strategic renewal, followed by a formal probabilistic model of the renewal process. Though formal modeling has not been widely used as a method for understanding strategic change and renewal, modeling has several advantages for understanding a complex process.

First, a formal model requires the identification of key forces from among the many variables typically included in broader, but less specific, theoretical accounts. In our formulation we use the demands of this methodology to pinpoint how renewal evolves from unique initial conditions of stress and inertia and from the idiosyncratic ability of the organization to respond to these circumstances.

Second, a formal model can more specifically distinguish different change processes. Though increasingly dynamic environments make it appropriate to describe renewal as an ongoing activity, there is still an empirically observable distinction between dramatic, state changing renewal efforts and other equally important, though less dramatic renewal efforts that maintain the current trajectory of the organization. The crux of the model developed in this paper is the difference between interpretations of and response to stress and inertia in 'day to day' activity and in more dramatic strategic reconceptualizations.

The third advantage of a formal model is that it can explore the implications of different organization histories for subsequent strategic responses. The simulation reported at the end of the paper clarifies these implications by simulating three theoretically plausible scenarios through 10 different histories of renewal efforts. The results support the potential viability of our theoretic perspective and illustrate the utility of the probabilistic model we develop for describing renewal as an evolutionary process.

CUMULATIVE INERTIA

The underlying proposition of this paper is that explanations of organization renewal must take into account the strong forces of both stress and inertia (Huff and Clark, 1978; Huff, Thomas and Fiegenbaum, 1983; Huff, and Huff, forthcoming; Huff, Huff, and Thomas, forthcoming). In an organizational context, inertia is most succinctly defined as the level of commitment to current strategy, reflecting individual support for a given way of operating, institutional mechanisms used to implement strategy, monetary investments and social expectations. Absent other forces, inertia describes the tendency to remain with the *status quo* and the resistance to strategic renewal outside the frame of current strategy. In the presence of other forces, factors of inertia may be expected to strongly channel renewal efforts even if they can not quell them entirely.

A number of researchers have suggested that organizational inertia will grow over time (Hannon and Freeman, 1984; Tushman and Romanelli, 1985; Schwenk and Tang, 1989). First, putting strategy into place presupposes some initial level of commitment (Barnard, 1938). If basic task demands are met, more detailed and routinized policies and procedures are developed to increase reliability, and the organization begins the process of institutionalization (Selznick, 1957). Capital expenditures for buildings, equipment and training cause commitment to grow; less tangible, but often equally important contributions to inertia are accumulating good will assets with suppliers, buyers and others that can not be completely transferred to any other strategy (Williamson, 1979). The 'framework' (Minsky, 1977) of assumptions that comprise an organization's strategy needs less and less attention under these conditions of satisfactory performance. In fact, a smoothly functioning strategy channels managerial perception such that the question of changing strategy is unlikely to arise (Sims and Gioia, 1986; Johnson, 1988).

As managers find that the organization's strategy satisfactorily meets current conditions, and as they make decisions following its prescriptions, strategy is further enacted (Weick, 1979).

As the new strategy is more strongly supported and more completely implemented, even individuals who are not completely convinced of its benefits are motivated by self interest to find ways to accommodate themselves to the confines of current ways of doing things, and thus begin to have a stake in the *status quo*. The result of these individual decisions, we suggest, is that escalating commitment to the current strategy at the organization level can be thought of as a process of innovation adoption (Rogers, 1962; Lave and March, 1975; Abrahamson, 1991) with interesting parallels to the process Kuhn (1970) describes for the adoption of a new scientific paradigm (Huff, 1982; Pitt and Johnson, 1987; Rumelt, 1984; Sheldon, 1980).

Resistance to further frame changing renewal within the organization arises from the fact that it would be time consuming to abandon increasingly complex current activities and discover alternative procedures for meeting internal and external demands. Further frame changing efforts would resubject the organization to the inefficiencies and uncertainties of new innovation, and require new contracts among important agents (Cyert and March, 1963; Eisenhardt, 1989). As current commitments become less easy to change and more risky to change, as administrative mechanisms are put into place and satisfactory results are more predictable, managers are motivated to work with what they have inherited. More broadly, institutional and economic commitments also begin to take on a life of their own, independent of the coming and going of specific individuals. These commitments are channeled and reinforced by expectations outside the organization, largely embodied in institutions that again operate at a level above individual decision making (Crozier, 1964; DiMaggio and Powell, 1983; Nelson and Winter, 1982).

The implication of juxtaposing concepts of inertia and diffusion is that resistance to major changes in strategy will tend to exhibit a predictable life cycle. In the period immediately following adoption of a new strategy, organizational inertia is relatively low; but as time goes on inertia and the associated resistance to changing a satisfactory strategy will tend to follow a classic 's-shape' adoption curve (Lave and March, 1975: 379). Figure 1 provides a stylized illustration of the pattern of resistance to strategic change that might be anticipated under these conditions.
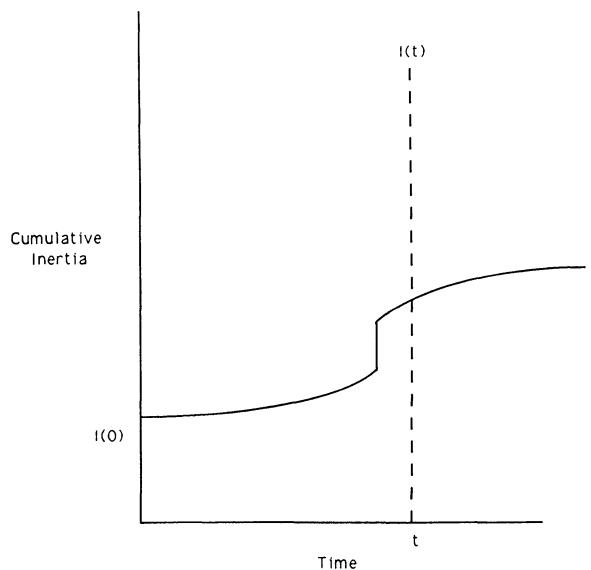

Figure 1.   Cumulative inertia surrounding current strategy

While growth in inertia can be expected to be relatively smooth, reflecting incremental adjustments and improvements, certain events or reinterpretations may more dramatically increase the apparent advantages of a given strategy, as shown by a step increase in $I(t)$ midway along the time line in Figure 1. The unexpected exit of a competitor might suddenly increase commitment to current stratgy in this way. A new ad campaign that both exemplifies current strategy and immediately achieves a dramatic increase in sales provides a second example of organizational activity that might lead to a step level change in inertia.

Despite the prediction that inertia will increase, however, it should be noted that escalating commitment is not inevitable. New hires can dilute the ranks of the committed (Clark, 1970). Champions (Schon, 1967) can die or move away. Institutional repositories of organizational memory can be eliminated (Walsh and Ungson, 1991). Thus, it is possible that the growth curve outlined in Figure 1 will be dampened, or even exhibit a stepped reduction.

ORGANIZATION STRESS

While the forces of inertia in general gain strength, often binding organizations to one strategy for long periods of time, the grounds

for significant strategic renewal are always present as well. The business policy and strategy literature traditionally has focused on the many events (including poor performance, technological advances, changes in the number and activity of competitors, demographic and social shifts, internal reorganization and new leadership) that make past strategic positions less appropriate (e.g. Learned *et al.*, 1965; Andrews, 1971; Rumelt, 1984). 'Organization stress' is a summarizing concept that expresses ways in which current strategy is not satisfactory; it reflects the dissatisfactions of individual actors and imperfections in the fit between the organization and its environment.

Stress is always present because no strategy is perfect. It will increase if implementation falls short of expectations (March and Simon, 1958; Sproull and Hofmeister, 1986), a fairly frequent occurrence because abstract plans almost always incorporate inconsistencies that only become obvious with experience. Stress also increases because the environment is dynamic. As opportunities develop, as new technologies and new ideas become available, the inadequacies of current strategy are underscored (Van de Ven, 1986). New strategies of other firms, including new entrants to the industry, also are likely to increase organization stress (Porter, 1980). If old or new competitors achieve results that the focal organization does not, the problems of fit are further highlighted (Grinyer and McKiernan, 1990).

Competitive assessment is an organization level issue, but increasing dissatisfaction at the personal level is equally likely. Over time members of the organization experience the limits of their current situation; they compare their positions with others; they experience changes in their personal lives that alter their needs and desires (Becker, 1964). Changes in the chief executive officer of a firm, or other members of the top management team, are frequently associated with changing strategy (Fredrickson and Iaquinto, 1989). In fact, all new hires are a potential contribution to organization stress, because new members of the organization typically have ideas and preconceptions that are not in total accord with the current way of operating (Clark, 1970).

Some people, and some organizations, learn to be productive and satisfied in conditions that others would label as unacceptably stressful. Nevertheless, increasing stress appears to be inevitable in almost all settings, the result of a dynamic world, the logical limitations of any given strategy and changes in human aspirations. Not all of these stressors will have negative connotations. 'Opportunities'—new inventions, new resources, new leaders, deregulation, and so on—are important contributors to discomfort with the current way of doing things. Other stressors (performance decline, lawsuits, lost contracts and the like) are of the type more frequently associated with the idea of stress.

Stress accumulating over time is likely to lead more and more people in an organization to perceive the benefits of strategic renewal, in contrast to the processes that increase commitment to current strategy. Because this stress tends to be associated with specific events (inventions, executive succession, poor performance reports, etc.), its upward course can be initially thought of as a series of uneven steps. Organizations are designed, however, as problem solving entities. Many dissatisfactions can be quickly addressed by small changes in operations, personnel reassignment, product improvements and the like (Cyert and March, 1963). Stress also tends to dissipate as attention to and memory of specific stressful events fades. In addition to internal adjustments in perception and current practice, fortuitous changes in circumstance can also reduce stress.

These adjustment processes are all aspects of an important form of ongoing organizational renewal called *homeostasis*, 'the tendency of a system. . .to maintain internal stability owing to the coordinated response of its parts to any situation tending to disturb its normal condition or function' (Stein, 1966: 679). But all problems can not be satisfactorily resolved within one strategic framework (Rumelt, 1984), and thus it is unlikely, over time, that homeostatic efforts can completely counteract dissatisfaction (Mintzberg, 1978). The anticipated result is the generalized path of gradually accumulating stress shown in Figure 2.

Though stress and inertia both are expected to increase over time, there are good reasons not to treat them as reverse images. A close reading of the literature suggests that the cumulative resistance to strategic renewal grows primarily out of gradually accumulating resource commitments and institutional routines, many of
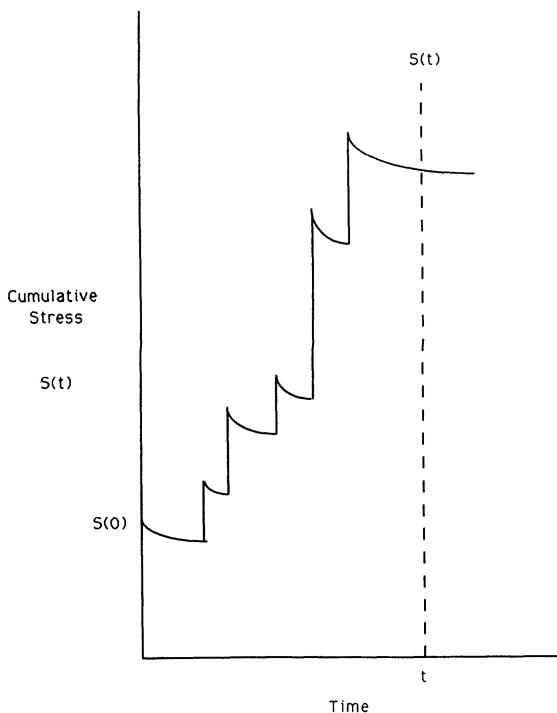
Figure 2. Cumulative stress with homeostasis

the course of strategic renewal, because stress and inertia are interdependent; and therefore their effects upon strategic renewal decisions must be evaluated simultaneously.

Some of those adopting the vocabulary of renewal have been attracted to the idea that the term 'renewal' emphasizes an ongoing effort that in practice is closely linked to other organizational activities (Doz and Prahalad, 1991). While this evolutionary perspective is important, we have come to believe that the frequently drawn distinction between incremental and synoptic, discontinuous change must be maintained. Meyer, Brooks, and Goes point out that:

> Almost everyone who spends much time thinking about change processes seems to conclude that the world changes in two fundamentally different modes (Watzlawick, Weakland, and Fisch, 1974). Continuous, or first order change occurs within a stable system that itself remains unchanged. Indeed system stability often *requires* frequent first-order change. . . . Discontinuous, or second-order change transforms fundamental properties or states of the system. (1990: 98).

which receive little conscious attention. Cumulative stress, which makes renewal more likely to be sought and accepted, is more often associated with specific events that directly capture individual attention.

STRATEGIC RENEWAL AS THE OUTCOME OF INTERACTING STRESS AND INERTIA

While a number of recent works discuss stress and inertia as theoretic complements (Bigelow, 1982; Lundberg, 1984; Tushman, Newman, and Romanelli, 1986; Olivia, Day, and MacMillan, 1988), most of the attention given to these ideas has taken place in separate literatures. Institutional sociology, some industrial economics, and early work in public administration have focused on organizational inertia. The strategy and planning literature along with work on innovation and innovation diffusion have been more concerned with the forces that lead to major changes in strategy. Taken together, this work creates a dilemma for those interested in

Empirical research in organizations provides evidence of the same pattern (e.g. Mintzberg, 1978; Dewar and Dutton, 1986). However, accepting the distinction between large and small renewal outcomes only makes the problem of predicting when renewal efforts will occur more difficult, because now the task must include a prediction of which *mode* of renewal will be attempted; which mode of renewal is more likely to be achieved.

Our intent is to develop a general theoretic account of strategic renewal that uses the changing interaction between stress and inertia as a source of insight into the timing, level, and success of renewal efforts. Work consistent with the bifurcation between 1st and 2nd order change has been going on for some time (e.g. Argyris, 1977). A number of researchers suggest that larger stressors (and short time horizons) will generate synoptic (Hrebiniak and Joyce, 1985), or quantum (Miller and Friesen, 1984) strategic change; while smaller inconveniences lead to more incremental efforts. This answer is not completely satisfactory, since many organizations do not attempt renewal even when large changes occur in their environments (Barr, 1991).

Some authors interested in the distinction

between 1st and 2nd order change have associated the size of the gap between stress and inertia with the probability of a jump from incremental to synoptic change and have modeled this transition via catastrophe theory (Bigelow, 1982; Tushman *et al.*, 1986; Olivia *et al.*, 1988). Our account is compatible with this general line of thinking, but emphasizes the idea the history of renewal efforts in any company generally includes episodes in which major renewal is considered, or even initiated, without ultimately being brought to fruition. This history is important because it often affects future renewal efforts.

Although renewal in our view must be seen as an ongoing process, it is beneficial to describe distinct organization activities that arise out of and subsequently generate different relationships between stress and inertia. Our overarching assumptions are that the interaction between stress and inertia will change over the history of renewal efforts, and that the transition from one type of relationship to another will have an impact on subsequent levels of stress and inertia and thus on the likely path of further renewal efforts. The four states of activity we describe offer theoretically appealing break points for a more formal investigation of stress and inertia as driving forces capable of generating many different renewal paths.

State I: Incremental adaptation within the framework of current strategy

The most likely state of organization activity in relatively mature and stable industries involves incremental homeostatic renewal processes within the framework of current strategy. Only if stress significantly exceeds the ability of the organization to adjust will questions about whether or not a significant renewal effort should be considered arise, disrupting this stable state.

Mintzberg's (1973) early research on managerial work provides the archetypical empirical description of activity within a relatively satisfactory strategic framework. The individual in a reasonably complex task environment responds to immediate demands, making small adjustments in his/her work and the work of others to accomplish assigned tasks as necessary. Though in some organizations 'small' homeostatic adjustments can include innovative and entrepreneurial responses, the key idea is that day to day activity

does not engender basic existential questions. This mode of activity thus has an orderly core even when innovation is the norm.

In fact, day to day activity is often quite satisfying because organizational tasks are carried out in the presence of a set of principles that are so well assimilated they require little conscious thought (Johnson, 1988). These principles, articulated in detailed ways of doing things throughout the organization, are the lifeblood of strategy once it is in place. Just as Kuhn (1970) describes rules, instrumentation and experimental standards as the component parts of a scientific paradigm, so too the details of administrative structure and day to day organizational activity constitute the reality of an accepted organization strategy.

Strategic renewal in this state will be a relatively small, incremental, first order effort. As long as the tasks to be accomplished are demanding enough to occupy most people's time, and as long as they can be carried out with reasonable success, there is little incentive to question the principles that organize activities. Of course, some individuals will be more inclined to question whether the larger endeavor is a reasonable one, but they will get little support from their fellow workers. To the extent that such ruminations interfere with an individual's response to immediate task demands he/she can expect negative consequences from verbalizing an interest in the larger patterns that frame daily activity (Huff and Huff, forthcoming).

Thus in most organizations, most of the time, strategic renewal is not a topic of sustained consideration within the organization; instead, it is accomplished as part of ongoing problem solving activity. In this mode of 'normal' activity (adopting the adjective Kuhn (1970) uses to describe 'normal' science), the researcher interested in working with the concepts of inertia and stress to understand renewal can only observe atomistic components of satisfaction/dissatisfaction that evolve as separate and largely unconscious entities.

State II: Deciding whether or not to consider a significant change in strategy

If the homeostatic capability of the organization inadequately reduces new stress, serious questioning of day to day decision making activity becomes

more likely. In the face of increasing but unresolved stress, individuals within the organization begin to ask whether the current situation could be better dealt with in some other way (Lewin, 1958). The key characteristic of this organization state is that important actors within the organization are forced by unresolved stress to consider the pluses and minuses of current strategy in an abstract and holistic way that is quite different from the unquestioning problem solving characteristic of day to day organizational activity. Broader consideration of pro and con forces, especially in an organizational context and especially when the stakes are high, is also likely to bring to the forefront more 'rational' modes of thought and communication, and a more direct comparison of the forces of stress and inertia.

Questions about the viability of current strategy can not be answered solely within the context of day to day activity (Watzlawick *et al.*, 1974). Events and activities that have been seen in isolation must be abstracted (Fiske and Taylor, 1984) and brought into juxtaposition (Kelly, 1955; Maybury-Lewis and Almajor, 1989). The mental frame must change from one that emphasizes the *execution* of tasks to a much broader one that brings into question the *desirability* of carrying out the activities that have been consuming so much energy. From a cognitive perspective the individual is checking mental categories that were previously assumed to be self evident, and constructing new categories that can encompass more extensive data, including data generated by the current uncomfortable situation (Smirchich and Stubbart, 1985).

Huber (1991) reviews some of the rich empirical evidence indicating that organizations often fail to learn as much as they might from these circumstances. Cohen, March and Olsen (1972), Schwenk (1984) and Nutt (1984) similarly argue that decision makers do not in fact follow the full precepts of the more rational decision making models based on cost/benefit and similar forms of analysis. We nevertheless believe that it is almost impossible to escape the general organization of such models. In fact, the 'objective' and 'rational' form of argument and analysis is so intrinsic to western culture that it permeates 'problem' conceptualization at all levels of concern. As the issues under question become more strategic, as they reach out to have more significant effect on a larger number of people

over a longer time span, it is more and more likely that the basic structure of rational argument will come into play and provide useful analysis (Thomas, 1984).

In addition to the influence of largely unexamined assumptions about 'good' decision making, pro/con arguments that can often be translated into stress/inertia constructs are highly likely because they facilitate organization communication. Widespread formal training in rational forms of analysis provides a commonality that facilitates understanding. The value placed on rationality in our society also improves the chances that arguments made in a familiar, rational, pro/con framework will be trusted. Finding a basis for communication and trust is particularly important in strategic decision processes that require connecting different hierarchical levels and reaching out to people who are relatively unaware of the specific circumstances that motivate the need for strategic renewal (Bower, 1970). Hence 'rational' argument is likely to be used as a symbolic as well as an analytic tool.

Retrospective construction of the pros and cons of the current strategy, which we believe equate theoretically with the concepts of inertia and stress, is likely to reveal associations among events that were previously dealt with in isolation. More conscious consideration of problems is quite likely to unearth potential indicators of trouble that were not recognized previously, and reveal connections between problems that were previously separate, further increasing the stress felt by the individual. On the other hand, it is possible that standing back from day to day decision making will lead individuals to discount previous difficulties, or suggest more inclusive ways of addressing problems that will then add to the commitment surrounding current strategy.

The overall result of retrospective rationality thus is likely to be considerable fluctuation in inertia as well as stress. The key question is whether the situation is grave enough to risk jeopardizing current coalitions (Cyert and March, 1963); grave enough to justify committing resources that could otherwise be used directly to reduce stress within the context of current strategy; grave enough to deflect organizational energies along new paths, many of which are likely to be dead-ends.

The dominant coalition makes this decision;

and it is important to note that the organizational context of early ruminations has already made a difference. Across the organization various individuals have been motivated to look at the current situation more formally. To the extent those who are thinking about renewal communicate with each other, the sums and discounts that are the hallmarks of this period are likely to be edited and made more homogeneous. Key aspects of 'the problem' are being identified, including areas in which disagreement about problem definition exists. These are important organizational level phenomenon that reduce the variation in individual perceptions of stress, and make it more and more sensible to talk about stress as an organizational level phenomenon (Huff and Huff, forthcoming).

In summary, more dramatic, synoptic renewal efforts begin with the overt recognition of tension between voices for change and other conservative voices that typically argue for a renewed commitment to find adaptive solutions within the framework of current strategy. The effectiveness of further homeostatic renewal efforts increasingly come to depend upon the level of organization commitment to the current strategy. The overt evaluation of current strategy signals the *possibility* of a major change in strategy. If stress levels continue to increase, current stress and the possibility of change retard continued growth in commitment to the current strategy, making a major renewal effort more and more likely.

State III: Envisioning renewal alternatives

The literature suggests that problem solving often collapses into consideration of a few, or even one, alternative (Cyert and March, 1963; Pettigrew, 1973). The process of framing this alternative is a distinct phase of renewal activity that can be very divisive as proponents of the current and emerging strategy vie for attention and resources. (While this increases stress, the process of framing an alternative is inherently time consuming.)

Cyert and March (1963) offer an early description of the difficulties of finding mutually acceptable ways of organizing, and the reluctance of decision makers to abandon past solutions. The difficulties of coalition formation are likely to be felt with particular strength as the organization actually begins to formulate renewal alternatives, because each alternative will require somewhat

different contributions from the members of the organization, and thus different coalitions, different 'deals'. The key idea is that there are many more unsatisfactory combinations of benefits than satisfactory ones (Bateson, 1972), at both the individual and organization levels. The difficulties of finding a satisfactory alternative, along with the difficulties of operating without explicit and tacit contracts, pushes the organization to satisfice in searching for an alternative strategic direction rather than to more rationally construct and compare many alternatives (Simon, 1945).

The strain of considering alternative ways of acting is considerably heightened by the fact that the costs and benefits of various renewal alternatives are rarely commensurate. One redirection makes certain issues important and offers an approach to dealing with them successfully. Any other idea for renewal will highlight a somewhat different set of stressors, and offer a different approach to their resolution. In fact, each strategic frame by definition makes different assumptions, highlights different data, suggests different problems as the most important ones to solve (Huff, 1982; Rumelt, 1984). The result of considering such alternatives is more volatility in stress and inertia throughout the organization.

Given the circumstances, it is often the case that some units begin acting in ways that are consistent with a new strategic direction even before it is formally adopted. Quinn (1980) goes so far as to suggest that those interested in renewal might be well advised to foster some of these 'early movers' as a deliberate change strategy.

Even before considering the process in more detail, it is possible to predict two general outcomes from this difficult interaction. One possibility is that no viable renewal alternative presents itself (perhaps due to lack of internal ingenuity, perhaps due to lack of external opportunity). In this case, the organization's return to State I is abetted by an interpretive process that will tend to push inertia and stress apart—discounting current stress and underscoring commitment. If, on the other hand, at least some components of a viable contender are articulated within a relatively short time, interpretive processes can be expected to further reduce commitment to the old strategy by underscoring its many problems, hastening the

day in which the organization puts into place significantly different strategic ideas.

The key idea behind this description of strategic renewal is that the process of *selecting* a direction for renewal is better described as *developing* a direction for renewal (Daft and Weick, 1984). Quinn's (1980) description of rational incrementalism helps explain why this process takes time and a significant transformation in the organization even as the substantive details of renewal are still being worked out. He argues that complex organizations, even in the face of crisis, can not move immediately into a new way of acting. First, key issues in the environment (including the very forces that initiated the process of dramatic redirection by increasing stress) take time to unfold. Then, the details of complex strategy can not be outlined instantaneously. Even if a few people have a very detailed view of what must be done, just preparing the marching orders takes some time. It is more likely that the details have to be discovered by interaction among many different people who have the knowledge necessary to construct the total picture. It's also important that people who have not been as close to stress-causing events be convinced that dramatic renewal efforts are necessary. Finally, true renewal will be more likely if people across the organization gain ownership in the new strategy by putting together pieces of it for themselves, and this again is time consuming.

All of these activities change the balance between stress and inertia. Borrowing again from Kuhn (1970), if the alternative being developed appears to be able to reduce stress that the old strategic frame was not capable of addressing, the inertia supporting the old way of acting can quickly erode.

State IV: Honeymoon and trial

*Evidence from a number of different sources suggests that there's a relatively long period after a synoptic renewal effort has been formally put into place before the organization returns to 'business as usual.' In the interim, those who are most enthusiastic about the new strategy act **as if** the strategy were achieving its potential, while even those who are not convinced often allow a period for evidence to accumulate. In effect, this is a 'honeymoon' period which quickly becomes a period of trial and evaluation as the relatively incomplete strategy begins to generate observable results.*

The shift between State III and IV can be very dramatic. Especially if a formal announcement is made that the organization will follow a new direction, the uncertainties and reinterpretations called for in comparing different paths for renewal significantly decrease. Organization participants are often tired of the uncertainty and debate that major renewal involves. New assignments also do not easily bear the weight of continuing to evaluate overall strategy. These factors, in conjunction with social norms about fair trial, and fear of reprisal for undercutting new commitments, help generate a 'honeymoon' period following formal adoption of a new strategy.

Wise promoters of the new strategy will be as visible and convincing as possible during this period (Bibeault, 1982). Consistent with Schon's (1967) description of product champions, and Kuhn's (1970) description of early efforts by promoters of a new theoretic paradigm, these key individuals will promote redirection even though compelling evidence of the success of the new strategy has not yet been generated.

At the same time the organization now must come to grips with implementation. This phase of the renewal process involves trial and error; and there is still a substantial risk of reverting back to State III in search of yet another strategic alternative because expectations are high, while the actual effectiveness of the newly formulated strategy is likely to be relatively low (Sproull and Hofmeister, 1986).

The countermanding forces of stress and inertia are thus immediately in evidence; but consciously considering further dramatic change is time consuming and distracting at a critical point in the organization's history. If the initial indicators are positive, the efficiencies of operating without questioning the basic underlying logic of action are great. The organizational context will therefore help move people back to a 'business as usual' mode if positive results begin to accumulate. More elements of the old strategy will be phased out; and more people will be directed to tasks associated with the new strategy (Pondy and Huff, 1988). If satisfactory performance can be sustained, the organization will move on to State I activity in which needed adaptations are achieved through less costly homeostatic adjustments.

A FORMAL MODEL OF STRATEGIC RENEWAL

The verbal description of strategic renewal processes just offered highlights a number of ideas that can benefit from more specific expression, especially if the term 'renewal' is to have some value beyond the generic idea of ongoing strategic change. These ideas can be made more explicit by constructing a formal model of the renewal process.

State I: Incremental adaptation within the framework of current strategy

For modeling purposes, the concepts of stress and inertia are defined as summary variables; in practice each is multidimensional and would probably be calculated from several indicators (Huff *et al.*, forthcoming). Though at any given point in time an organization may be in any mode of renewal activity, and this indeed is the promise of the word 'renewal,' the first state to be defined is the most stable situation—the organization that is currently meeting task demands.

The formal articulation of cumulative inertia in this state of activity, $I_1(t+1)$,[1] is expressed by a simple contagion process linked to t, the length of time that the current strategy has been in place, such that

$$I_1(t+1) = I(t) + bI(t)[1-I(t)], 0 \le b \le 1 \quad (1)$$

This expression specifies that the level of commitment to strategy in the next time period will be directly related to the current level of commitment. The second part of the expression describes growth in inertia as a function of the interaction between $I(t)$—which can be thought of as the percent of people committed to the current strategy and/or the percent of all possible actions that have currently been taken to implement the current strategy—and $[1-I(t)]$, the potential for further additions to inertia (convincing those not yet committed or taking actions left to be done), scaled by a rate parameter, b, which can be thought of as an

expression of how compelling, or well represented by champions, the current strategy is.[2]

Cumulative stress, $S_1(t+1)$, is similarly assumed to be governed by the stress accumulated in the previous time period, $S(t)$. Increases in stress are also dependent upon $z(t)$, the incremental amount of 'new' stress experienced by the organization during the time interval $(t,t+1)$, and homeostatic reduction in stress, $H_1(t)$, such that

$$S_1(t+1) = S(t) + z(t) - H_1(t) \quad (2)$$

and

$$H_1(t) = a\,S(t); 0 \le a \le 1 \quad (3)$$

In this model, the 'new' stress function, $z(t)$, is assumed to be a random variable whose values reflect industry volatility; whereas the constant, a, is assumed to reflect the effectiveness of internal adjustments in strategy in response to externally and internally induced stress.

The implication of equations 1–3 is that an organization in the incremental adaptation mode (State I) will experience steadily increasing commitment to the current strategy, while incrementally renewing that strategy in response to new stress. We assume that the organization is likely to remain in State I so long as internal homeostatic renewal mechanisms are adequate to the task of maintaining a stress level *below* some critical threshold, $\bar{S}$. This threshold varies from organization to organization and reflects norms, set by long-term experience, relating to the expected stress levels within the organization and the industry under normal (State I) conditions. When stress accumulates rapidly and the gap between $S(t)$ and $\bar{S}$ widens, the probability of considering more significant renewal increases. For modeling purposes this observation is made explicit by assuming that the probability of leaving State I and entering State II of the renewal process, $P_{12}(t)$, is proportional to the

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[1] A table summarizing formal terms can be found in Appendix 1.

[2] Different curves could be generated by assuming that the contagion effect is more or less effective; however the curves will always exhibit the familiar S-shape of a diffusion process, given expression (1). Implementation will be slow when there are relatively few people committed to a new strategy and relatively little has been done to put it into place. The rate of new commitments increases as the organization has more pieces in place, until relatively few new gains can be made given that implementation is largely accomplished.

positive difference between organization stress, $S(t)$, and the critical threshold, $\bar{S}$, such that

$$P_{12}(t) = \begin{cases} k\,[S(t) - \bar{S}], \text{ if } S(t) > \bar{S} \\ 0, \text{ otherwise} \end{cases} \quad (4)$$

Expressions 1–4 thus endow the organization with memory. The organization and its members have a history of responding to stress and accumulating inertia. Predicting strategic change requires a knowledge of that history.

The model also puts the notion of a 'triggering event' in context. The impact of triggering events has been frequently noted in the literature (e.g. Lyles and Mitroff, 1980), but the nature of these events is usually assumed to be context specific. The preceding formulation suggests that the stressful events associated with more dramatic renewal efforts are similar in kind to an ongoing stream of events experienced by the organization. The event that has been called the triggering event is temporally closest to the time when homeostatic renewal seems inadequate. (In our description, closest to the transition to State II.) However, the event that has been called 'triggering' accounts for only part of the stress leading to a conscious consideration of a more discontinuous renewal effort; it does not have unique attributes other than its position in a sequence of stressful events.

Figure 3 illustrates a typical cumulative stress function and the critical threshold, $\bar{S}$, for an organization that is moving through several periods with positive probabilities of consciously considering more dramatic renewal. These periods are shown as shaded regions between the two curves. The shaded areas thus represent the magnitude and the duration of potential instability.

The stress function illustrated in Figure 3 also provides an example of the homeostatic response to stressors impinging on the organization. Homeostatic renewal is governed by the parameter $a = 0.4$. In this particular example, new stress was generated by a Poisson process with the parameter, $\lambda = 0.8$, representing the expected frequency of stressful events per unit time period such that

$$\Pr\,[z(t){=}nz] = \lambda^n e^{-\lambda}/n!$$

where n is the number of stress inducing events

occurring during time t. Each stressful event is assumed to result in a fixed amount of new stress, z, which is set at 0.25.

State II: Deciding whether or not to consider a significant change in strategy

Organization behavior in State II is characterized by increasing interdependence between stress and inertia. Further, more broadly questioning the need for dramatic organization renewal makes the gap between stress and inertia a critical factor guiding the behavior of the organization in this and subsequent states of the renewal process.

It is assumed that the effectiveness of the homeostatic response to stress in State II, $H_2(t)$, is affected by the level of commitment to the current strategy, $I(t)$, such that

$$S_2(t{+}1) = S(t) + z(t) - H_2(t) \quad (5)$$

and

$$H_2(t) = a\,I(t)\,S(t) \quad (6)$$

Greater consciousness of the forces of inertia, and the more explicit comparison of stress and inertia that characterize a move away from 'business as usual,' also necessitates the introduction of stress into the inertia function. Inertia now is assumed to change in proportion to the *difference* between inertia and stress in the previous time period such that

$$I_2(t{+}1) = I(t) + b[I(t) - S(t)][1{-}I(t)] \quad (7)$$

If stress exceeds inertia, commitment to the current strategy begins to decline and the organization is motivated to focus more explicitly on major renewal efforts, thus shifting to State III. The probability of shifting from State II to State III at time t, $P_{23}(t)$, is assumed to be related to the positive difference between stress and inertia such that

$$P_{23}(t) = \begin{cases} k[S(t) - I(t)], \, S(t) > I(t) \\ 0, \text{ otherwise.} \end{cases} \quad (8)$$

On the other hand, if upon comparison inertia exceeds stress, then the organization is motivated to *reaffirm* the current strategy and return to State I. The probability of returning to State I,
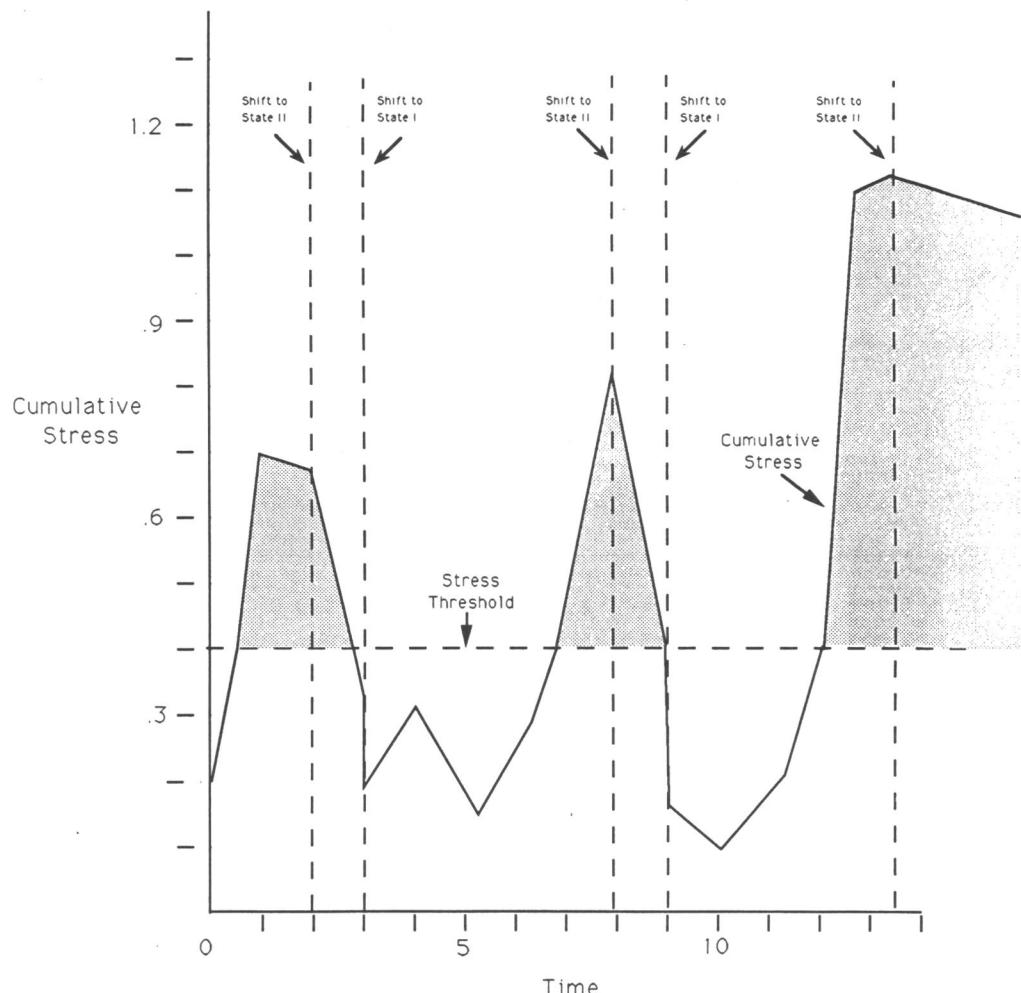
Figure 3. Actual vs. expected stress

$P_{21}(t)$, will increase if inertia dominates stress such that

$$P_{21}(t) = \begin{cases} k[I(t) - S(t)], I(t) > S(t) \\ 0, \text{otherwise.} \end{cases} \quad (9)$$

Finally, the probability of remaining in State II, $P_{22}(t)$, is the residual

$$P_{22}(t) = 1 - [P_{23}(t) + P_{21}(t)]. \quad (10)$$

Reaffirmation of the current strategy occasioned by a return to State I at time t is also assumed to lead to a reduction in cumulative stress and an increase in inertia such that

$$S_{21}(t) = S(t) - aS(t) \quad (11)$$

and

$$I_{21}(t) = I(t) + bI(t)[1 - I(t)]. \quad (12)$$

These expressions reflect the likelihood that more broadly considering the organization's strategy, and finding it strong enough to return to business as usual, will have the beneficial effect of renewing that strategy's homeostatic capability for dealing with stress, as well as increasing commitment to current strategy.

State III: Envisioning renewal alternatives

Formally expressing the exploration of renewal alternatives requires the definition of a new bundle of strategic ideas[*3]. With the transition from State II to State III, the initial level of commitment to the development of this new strategy, $I^*(t)$, is assumed to be some baseline value, $\bar{I}$, with a corresponding reduction in commitment to the current strategy such that

$$I^*(t) = \bar{I}, \text{ and}$$
$$I_{23}(t) = I(t) - \bar{I} \qquad (13)$$

Commitment to the new strategy grows as supporters begin to coalesce such that

$$I_3^*(t+1) = I^*(t) + bI^*(t)[1 - I^*(t)] \qquad (14)$$

As long as State III continues, the organization will tend to divert energy and resources away from supporting the old strategy such that

$$I_3(t+1) = I(t) + b[I(t) - S(t)][1 - I(t)]$$

The probability of deciding to affirm the new strategy[*] at time t (and thus move to State IV) is assumed to be proportional to the difference between the commitment to the newly emerging alternative, $I_3^*(t)$, and the commitment to the current strategy $I_3(t)$ such that

$$P_{34}(t) = \begin{cases} k[I_3^*(t) - I_3(t)], I_3^*(t) > I_3(t) \\ 0, \text{otherwise.} \end{cases} \qquad (15)$$

It is also possible that commitment to the old strategy will reassert itself if cumulative stress falls below inertia. Following the logic of equation (9), the probability of terminating State III renewal efforts and reaffirming the current strategy (return to State I) again is assumed to be proportional to the positive difference between inertia and stress such that

$$P_{31}(t) = k[I_3(t) - S_3(t)], I(t) > S(t) \qquad (16)$$

The associated changes in stress and inertia are as described in equations (11) and (12). The probability that the search for a new alternative continues is

$$P_{33}(t) = 1 - [P_{31}(t) + P_{34}(t)] \qquad (17)$$

If the old strategy is not robust enough to terminate the more dramatic process of renewal, the business of 'minding the store' becomes increasingly difficult under State III conditions as attention and allegiance is redirected. As things begin to fall apart within the frame of the old strategy, one important negative consequence is that there is a corresponding reduction in the efficiency of homeostatic controls on stress surrounding the strategy now in jeopardy, since internal adjustment mechanisms are closely linked to commitment. Stress, $S_3(t)$, which continues to be described as in equations (5) and (6), will increase quickly as inertia declines.

State IV: Honeymoon/trial

The affirmation of the new strategy[*] is assumed to be accompanied by a reduction in stress such that,

$$S_{34}^*(0) = S(t) - aS(t) \qquad (18)$$

This phase of the renewal process is called a honeymoon state because the initial reduction in stress tends to be anticipatory; stress falls *before* the new strategy takes effect. Thereafter stress changes in a fashion described by equations (5) and (6);

$$S_4^*(t+1) = S_4^*(t) + z(t) - aS_4^*(t) I_4^*(t) \qquad (19)$$

On the inertia side, it is assumed that the initial commitment to the newly affirmed strategy, $I_{34}^*(t)$, is

$$I_{34}^*(t) = I^*(t) + bI^*(t) [1 - I^*(t)] \qquad (20)$$

Thereafter, inertia grows steadily such that

$$I_4^*(t+1) = I^*(t) + bI^*(t) [1 - I^*(t)] \qquad (21)$$

The organization is still very much in an evaluative mode in State IV. Consequently, the transitions out of State IV under the new strategy

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[3] Of course, the organization often considers more than one alternative direction for renewal, though in practice the number and range of alternatives is often very limited. For simplicity, we treat only one contender in this basic model.

are assumed to mirror the transitions out of State II under the old strategy. If the commitment to the new strategy, $I^*(t)$, exceeds stress, $S^*(t)$, the probability of entering State I with the new strategy is assumed to be

$$P_{41}(t) = \begin{cases} k[I^*(t) - S^*(t)], I^*(t) > S^*(t) \\ 0, \text{otherwise.} \end{cases} \quad (22)$$

On the other hand, if stress exceeds inertia, the probability of initiating a search for yet another alternative (a return to State III) is assumed to be

$$P_{43}(t) = \begin{cases} k[S^*(t) - I^*(t)], S^*(t) > I^*(t) \\ 0, \text{otherwise.} \end{cases} \quad (23)$$

The changes in stress and inertia associated with transitions to State I or State III are as described in equations (11), (12), (13) and (14).

A SIMULATED HISTORY OF STRATEGIC CHANGE

We have been primarily interested in the problem of constructing a theory of strategic change that is general enough to encompass both small homeostatic adjustments and much more dramatic changes in direction. The objective in developing a formal model is to provide a concrete example of the type of strategic change processes encompassed within the frame of the general theory. A formal model must fall short of conveying the potential richness and texture of a theoretic statement but it does provide an opportunity to ask and answer specific questions within a controlled environment.

The model just outlined has several attractive features, one of which is that it is able to generate quite interesting results with just two key variables—cumulative stress and cumulative inertia. To explore the heuristic power of the model, a series of simulations were performed. Figure 4 illustrates one such simulated history of strategic renewal. The figure shows that the model produces a smooth inertia function, rapidly rising in the early stages of strategy and then tapering off as the strategy reaches maturity. Stress, on the other hand, follows a much more erratic course reflecting the impact of external shocks

and the homeostatic ability of the organization to respond to these shocks. In this particular simulation, the new stress impinging on the organization $z(t)$, is a random variable whose values are generated by a Poisson process with $\lambda = 1.0$ and $z = 0.20$ (see Appendix 2).

The simulation begins with the organization experiencing moderately high stress, $S(0) = 0.5$, and low inertia, $I(0) = 0.2$. Rapidly increasing stress in year 4 results in a shift to State II in which the organization begins to critically evaluate the effectiveness of the current strategy. The shift to State II signals the end of growth in inertia and less effective homeostatic responses to new stress impinging on the organization. The search for and the construction of an alternative strategy begins in year 5.5 with the shift to State III. As commitment shifts from the old strategy to the newly emerging strategy, the probability of replacing the old strategy with the new alternative increases until the decision to adopt the new strategy is made in year 7.5. The shift to the new strategy results in a rapid reduction in cumulative stress; as commitment to the new strategy grows, the effectiveness of the homeostatic response to new stress increases during State IV. The Honeymoon/Trial state ends in year 10 when the organization returns to State I with the new strategy firmly established. In the remaining five years of the simulated history, the organization exhibits a nonzero probability of critically reevaluating its current strategy but no action is taken and the organization continues to operate in a 'business as usual' mode. The simulation thus is consistent with evidence of 'punctuated equilibrium' (Tushman and Romanelli, 1985) described by several authors (Hedberg and Jonsson, 1977; Miller and Friesen, 1980, 1984; Mintzberg, 1978) as typically consisting of periods of experimentation and redirection (often accomplished after several false starts and reversals—symptomatic of high stress/low inertia conditions), followed by periods of much more quiescent consolidation, a condition that is symptomatic of a shift to low stress/high inertia.

Of course, it is possible that the achievement of a second period of relative equilibrium shown in Figure 4 might not have occurred. Poor performance is a major element in our definition of stress, and the basic model is compatible with empirical research on organization decline.
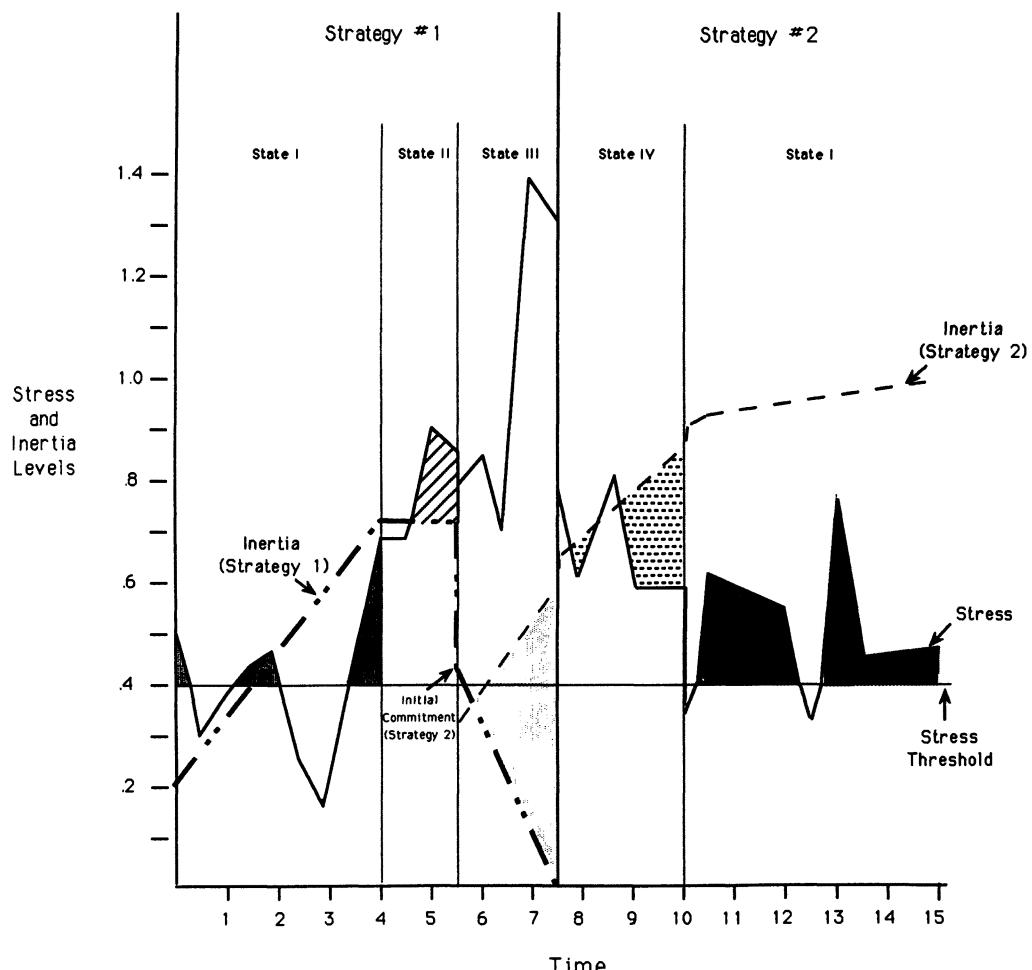
Figure 4. Simulated history of strategic renewal, ■ = $P_{12} > 0$; ▨ = $P_{23} > 0$; □ = $P_{34} > 0$; ▣ = $P_{41} > 0$

Recent studies indicate that firms in trouble often are involved in a 'downward spiral' (Hambrick and D'Aveni, 1988), the first indicators of which generally can be traced back well before direct indicators of failure become publicly available. Bibeault's (1982) observation of turnaround failures indicates that internal organizational factors, most of which could be thought of as factors of inertia, appear to be more responsible for lack of success in reversing a pattern of decline than factors from the external environment. Whetten (1980) notes that poor performance and other indicators of organizational decline exacerbate stress. A particular problem is that stress can lead to inflexible behaviors (McCaskey, 1982) which helps explain why small incremental changes almost always are the first responses to indicators of trouble (Barker, 1991; Grinyer and

Spender, 1979; Nystrom and Starbuck, 1984; Schendel, Patton, and Riggs, 1976). Patterns compatible with these observations can be seen in other simulation runs.

Successful turnarounds of serious performance decline, though sometimes based on renewal at the operational level, often require major reorientation. The new perspective implicit in such a renewal frequently involves changes in the Chief Executive Officer (CEO), the top management team or the board of directors (Bibeault, 1982; Grinyer, Mayes, and McKiernan, 1988; Schendel *et al.*, 1976; Slatter, 1984). Ford and Bacus (1987) suggest that these new leaders not only bring new causal knowledge into the firm, they also are unconnected to previous commitments of the firm. In other words, new leaders are a mediating force (Barker, 1991)

between the forces of inertia and the forces for change in the organization.

To further explore the ability of the model to generate various patterns of strategic change, we set up a series of simulations in which industry level conditions are established through common λ and z parameters that define the incidence and magnitude of new stress impinging on organizations in a single industry. (See Appendix 2 for further discussion of industry stressors.) As a further simplification for comparative analysis, three other parameters in the model are held constant over all simulations: $\bar{S}$ is set at 4, $\bar{I}$ is set at 0.3, and $k = 1.0$. (Appendix 1 lists model parameters and their definitions.) Firm differences are explored by varying a, b, $I(0)$, and $S(0)$. As indicated earlier, the parameters a and b can be thought of as the organization's ability to resolve stress through internal adjustment and renewal (a) and the rate at which the current strategy is being institutionalized (b). A less effective strategy could be explored by decreasing a. A more rapidly implemented strategy, which would increase the impact of inertia on the probabilities of transition from one state of the model to another, would be expressed in a higher value for b.

Table 1 shows the three different scenarios investigated via simulation. In the first scenario, inertia is initially high, stress is low, the company's homeostatic capacity, a, is high, as is its ability to incorporate new changes in current strategy, b. This is the kind of company that has a successful strategy in place. Among retailers, for example, Wal-mart would fit this profile. The second scenario might be thought of as describing companies like Beneton or the Body Shop in their early days as new entrants in the industry. (Figure 4 provides an example of strategic change

under this scenario.) Stress is high as such companies deal with entry, and cumulative commitment to a new strategy is relatively low. However, the company in this scenario is assumed to respond well to stress, as shown by a high a, and to do a good job of incorporating new people and ideas in its strategic vision, shown by a high value for b. The situation is somewhat different in the third scenario, which might be thought of as a well entrenched competitor like Sears. While many aspects of an old strategy are firmly entrenched (high $I(0)$), and experience helps the company deal with new stressors, perceived inadequacy of current strategy ($S(0)$) is also high, and relatively little is being done to refurbish that strategy (low value for b).

Table 2 shows the results of 10 runs under each of the three archetypical scenarios. None of the runs under Scenario I resulted in a major strategic renewal over the 15-year period simulated, while 5 out of the 10 runs yielded major strategic change in Scenarios II and III. These results have rather startling implications for researchers attempting to correlate strategic change with industry wide changes in the competitive environment or with different attributes or qualities of the organization. Recall that the distribution of stressors, $z(t)$, is identical for all simulations and yet the firms react very differently to the same set of stressors depending upon their levels of cumulative inertia and cumulative stress at the beginning of the simulation and differences in the parameter b governing the growth of inertia.

The differences between the three scenarios become even more apparent when the simulated histories are summarized in terms of the observed transition rates between the four states for each

Table 1. Three scenarios for strategic renewal

Parameters & initial conditions	Scenarios		
	I	II	III
$I(0)$	0.5	0.2	0.5
$S(0)$	0.2	0.5	0.5
a	0.4	0.4	0.4
b	0.3	0.3	0.1

Table 2. Simulated changes in strategy under three scenarios (10 runs per scenario)

Number of changes in strategy	Scenarios			Total
	I	II	III	
0	10	5	5	20
1	0	2	0	2
2	0	3	1	4
3	0	0	4	4
Total cases	10	10	10	30

Table 3. Observed transition rates for Scenario I simulations

From \ To	1	2	3	4
1	0.88	0.12	—	—
2	0.39	0.61	0.0	—
3	0.0	—	0.0	0.0
4	0.0	—	0.0	0.0

Table 4. Observed transition rates for Scenario II simulations

From \ To	1	2	3	4
1	0.89	0.11	—	—
2	0.25	0.65	0.10	—
3	0.0	—	0.71	0.29
4	0.22	—	0.17	0.61

scenario. Table 3 summarizes the observed patterns of strategic change under Scenario I. Under this scenario, companies are likely to spend most of their time in State 1 and there is a low probability (0.12) that they will leave State 1 once they have entered that state. Although some cycling between Scenario 1 and Scenario 2 does occur, none of the 10 simulations ever exhibit a shift to State 3. The strategic renewal processes in the form of internal adjustments to the current strategy are sufficient to cope with the new stressors impinging on the organization.

The observed patterns of strategic change under Scenarios II and III are summarized in Tables 4 and 5). These firms also have a low probability of leaving State 1 (0.11 and 0.10 respectively); and if they do enter State 2, there

Table 5. Observed transition rates for Scenario III simulations

From \ To	1	2	3	4
1	0.90	0.10	—	——
2	0.07	0.86	0.07	——
3	0.0	—	0.72	0.28
4	0.0	—	0.41	0.59

is a high probability that they will either remain in State 2 or return to State 1. However, the transition rates from State 2 to State 3 are nonzero (albeit small) under both Scenario II and Scenario III and the transition rates between States 3 and 4 also are nonzero. By implication, firms under Scenarios II and III have a low probability of initiating the search for a new strategy; but once search begins, it is quite likely that a new strategy will be adopted. Scenario II differs from Scenario III in that there is a substantial possibility that the Scenario II firm will find a viable strategy and reestablish 'business as usual' (the transition rate from State 4 to State 1 is nonzero) whereas the adoption of a new strategy by Scenario III firms tends to create the basis for further strategic change.

The overall conclusion of this exercise is that repeated runs of the model under a variety of initial conditions and parameter values generate a range of plausible outcomes. Two generalizations are particularly compatible with our general theoretic observations:

1. the organization's history of strategic change has an important bearing on subsequent tendencies to change strategy;
2. initial levels of stress and inertia have long term effects upon the organization's history of strategic change.

More broadly, the simulations show an interesting bifurcation between firms that stay within one strategic framework for long periods of time and firms (in the same industry and even of the same general type) that actively seek major changes in strategy. This is particularly evident for firms under Scenarios II and III. These organizations tend to be either 'movers' or 'stayers,' meaning that the two most likely conditions are either high stress/low inertia or low stress/high inertia. The two other conditions, high inertia/high stress, and low inertia/low stress are less stable, and the organization tends to gravitate toward either a 'mover' or 'stayer' condition.

CONCLUSION

We began this paper with the observation that many things conspire against organizational renewal, and these factors should be expected to

gain strength over time. On the other hand, organizational renewal tends to become more necessary and more likely over time, as individuals, organizations and interorganizational systems change and past patterns of organizational activity become less appropriate.

The opposition of stress and inertia has been explored recently by a number of researchers. This paper contributes to the development of these theoretic constructs by focusing on the *interaction* of stress and inertia as a way of predicting the evolution of renewal efforts over time. Particular attention has been given to the transition from state maintaining renewal efforts to more dramatic, state shifting efforts to revitalize the organization.

The theoretic explanation is basically consistent with work on decline and turnaround, but it places increased emphasis on work in the cognitive area. This work highlights several phenomena, including the tendency to give little conscious attention to strategy as long as organization outputs are relatively satisfactory; the more conscious juxtaposition of pro and con arguments as significant renewal efforts are considered; the subsequent comparison of the strengths and weaknesses of alternatives with past strategy, and the tendency to allow a grace period for newly adopted strategy. The formal model is expressed in a form widely used in the literature on the diffusion of innovation. This form is also theoretically appropriate for expressing the aggregation of individual cognitive interpretations into more collective forms of organizational activity.

Radical renewal efforts (as opposed to the incremental adjustments that are often accomplished without great fanfare) are more likely as the stress individuals encounter in day to day tasks exceeds the individual's/organization's ability to make state-maintaining adjustments. This observation, however, is only the tip of the iceberg. Whereas previous models have used catastrophe theory to model an unexplained shift between one organization strategy and another, the model developed in this paper focuses on likely shifts in the balance between stress and inertia, and the consequent impact of this balance on the course of renewal efforts.

The simulation reported at the end of the paper behaves in ways that are compatible with this theoretic description, and with previous empirical work as well. The performance of the model shows that it may be a useful tool for comparing archetypical change experiences, such as the difference between renewal efforts in more and less turbulent environments. It also serves to clarify the relationship between past experience and the adoption or nonadoption of new strategic initiatives.

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REFERENCES

Abrahamson, E. 'Managerial fads and fashions: The diffusion and rejection of innovations,' *Academy of Management Review*, **16**, 1991, pp. 586–612.

Andrews, K. R. *The Concept of Corporate Strategy*, Dow–Jones Irwin, Homewood, IL, 1971.

Argyris, C. 'Double loop learning in organizations', *Harvard Business Review*, **55**, 1977, pp. 115–125.

Barnard, C. I. *The Functions of the Executive*, Harvard University Press, Cambridge MA, 1938.

Barker, V. L. 'Corporate turnarounds as strategic reorientations', Unpublished doctoral dissertation, University of Illinois, 1991.

Barr, P. 'Organization stress and mental models', Unpublished doctoral dissertation, University of Illinois, 1991.

Bateson, G. *Steps to an Ecology of Mind*, Ballantine, New York, 1972.

Becker, H. 'Personal change in adult life', *Sociometry*, **27**, 1964, pp. 40–53.

Bibeault, D. B. *Corporate Turnaround*, McGraw-Hill, New York, 1982.

Bigelow, J. 'A catastrophe model of planned organizational change', *Behavioral Science*, **27**, 1982, pp. 26–42.

Bower, J. L. *Managing the Resource Allocation Process*, Irwin, Homewood, IL, 1970.

Braybrooke, D. and C. E. Lindblom. *A Strategy of Decision*, Free Press, New York, 1963.

Chandler, A. D. *Strategy and Structure*, Doubleday, Garden City, NJ, 1962.

Clark, B. R. *The Distinctive College*, Aldine, Chicago, IL, 1970.

Cohen, M. D., J. G. March and J. P. Olsen. 'A garbage can model of organizational choice', *Administrative Science Quarterly*, **17**, 1972, pp. 1–25.

Crozier, M. *The Bureaucratic Phenomenon*, Tavistock, London, 1964.

Cyert, R. M. and J. G. March. *A Behavioral Theory of the Firm*, Prentice-Hall, Englewood Cliffs, NJ, 1963.

Daft, R. L. and K. E. Weick. 'Toward a model of organizations as interpretive systems', *Academy of Management Review*, **9**, 1984, pp. 284–295.

Dewar, R. D. and J. E. Dutton. 'The adoption of radical and incremental innovations', *Management Science*, **32**, 1986, pp. 1422–1433.

DiMaggio, P. J. and W. W. Powell. 'The iron cage revisited', *American Sociological Review*, **48**, 1983, pp. 147–160.

Doz, Y. L. and C. K. Prahalad. 'Managing DMNCs: A search for a new paradigm', *Strategic Management Journal*, **12**, 1991, pp. 145–164.

Eisenhardt, K. M. 'Agency theory: An assessment and review', *Academy of Management Review*, **14**, 1989, pp. 57–74.

Fiske, S. T. and S. E. Taylor. 'Social schemata'. In S. T. Fiske and S. E. Taylor, *Social Cognition*, Random House, New York, 1984, pp. 139–181.

Ford, J. and D. Baucus. 'Organizational adaptation to performance downturns', *Academy of Management Review*, **12**, 1987, pp. 366–380.

Fredrickson, J. W. and A. L. Iaquinto. 'Inertia and creeping rationality in strategic decision processes', *Academy of Management Journal*, **32**, 1989, pp. 516–542.

Grinyer, P. H., D. G. Mayes and P. McKiernan. *Sharpbenders*. Blackwell, Oxford, 1988.

Grinyer, P. H. and P. McKiernan. 'Generating major change in stagnating companies', *Strategic Management Journal*, **11**, 1990, pp. 131–146.

Grinyer, P. H. and J.-C. Spender. 'Recipes, crises and adaptation in mature businesses', *International Studies of Management and Organization*, **9**, 1979, pp. 113–133.

Hambrick, D. and R. D'Aveni. 'Large corporate failures as downward spirals', *Administrative Science Quarterly*, **33**, 1988, pp. 1–23.

Hannon, M. T. and J. Freeman. 'Structural inertia and organization change', *American Sociological Review*, **49**, 1984, pp. 149–164.

Hedberg, B. L. T. and S. Jonsson. 'Strategy formulation as a discontinuous process'. In W. H. Starbuck and P. C. Nystrom (eds), *Handbook of Organizational Design*, **7**, 1977, pp. 89–109.

Hrebiniak, L. and W. Joyce. 'Organizational adaptation: Individual choice and environmental determinism', *Administrative Science Quarterly*, **23**, 1985, pp. 119–131.

Huber, G. P. 'Organizational learning: The contributing processes and the literatures', *Organization Science*, **2**, 1991, pp. 88–115.

Huff, A. S. 'Industry influences as strategy reformulation', *Strategic Management Journal*, **3**, 1982, 119–131.

Huff, A. S. and J. O. Huff. 'Individual interpretation and organization strategic change'. In L. Melin (ed.), *Strategic Bridging*, Oxford University Press, Oxford, forthcoming.

Huff, A. S., J. O. Huff and H. Thomas. 'The dynamics of strategic change'. In H. Daems and H. Thomas (eds), *Strategic Groups, Strategic Moves and Competitive Strategy*, Pergamon Press, London, forthcoming.

Huff, A. S., H. Thomas and A. Fiegenbaum. 'Modeling strategic group formation', presentation at the Strategic Management Society Meetings, Paris, October 1983.

Huff, J. O. and W. A. V. Clark. 'Cumulative stress and cumulative inertia: A behavioral model of the decision to move', *Environment & Planning*, **10**, 1978, pp. 1101–1119.

Johnson, G. 'Rethinking incrementalism', *Strategic Management Journal*, **9**, 1988, pp. 75–91.

Kelly, G. A. *The Psychology of Personal Constructs*, Vols. 1 and 2. Norton, New York, 1955.

Kuhn, T. S. *The Structure of Scientific Revolutions*, The University of Chicago Press, Chicago, IL, 1970.

Lave C. A. and J. G. March. *An Introduction to Models in the Social Sciences*, Harper and Row, New York, 1975.

Learned, E. P., C. R. Christensen, K. R. Andrews and W. D. Guth. *Business Policy*, Irwin, Homewood, IL, 1965.

Lewin, K. 'Frontiers in group dynamics', *Human Relations*, **1**, 1947, pp. 5–41.

Lundberg, C. C. 'Strategies for organizational transitioning'. In J. R. Kimberly and R. E. Quinn (eds), *New Futures*, Dow Jones–Irwin, Homewood, IL, 1984, pp. 60–82.

Lyles, M. A. and I. I. Mitroff. 'Organization problem formulation: An empirical study', *Administrative Science Quarterly*, **25**, 1980, pp. 109–119.

March, J. G. and H. Simon, *Organizations*, Wiley, New York, 1958.

Maybury-Lewis, D. and J. Almajor (eds). *The Attraction of Opposites: Thought and Society in the Dualistic Mode*. University of Michigan Press, Ann Arbor, MI, 1989.

McCaskey, M. *The Executive Challenge*. Pitman, Boston, MA, 1982.

Meyer, A. D., G. R. Brooks and J. B. Goes. 'Environmental jolts and industry revolutions', *Strategic Management Journal*, **11**, Summer 1990, pp. 93–110.

Miller, D. and P. H. Friesen. *Organizations: A Quantum View*, Prentice-Hall, Englewood Cliffs, NJ, 1984.

Miller, D. and P. H. Friesen. 'Momentum and revolution in organizational adaptation', *Academy of Management Journal*, **22**, 1980, pp. 591–614.

Minsky, M. 'Frame-system theory'. In P.N. Johnson-Laird and P. C. Wason (eds), *Thinking*, Cambridge University Press, Cambridge, 1977, pp. 355–376.

Mintzberg, H. *The Nature of Managerial Work*, Harper and Row, New York, 1973.

Mintzberg, H. 'Patterns of strategy formation', *Man-*

agement Science, **24**, 1978, pp. 934–948.

Nelson, R. R. and S. G. Winter. *An Evolutionary Theory of Economic Change*, Cambridge University Press, Cambridge, MA, 1982.

Nutt, P. 'Types of organizational decision processes', *Administrative Science Quarterly*, **29**, 1984, pp. 414–450.

Nystrom, P. C. and W. H. Starbuck. 'To avoid organizational crises, unlearn', *Organizational Dynamics*, Spring, 1984, pp. 53–65.

Olivia, T. A., D. L. Day and I. C. MacMillan. 'A generic model of competitive dynamics', *Academy of Management Review*, **13**, 1988, pp. 374–389.

Pettigrew, A. M. *The Politics of Organizational Decision-Making*. Tavistock, London, 1973.

Pitt, M. and G. Johnson. 'Managing strategic change'. In G. Johnson (ed.), *Business Strategy and Retailing*. Wiley, Chichester, 1987.

Pondy, L. R. and A. S. Huff. 'Budget cutting in Riverside: Emergent policy reframing as a process of conflict minimization'. In L. R. Pondy, R. J. Boland, Jr. and H. Thomas (eds), *Managing Ambiguity and Change*, Wiley, New York, 1988, pp. 177–200.

Porter, M. E. *Competitive Strategy*, Free Press, New York, 1980.

Quinn, J. B. *Strategies for Change*, Irwin, Homewood, IL, 1980.

Rogers, E. M. *Diffusion of Innovations*, Free Press, New York, 1962.

Rumelt, R. P. 'Towards a strategic theory of the firm'. In R. Lamb, (ed.), *Competitive Strategic Management*, Prentice-Hall, Englewood Cliffs, NJ, 1984, pp. 556–570.

Schendel, D., G. Patton and J. Riggs, 'Corporate turnaround strategies', *Journal of General Management*, **3**, 1976, pp. 3–11.

Schon, Donald A. *Invention and the Evolution of Ideas*, Tavistock, London, 1967.

Schwenk, C. 'Cognitive simplification processes in strategic decision-making', *Strategic Management Journal*, **5**, 1984, pp. 111–128.

Schwenk, C. and M. Tang. 'Persistence in questionable strategies: Explanations from the economic and psychological perspectives', *OMEGA: International Journal of Management Science*, **17**, 1989, pp. 559–570.

Selznick, P. *Leadership in Administration*, Row, Peterson, Evanston IL, 1957.

Sheldon, A. 'Organizational paradigms', *Organization Dynamics*, **8**, 1980, pp. 61–71.

Simon, H. A. *Administrative Behavior* Macmillan Press, New York, 1945.

Sims, Jr., H. and D. Gioia (eds.). *The Thinking Organization*, Jossey-Bass, San Francisco, CA, 1986.

Slatter, S. *Corporate Recovery*, Penguin, Harmondsworth, 1984.

Smircich, L. and C. Stubbart. 'Strategic management in an enacted world', *Academy of Management Review*, **10**, 1985, pp. 724–736.

Spender, J.-C. *Industry Recipes: An Enquiry into the Nature and Sources of Managerial Judgement*, Blackwell, Oxford, 1989.

Sproull, L. S. and K. R. Hofmeister. 'Thinking about implementation', *Journal of Management*, **12**, 1986, pp. 43–60.

Stein, J. (ed.) *The Random House Dictionary of the English Language*, Random House, New York, 1966.

Thomas, H., 'Strategic decision analysis: Applied decision analysis and its role in strategic management', *Strategic Management Journal*, **5** (2) 1984, pp. 139–156.

Tushman, M. L., W. Newman and E. Romanelli. 'Technological discontinuities and organizational environments', *Administrative Science Quarterly*, **31**, 1986, pp. 439–465.

Tushman, M. L. and E. Romanelli. 'Organizational evolution', *Research in Organization Behavior*, **7**, 1985, pp. 171–222.

Van de Ven, A. H. 'Central problems in the management of innovation', *Management Science*, **32**, 1986, pp. 590–607.

Walsh, J. P. and G. R. Ungson. 'Organizational memory', *Academy of Management Review*, **16**, 1991. pp. 57–91.

Watzlawick, P., J.H. Weakland and R. Fisch. *Change*, Norton, New York, 1974.

Weick, K. E. *The Social Psychology of Organizing*, (2nd edn.), Addison-Wesley, Reading, MA, 1979.

Whetten, E. 'Organizational decline: A neglected topic in organizational science', *Academy of Management Review*, **5**, 1980, pp. 577–588.

Williamson, O. E. 'Transaction-cost economics: The governance of contractual relations', *Journal of Law and Economics*, **22**, 1979, pp. 233–260.

APPENDIX 1: TABLE OF TERMS

$S_i(t)$ — cumulative stress in State i at time (t)

$I_i(t)$ — cumulative inertia in State i at time (t)

a,b — rate parameters in stress and inertia functions $[S(t), I(t)]$ for the current strategy

$S_{ij}(t)$ — change in cumulative stress associated with a shift from State i to State j

$I_{ij}(t)$ — change in cumulative inertia associated with a shift from State i to State j

$P_{ij}(t)$ — the probability of shifting from State i to State j at time t

k — a constant that relates the probability of changing state to the length of time interval

$z(t)$ — the incremental amount of new stress experienced by the organization at time (t)

z — the magnitude of stress associated with each stressful event experienced by the organization

λ — Poisson parameter: the expected number of stressful events experienced by the organization during a unit interval of time

$\bar{S}$ — stress threshold based on past organization and industry experience

$\bar{I}$ — initial level of commitment to a new strategy

* — an alternative strategy

APPENDIX 2: SIMULATION DETAILS

Each simulation employs the same set of stressors, $z(t)$, which are generated by a Poisson process with $\lambda = 1.0$ and the stress associated with each stress inducing event set at $z = 0.20$. By assuming that the stream of stressful events impinging on the organization is generated by a Poisson process with parameter λ, we are simply saying that stressful events impinge on the organization in no predictable order or sequence; but on average, λ events will occur in a unit time interval (assumed to be 6 months). The stressors used in the simulated histories of strategic change are listed below:

t	Z(t)	t	Z(t)	t	Z(t)
(1)	0.0	(11)	0.2	(21)	0.4
(2)	0.2	(12)	0.2	(22)	0.2
(3)	0.2	(13)	0.0	(23)	0.2
(4)	0.2	(14)	0.8	(24)	0.2
(5)	0.0	(15)	0.0	(25)	0.0
(6)	0.0	(16)	0.0	(26)	0.6
(7)	0.4	(17)	0.4	(27)	0.0
(8)	0.4	(18)	0.0	(28)	0.2
(9)	0.2	(19)	0.2	(29)	0.2
(10)	0.4	(20)	0.2	(30)	0.2