

NPS-46-09-001



NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

**Dynamic Fit and Misfit through Organizational Design:
Conceptualization via Stability and
Maneuverability**

by
Mark E. Nissen

June 2009

Approved for public release; distribution is unlimited

Prepared for: Office of the Assistant Secretary of Defense – Networks and
Information Integration, 6000 Defense Pentagon, Washington, DC 20301-6000.

THIS PAGE INTENTIONALLY LEFT BLANK

NAVAL POSTGRADUATE SCHOOL
Monterey, California 93943-5000

Daniel T. Oliver
President

Leonard A. Ferrari
Executive Vice President and
Provost

This report was prepared for Office of the Assistant Secretary of Defense – Networks and Information Integration and funded by the Command and Control Research Program.

Reproduction of all or part of this report is authorized.

This report was prepared by:



Mark E. Nissen
Professor, Naval Postgraduate School

Reviewed by:

Released by:



Mark E. Nissen
Director, Center for Edge Power



Karl van Bibber
Vice President and
Dean of Research

THIS PAGE INTENTIONALLY LEFT BLANK

REPORT DOCUMENTATION PAGE			<i>Form Approved OMB No. 0704-0188</i>
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.			
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE June 2009	3. REPORT TYPE AND DATES COVERED Technical Report	
4. TITLE AND SUBTITLE: Title (Mix case letters) Dynamic Fit and Misfit through Organizational Design: Conceptualization via Stability and Maneuverability		5. FUNDING NUMBERS DSAM 90387 DWAM 80013 DWAM 90215	
6. AUTHOR(S) Mark E. Nissen			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000		8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES) Office of the Assistant Secretary of Defense – Networks and Information Integration, 6000 Defense Pentagon, Washington, DC 20301-6000		10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this report are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.			
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited		12b. DISTRIBUTION CODE	
13. ABSTRACT (maximum 200 words) <i>Fit</i> represents a central concept for organizational Contingency Theory, but most research maintains a static focus, neglecting that contingencies—and hence the corresponding organizational designs required for fit—are dynamic. Further, with multiple, often conflicting contingency factors—reflecting both endogenous and exogenous origins—in a set changing through time, organizations are likely to spend much of their time in conditions of <i>misfit</i> . This highlights the importance of research focusing on the magnitude and difficulty of correcting misfits over time. However, the dynamics of fit and misfit are not addressed well by extant organization and management theory. In this article, we extend Contingency Theory through conceptualization of <i>dynamic organizational fit</i> and <i>misfit</i> and reveal key organizational design implications. We begin with a focused summary of the literature regarding the nature of dynamic fit and then draw from the engineering field of Aerodynamics to inform our conceptualization in terms of stability, maneuverability and opportunity loss. This work enables us to develop and outline a conceptual model and to articulate a set of propositions and measures that form a basis for empirical testing. This work also reveals important organizational design tradeoffs and implications regarding dynamic fit, and it shows how such conceptualization can elucidate new insights via comparison with and extension to extant theory.			
14. SUBJECT TERMS Contingency Theory, dynamics, fit, organizational design		15. NUMBER OF PAGES 45	
		16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT

THIS PAGE INTENTIONALLY LEFT BLANK

ABSTRACT

Fit represents a central concept for organizational Contingency Theory, but most research maintains a static focus, neglecting that contingencies—and hence the corresponding organizational designs required for fit—are dynamic. Further, with multiple, often conflicting contingency factors—reflecting both endogenous and exogenous origins—in a set changing through time, organizations are likely to spend much of their time in conditions of *misfit*. This highlights the importance of research focusing on the magnitude and difficulty of correcting misfits over time. However, the dynamics of fit and misfit are not addressed well by extant organization and management theory. In this article, we extend Contingency Theory through conceptualization of *dynamic organizational fit* and *misfit* and reveal key organizational design implications. We begin with a focused summary of the literature regarding the nature of dynamic fit and then draw from the engineering field of Aerodynamics to inform our conceptualization in terms of stability, maneuverability and opportunity loss. This work enables us to develop and outline a conceptual model and to articulate a set of propositions and measures that form a basis for empirical testing. This work also reveals important organizational design tradeoffs and implications regarding dynamic fit, and it shows how such conceptualization can elucidate new insights via comparison with and extension to extant theory.

THIS PAGE INTENTIONALLY LEFT BLANK

I. INTRODUCTION

For more than a half century, *fit*—which Donaldson (2001) defines as a match “... between the organization structure and contingency factors that has a positive effect on performance” (pp. 7-10)—has been a central concept for organizational Contingency Theory. Beginning with seminal works by Burns and Stalker (1961), Woodward (1965), Lawrence and Lorsch (1967) and others, organization and management theory has been guided by the understanding that no single approach to organizing is best in all circumstances. Lawrence and Lorsch (1986) indicate that the “general notion of fit have become almost axiomatic” (p. xii) in modern studies of organization.

Moreover, myriad empirical studies (e.g., Argote, 1982; Donaldson, 1987; Hamilton & Shergill, 1992; Keller, 1994; cf. Mohr, 1971; Pennings, 1975) have confirmed and reconfirmed that poor organizational fit degrades performance, and many diverse organizational structures (e.g., Functional, Decentralized, Mixed, see Duncan, 1979), forms (e.g., Bureaucracy, see Weber & Parsons, 1947; M-Form, see Chandler, 1962; Network, see Miles & Snow, 1978; Clan, see Ouchi, 1980; Virtual, see Davidow & Malone, 1992; Platform, see Ciborra, 1996), configurations (e.g., Machine Bureaucracy, Simple Structure, Professional Bureaucracy, Divisionalized Form, Adhocracy, see Mintzberg, 1979) and other groupings¹ have been theorized to enhance fit. Quite simply, fit is a central concept in contingency theory and organization studies.

Indeed, organization and management scholars have come to understand well how various organizational forms are and should be designed and changed to fit specific contingency contexts. For instance, *organizational environment* is a fundamental contingency factor for organizational design (Burns & Stalker, 1961; Galbraith, 1973; Galbraith, 1977; Harvey, 1968), with alternate environmental characteristics (e.g., *complexity, change*) related contingently with different organizational structures (e.g., *Functional, Decentralized*, see Duncan, 1979). Among others, *organizational technology* has been studied extensively as a powerful contingency factor also (Litwak, 1961; Pugh, Hickson, Hinings, & Turner, 1969; Woodward, 1965), with alternate technological characteristics (e.g., *task variability, problem analyzability*) related contingently with different organizational forms (e.g., *Craft, Engineering*, see Perrow, 1970).

Particularly through the early phases of this research, the concept *organizational fit* has been treated in a unidimensional manner for the most part; that is, the early concept has been limited largely to describing fit between a specific organizational structure (e.g., Functional or Divisional) and a single contingency factor (e.g., *organizational environment*). However, scholars have identified an array of multiple contingency factors (e.g., age, environment, size, strategy, technology), which are

¹ As a note, although we recognize differences in meaning between terms such as *organizational structure, form, configuration* and others (Doty, Glick, & Huber, 1993; Meyer, Tsui, & Hinings, 1993; Payne, 2006), unless the specific meaning is important to our argument, in this article we use them interchangeably for the most part.

often conflicting (Gresov, Drazin, & Van de Ven, 1989), and which must be addressed, *simultaneously*, as a multicontingency set (Gresov & Drazin, 1997).

Further, building recently upon such research, Burton et al. (2006) identify 14 contingency factors (e.g., *goal, strategy, environment*) that an organization must address in an integrated manner, and they explain how the specific contingency set facing a given organization can be expected to *change through time*; that is, the contingency context of organizational design is not static. Contingencies—and hence the corresponding organizational designs required for fit—are dynamic. However, most research on Contingency Theory maintains an incommensurate, static focus (Burton, Lauridsen, & Obel, 2002; Zajac, Kraatz, & Bresser, 2000).

Additionally, assessing fit in such dynamic context is challenging. With multiple contingency factors in a set to address simultaneously, the organization design task is more complex, and it becomes increasingly difficult to prescribe a single organizational form deemed to be most appropriate in the context of the whole set of factors. Although equifinality considerations (Drazin & Van de Ven, 1985; Eisenhardt & Martin, 2000; Gresov & Drazin, 1997) suggest that different organizational forms may lead to equivalent performance under the same contingency set, this does not imply that *any* form will do; some combinations of contingency sets and organizational forms are likely to outperform others.

Moreover, with multiple contingency factors in a set changing through time, it becomes increasingly unlikely that any specific set of contingency factors will remain static for long. Hence organizations are likely to spend much of their time in conditions of *misfit* (Burton et al., 2006). However, most research on Contingency Theory is limited in focus on establishing and maintaining fit. Such focus does not provide clear guidance for whether the time and cost required for organizational redesign are worthwhile to address a given severity of misfit, for instance, or whether a particular organization would be better off by simply trying to endure the misfit. Research that focuses instead on the magnitude and difficulty of correcting misfits may reflect a more realistic consideration of organizational design and change.

In addition to exogenous causes of organizations falling out of fit, such as environmental shocks, technological shifts and regulatory changes (Eldredge & Gould, 1972; Gersick, 1991; Romanelli & Tushman, 1994), conditions of misfit can obtain endogenously as well, such as through strategic choice (Child, 1972; Govindarajan, 1986; Hambrick, 1983), cultural change (Deshpande & Webster, 1989) and management intervention (Covin & Slevin, 1989; Doty et al., 1993). Not only must management attempt to match the best fitting organizational form to the particular contingency set that obtains at any given point in time (i.e., seeking the best static fit at each time period), it must attempt to forecast the contingency sets likely to obtain at future times, identify the corresponding best future organizational designs, and maneuver the organization over time (i.e., seeking to obtain the best dynamic fit across time periods). Hence *time* emerges as a central concept—one that is not addressed well by extant theory (Burton et al., 2002; Zajac et al., 2000).

Also, as equilibria are punctuated with increasing frequency (Peteraf & Reed, 2007)—or even more demanding, as dynamic, multicontingency contexts move toward continuous, unpredictable change (Lengnick-Hall & Beck, 2005)—seeking to

establish and maintain static fit may even prove to represent an inferior strategy (Pant, 1998; Westerman, McFarlan, & Iansiti, 2006). Yet establishing and maintaining static fit represents a centerpiece of Contingency Theory as we know it.

In this article, we extend Contingency Theory through conceptualization of *dynamic organizational fit* and *misfit*—articulating an approach to assess fit and misfit in dynamic, multicontingency contexts—and reveal key organizational design implications. To ground this discussion in extant theory, we begin with a focused summary of the literature regarding the nature of dynamic fit. We then draw from the engineering field of Aerodynamics to inform our conceptualization in terms of stability, maneuverability and opportunity loss. This work enables us to develop and outline a conceptual model and to articulate a set of propositions and measures that form a basis for empirical testing. This work also reveals important organizational design tradeoffs and implications regarding dynamic fit, and it shows how such conceptualization can elucidate new insights via comparison with and extension to extant theory.

THIS PAGE INTENTIONALLY LEFT BLANK

II. BACKGROUND

Various aspects of dynamic fit have been considered in different ways for several decades and through multiple theoretical perspectives. As one stream of relevant research, population ecologists (Hannan & Freeman, 1977; Hannan & Carroll, 1995; McKelvey, 1982) have argued that some organizational populations (e.g., consider select organizational forms) are suited inherently better for certain ecologies (e.g., consider environments) than others are. Further, forces of *adaptation* (e.g., organizational variation, selection and retention) work to preserve the populations exhibiting better fit and hence to alter the composition of organizational ecologies over time (e.g., with some populations destined to survive and others destined to fail).

With this ecological view (Van de Ven & Poole, 1995), the dynamics of fit are deemed to manifest themselves via interactions between populations and their ecologies, over relatively long periods of time, and are insulated in large part from management influence; that is, most managers in relatively poor-fitting organizations are destined to see their organizations fail, whereas those in relatively well-fitting counterparts are destined to see theirs succeed. This perspective includes negligible opportunity for managerial intervention to address situations of misfit (Scott, 2003).

Alternatively, most contingency theorists maintain a teleological view (Van de Ven & Poole, 1995): they see management in goal pursuit, taking action to adjust organizational structure in order to establish or re-establish fit. For instance, Burns and Stalker (1961) suggest that organizations in misfit are expected to modify their structures to move into fit with their environments or other contingencies. This suggests that organizational designs must change longitudinally (i.e., via managerial intervention) in response to exogenous shifts (e.g., in the environment) that cause an organization to fall out of fit. Further, as noted above, organizational misfit can occur endogenously as well (e.g., through strategy change). For instance, in discussing a contingent, dynamic linkage between organizational strategy and structure, Donaldson (1987) describes how changes in strategies can produce misfits with organizational structures and calls for structural adaptation to regain fit over time (again via managerial intervention).

Similarly, set largely within a technological, information systems context, Sabherwal et al. (2001) embrace the punctuated equilibrium model (Eldredge & Gould, 1972; Gersick, 1991) to assess the alignment between strategy and structure, and they suggest that a dynamic re-alignment pattern may persist over long periods of time. Likewise, Romanelli and Tushman (1994) embrace punctuated equilibrium also, suggesting that the large majority of organizational transformations take place via rapid, discontinuous, management-induced change. Peteraf and Reed (2007) argue further how dynamic fit represents an important managerial capability for organizational change, highlighting in an argument against population ecology that fit trumps best practice. Moreover, organizational change to establish or re-establish fit can take considerable time (Pant, 1998).

Hence, in this dynamic view that considers lag time, in order to bring an organization into fit with a future and changing environment, managers must anticipate not only the environmental change but the organization's resistance to and time required to effect

change. Similarly, Westerman et al. (2006) discuss how organizational designs that fit well with “early” strategic contingencies (e.g., in the early part of the innovation life cycle) can fall into natural misfit with “later” ones. They go farther by suggesting a tension between managerial approaches, one that requires some assessment of tradeoffs in this dynamic context: either seek to minimize the negative effects of misfit situations or seek to undertake timely organizational change. Burton et al. (2006) address change over time as a sequence of static changes.

Throughout this literature, the normative prescription remains that organizations should strive to maintain fit through time. However, across these contingency theory perspectives, the fit concept is viewed as relatively static in most cases: an organizational structure may fall out of fit—whether exogenously (e.g., because of environmental change) or endogenously (e.g., by deliberate managerial action)—at some point in time and then undergo change in attempt to re-establish fit at some other point in time.

This is analogous to equilibrium models from economics, in which analysis of even shifting supply and demand is made only at conditions of static equilibrium. In our organizational context, environments, strategies and other contingencies may shift periodically, and organizational structures may be changed in either anticipation or response, but the analysis focuses on preserving or regaining static fit in some kind of (punctuated) equilibrium context. Zajac et al. (2000) argue, however, that such emphasis on static fit is inadequate for longitudinal understanding and that examining dynamic fit can inform strategic change. They cite the need for both conceptual and methodological tools to assess and predict strategic and organizational fit with changing environments and organizations.

As one promising approach, Tushman and O’Reilly (1999) discuss ambidextrous organizations, which are able to operate simultaneously in multiple modes. For instance, an organization may take a relatively short-term focus on efficiency and control—essentially striving to exploit current organization and capabilities—while simultaneously taking a relatively long-term focus on innovation and risk taking—essentially striving to explore future organization and opportunities. They describe how an organization may even adopt multiple, inconsistent architectures or structures to pursue this approach. This is analogous to the equilibrium model in economics also, in which decisions and behaviors are made and examined over different timeframes (esp. short-term and long-term). For instance, in the short-term, a great many economic factors of interest (e.g., costs, capabilities, supply) are fixed, but over the long-term, they become variable. Nonetheless, in our organizational context, both the short-term and long-term foci (i.e., both exploitation and exploration) concern static fit: current exploitation fits current contingencies, and future exploration fits future contingencies.

As another promising approach, Lengnick-Hall and Beck (2005) contrast the notion of adaptive fit—essentially shifting from one static-fit context to another over time—with robust transformation: “a deliberately transient, episodic response to a new, yet fluid equilibrium” (p. 742). In this view, there is no presumption that specific environmental conditions will move to equilibrium; hence organizational structures cannot be changed to achieve static fit. This represents a departure from most of the contingency research on fit and reinforces the idea that organizations spend most if not all of their time in conditions of misfit.

This view builds upon Brown and Eisenhardt (1997), who argue that continuous change represents a more appropriate perspective than punctuated equilibrium does. It also acknowledges the kinds of hypercompetitive (see D'Aveni, 1994; Hanssen-Bauer & Snow, 1996; cf. McNamara, Vaaler, & Devers, 2003) and high-velocity environments that are in perpetual flux (Eisenhardt & Tabrizi, 1995) and the kinds of nonlinear, dynamic environmental patterns that never establish equilibrium (Levy, 1994; Stacey, 1995).

This applies to dynamic equilibrium as well as its static counterpart. For instance, Perez-Nordvedt et al. (in press) address dynamic fit using entrainment as the organizing concept. Presuming that contingency factors shift through time in cycles, they argue that one can assess fit over time in terms of synchronization with such cycles. Misfit over time can be viewed as asynchronization in either phase or tempo or both. This is essentially a dynamic equilibrium argument; that is, the equilibrium stems from following the cycles as opposed to maintaining a fixed point. Where the dynamics of contingency factors do not follow cyclical patterns, however, the magnitude and duration of misfit conditions may be more relevant than synchronization.

Lengnick-Hall and Beck also introduce the approach *resilience capacity*, which implies a capability to recognize where objectives such as responsiveness, flexibility and an expanded action repertoire are relatively more appropriate than seeking higher levels of fit over time is, along with the capability to select and enact the corresponding routines. This is comparable in focus to that corresponding to Edge organizations (Alberts & Hayes, 2003; Gateau, Leweling, Looney, & Nissen, 2007), which emphasize *agility* across multiple, unpredictable environments, as opposed to current or adaptive performance in any specific contingency context. Similarly, Brown and Eisenhardt (1997) suggest that organizational semistuctures, capable of balancing order and flexibility, provide a superior approach to highly dynamic environments.

The dynamic capabilities approach (Teece, Pisano, & Shuen, 1997) focuses on the ability of an organization to achieve new forms of competitive advantage (e.g., appropriate in shifting environmental conditions) and prescribes capabilities such as timely responsiveness, rapid and flexible product innovation, and the management capability to coordinate and redeploy resources as key. Important in this approach is the concept *path dependence*: the options available to an organization depend upon past choices and events.

Eisenhardt and Martin (2000) augment this discussion by relating dynamic capabilities explicitly to organizational processes (e.g., product development, alliancing, decision making) and indicating how *market dynamism* influences one's approach to organizing; that is, consistent with Duncan's (1979) model, dynamism of the environment (e.g., markets in this case) represents an important contingency for consideration. In what they term "very dynamic" and "high velocity markets" (p. 1111), different dynamic capabilities (e.g., processes such as rapid prototyping and early testing, real-time information and pursuit of multiple, parallel options) are required than in their "moderately dynamic" counterparts. As with robust transformation, multiple repertoires and scripts are called for, and this approach discusses trying to balance competing effects of organizing with more versus less structure: "... if there were no structures, the processes would fly out of control ..." (p. 1112).

Many of the diverse terms, concepts and relationships from the literature summarized above are addressed in a substantial, mature and coherent body of theory and corresponding analytical techniques within the engineering field of Aerodynamics. For instance, *high velocity, flux, nonlinear patterns, responsiveness, agility, dynamic environments, balancing, path dependence, control, inertia* and like terms are integrated through a concise and precise language and system of concepts, definitions and interrelationships that are coherent, internally consistent and supported by voluminous empirical verification and calibration across myriad domains.

This provides a contrast to the terms and associated conceptualizations summarized above, which—although they exhibit cumulative knowledge associated with quality research and publication—are largely accretive and not nearly as coherent, internally consistent and empirically supported. Further, Aerodynamics includes many concepts and interrelationships that have yet to be introduced into the contingency theory literature, some of which may prove to be useful for our conceptualization of dynamic organizational fit.

The situation leads us to examine how we might draw from such concise and precise language and system to inform our conceptualization. To the extent that Aerodynamics offers a coherent language and set of terms, we seek to adapt them as an integrated whole, understanding that doing so may cause some difficulties by introducing multiple “new” terms into the contingency literature. However, by importing the language as well as the terms (e.g., consider learning a new grammar as well as new words), we stand to gain a kind of concision, precision and coherence that is absent from extant Contingency Theory in the area of dynamic fit. Where possible we attempt to relate several “new” terms to existing contingency theory concepts, and we purposefully draw in only the most applicable aspects of Aerodynamics, so as to limit the number of such terms.

III. AERODYNAMICS CONCEPTS AND ORGANIZATION ANALOGS

Aerodynamics (Houghton & Carruthers, 1982) concerns the motion of systems designed for flight (e.g., airplanes), most of which are highly dynamic, controlled systems; that is, the systems themselves reflect inherent dynamic capabilities (e.g., speed, stability, maneuverability) that are designed in, but they receive directional inputs (esp. from pilots) during flight (e.g., taking off, climbing, turning). Airplane designers analyze the intended uses (e.g., family recreation, passenger transportation, military combat) and expected environments (e.g., clear weather, turbulent storms, hostile airspace) to balance design characteristics and capabilities in a way that produces the best expected performance at the lowest likely cost. As such, airplanes are designed deliberately to fit their intended uses (e.g., commercial aircraft vs. fighters) and expected environments (e.g., extreme weather vs. enemy fire), and different designs are required to fit different use-environmental contexts.

Airplanes are not organizations, but they correspond as systems with differing characteristics and capabilities that are designed in to achieve goals. To be viable, airplanes should be able to maintain desired velocity, direction and altitude and not crash; organizations should be able to maintain desired production rate, market focus and profit level and not go bankrupt. A correspondence between airplane and organizational design suggests that different organizational forms (i.e., designs) reflect inherent dynamic capabilities (e.g., efficiency, robustness, adaptability), and they receive directional inputs (esp. from managers) during operations (e.g., developing new products, managing supply chains, forming alliances). Organizational designers analyze the intended objectives (e.g., charity distribution, government service, shareholder return) and expected environments (e.g., generous giving, economic recession, hypercompetitive markets) to balance design characteristics and capabilities in a way that produces the best expected performance at the lowest likely cost. As such, organizations are designed deliberately to fit their expected objectives and environments, and different designs are required to fit different objective-environmental contexts. This is a central premise of organization Contingency Theory.

The aerodynamics concepts that are most relevant to our conceptualization of dynamic fit are *stability* and *maneuverability*, for they emphasize the importance of time and fit in a dynamic context. We discuss each concept in turn and then address important stability-maneuverability design tradeoffs and the moderating role of management. The section concludes with a conceptual model, and we summarize research propositions throughout the section as they arise naturally from the discussion. Although theoretical in focus, such propositions provide guidance and a basis for empirical testing.

A. STABILITY

Airplane stability has two elements: static stability and dynamic stability. It is useful to begin with static stability before turning to its dynamic counterpart.

1. Static Stability

With considerable simplification of aerodynamic theory, we annotate Figure 1 to delineate the dynamic trajectory of an airplane (i.e., “Airplane A”) in terms of altitude (in kilometers) over time. The eight circular plot points in the figure delineate the airplane’s altitude as it flies. Beginning with level flight at the goal altitude of 4 km, the figure depicts a disruption (e.g., wind shift) that changes the airplane’s altitude from the goal to the 3 km level. This altitude change from goal can be viewed as a 1 km performance deviation. *Static stability* characterizes how resistant airplane performance is to environmental disruptions.

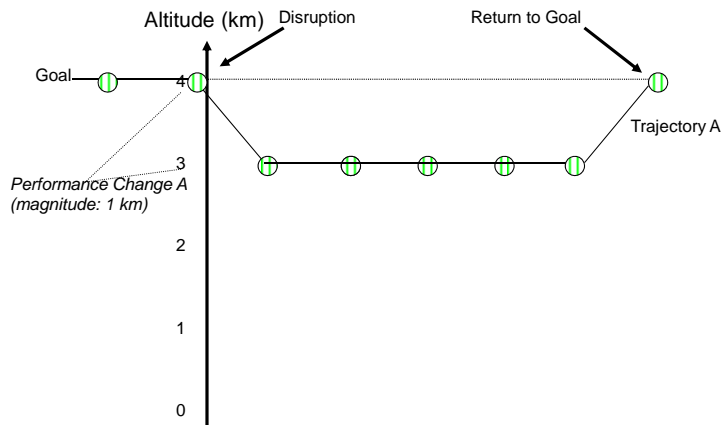


Figure 1 Airplane A Trajectory

In this example the magnitude of altitude change (i.e., 1 km performance deviation) provides a basis for comparison with the static stability of other airplane designs. An airplane that experiences less altitude change from a particular disruption can be said to reflect greater static stability than an airplane which moves more (and vice versa). Indeed, an *ideal system* (e.g., perfectly stable airplane) would experience no altitude change from the disruption and hence not spend any time away from the goal. The horizontal dotted line in Figure 1 depicts how the trajectory of a perfectly stable airplane would remain at the 4 km altitude level and experience no performance deviation. The 1 km altitude change experienced by Airplane A reflects less static stability than that of an Ideal System.

In terms of organizations, the performance deviation associated with airplane static stability is analogous to the manner in which many scholars characterize the converse of organizational fit (Donaldson, 2001): “misfit produces a negative effect on organizational performance” (p. 14). Misfit is a deviation from the ideal or goal state and provides a basis for comparing the

relative misfit of other organizations. An organization with greater performance deviation (e.g., from environmental disruption) is in greater misfit than one with lesser deviation. The organization and management literature is replete with prescription to lessen and minimize performance deviation. This gives rise to our first research propositions.

Proposition 1a. The literature is replete with reasoning, concepts and recommendations on how to obtain fit using a static stability criterion.

Proposition 1b. Most operational organizations in practice exhibit designs biased toward static stability.

The first proposition indicates that our theoretical notions capture static stability well and is the principle criterion to define our notion of fit. This is a statement about our concepts. The second proposition is a statement about the implementation of those concepts in operational organizations. In practice, the static stability criterion is an ideal candidate for fit and guides managers to achieve fit as a desirable state.

With this we are able to assess the *degree of misfit* in terms of magnitude of performance deviation. This goes beyond the most common, binary measure of fit-misfit—either an organization is in a condition of fit or not (Burton et al., 2002)—and provides a means to measure the comparative fit of different organizations. With this we also establish a correspondence between misfit and *organizational* static stability in terms of performance deviation: the greater the static stability of an organization, the lesser the misfit it experiences in terms of performance deviation. This gives rise to our second research propositions.

Proposition 2a. A statically stable organization will experience less performance deviation from environmental disruption, at a given point in time, than a statically unstable organization will.

Proposition 2b. The degree of static misfit associated with an organization can be quantified by the magnitude of performance deviation it experiences with respect to the performance of an Ideal Organization.

Further, analogous to the ideal system concept from Aerodynamics above, an *ideal organization* (e.g., perfectly fit organization) would exhibit no misfit and hence not spend any time away from the goal. The horizontal dotted line in Figure 2 depicts how the trajectory of a perfectly fit organization would remain at a goal level (e.g., in terms of a \$4B profit level) and experience no performance deviation. The \$1B profit decline experienced by Organization A reflects greater misfit than that of an Ideal Organization.

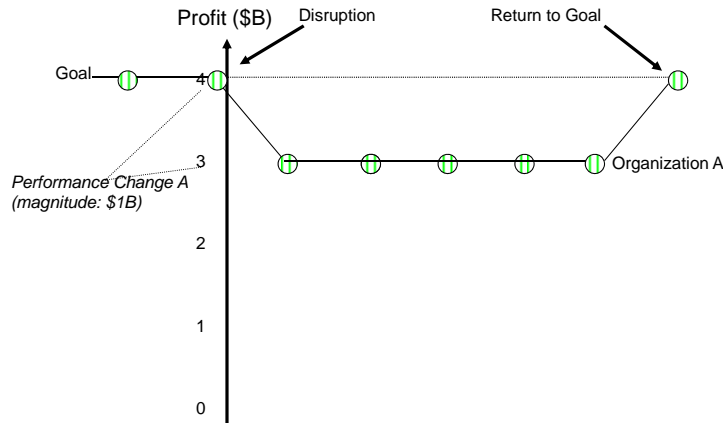


Figure 2 Organization A Trajectory

2. Dynamic Stability

Notice that airplane static stability as reflected in Figure 1 does not take into account the time in flight spent at an altitude below the 4 km goal. As a static concept, it is insensitive to how quickly the airplane returns to its goal altitude: it addresses the magnitude of performance deviation but does not address time. The same applies to organization static stability reflected in Figure 2: it is insensitive to how quickly the organization returns to its goal altitude, and it addresses the magnitude of performance deviation but does not address time.

In contrast, as depicted in Figure 3, *dynamic stability* represents both the magnitude and duration of performance deviation (i.e., $1 \text{ km} \times 5 \text{ t} = 5 \text{ kmt}$ altitude change for Airplane A) and characterizes both how much and how long system performance is affected by the disruption: it measures explicitly how quickly the system returns to its goal altitude as well as the extent of altitude change. As above, the combined magnitude and duration of performance deviation provides a basis for comparison with the dynamic stability of other airplane designs. For a given altitude change from a particular disruption, an airplane that spends less time away from the goal can be said to reflect greater dynamic stability. Likewise, for a given period of time away from the goal, an airplane that experiences less altitude change from a particular disruption can be said to reflect greater dynamic stability. When viewed in comparison with an ideal system (e.g., the horizontal line at goal altitude in Figure 3), dynamic stability can be measured as the area between the ideal and focal system trajectories; the greater the area, the less the dynamic stability and vice versa.

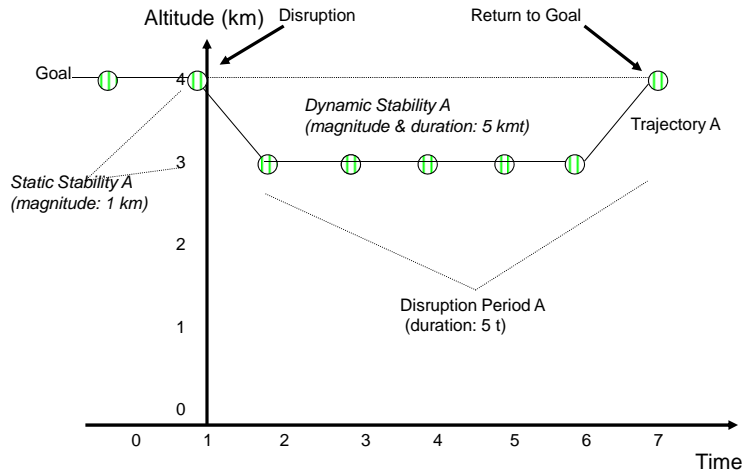


Figure 3 Airplane A Dynamic Stability

In terms of organizations, the dynamic stability concept incorporates *time* explicitly into our conceptualization of fit and misfit. Most directly, we can characterize dynamic misfit in terms of the combined magnitude and duration of an organization's performance deviation from the goal. When viewed in comparison with an ideal organization, dynamic misfit can be measured as the area between the ideal and focal organization trajectories; the greater the area, the less the dynamic fit or the greater the dynamic misfit. (The same area can be either small for a long time, or large for a short time; this will become important later on.)

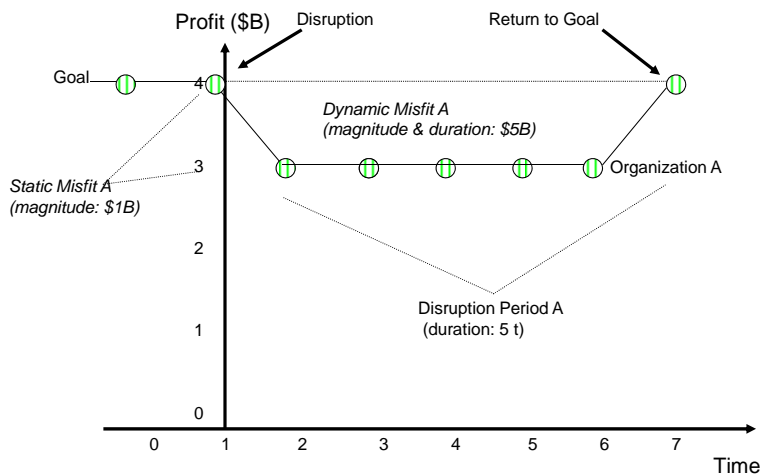


Figure 4 Organization A Dynamic Fit and Misfit

Figure 4 illustrates this conceptualization with a comparison of trajectories between an ideal organization (i.e., represented by the horizontal dotted line with no performance deviation from the \$4B goal profit level) and that of Organization A. This graphic is identical to Figure 2 above, except we label the static and dynamic misfit explicitly for Organization A. Specifically, we show static misfit as the magnitude of performance deviation (\$1B) associated with the environmental disruption at Time 1 and dynamic misfit as the area between the ideal and focal organizations' performance trajectories (i.e., combined magnitude and duration of deviation; $\$1B \times 5 = \$5B$). As in the static case above, the horizontal dotted line in Figure 4 depicts how the trajectory of a perfectly fit organization would remain at a goal level (e.g., in terms of a \$4B profit level) and experience no performance deviation for all seven time periods. The \$5B opportunity loss experienced by Organization A reflects greater dynamic misfit than that of an Ideal Organization. This gives rise to our third research propositions.

Proposition 3a. A dynamically stable organization will experience less performance deviation from environmental disruption, through time, than a dynamically unstable organization will.

Proposition 3b. The degree of dynamic misfit, and opportunity loss, associated with an organization can be quantified by the magnitude and duration of performance deviation it experiences with respect to the performance of an Ideal Organization.

B. MANEUVERABILITY

As above, we annotate Figure 5 to delineate the dynamic trajectory of Airplane A in terms of altitude over time but here to illustrate the concept *maneuverability*. A goal change (e.g., to avoid colliding with another airplane) at Time 1 changes the airplane's desired altitude from 1 km to the 4 km level, and every altitude below the new 4 km goal can be viewed as a performance deviation that persists until the new goal is reached (e.g., six time periods for Airplane A).

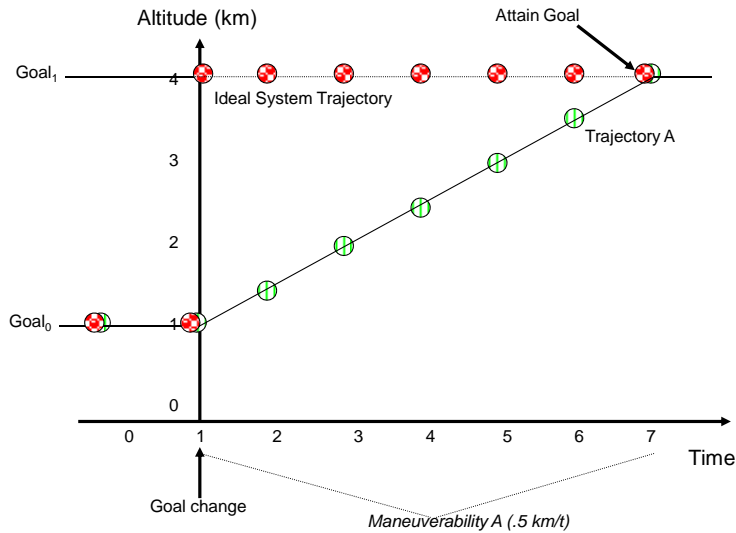


Figure 5 Airplane A Maneuverability

Maneuverability in this example represents the magnitude of altitude change that an airplane can make per unit time: the more maneuverable that an airplane is, the greater change in altitude it can make in a given amount of time, or the less time it requires for a given change in altitude. As depicted in the figure, the maneuverability of Organization A (i.e., .5 km/t) reflects its ability to increase altitude by half a kilometer in each time period. Unlike our stability examples above, where the airplane trajectory is disrupted externally, here we are examining what can be done purposefully to an airplane (e.g., change altitude).

Indeed, an *ideal system* (e.g., perfectly maneuverable airplane) would make the change in altitude immediately and hence not spend any time away from the new goal. This is depicted by the Ideal System Trajectory delineated in the figure; the Ideal System stays at the 1 km goal altitude through Time 1, after which it increases to the new 4 km goal immediately after the goal change. The triangular area between the Ideal System and Airplane A trajectories depicts the combined magnitude and duration of performance deviation from the new 4 km goal altitude and bears close correspondence to the area measure associated with dynamic misfit above.

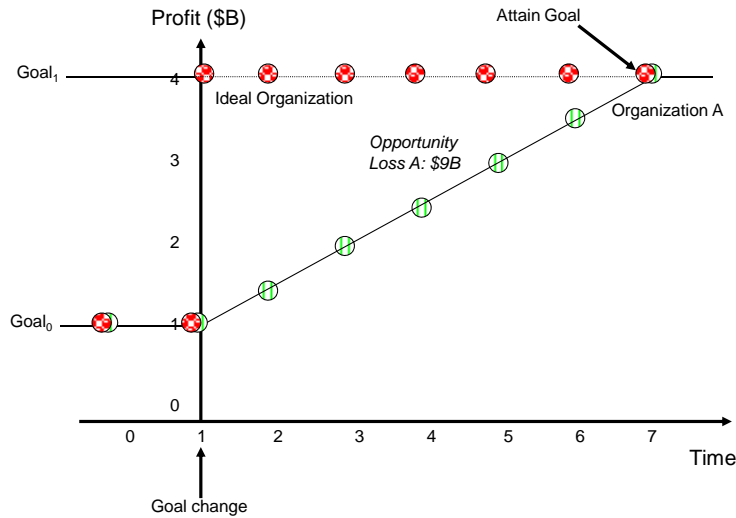


Figure 6 Organization A Opportunity Loss

In terms of organizations, much of our discussion above summarizes research highlighting the need to change quickly (e.g., to seize new market opportunities, time-based competition to launch new products, gain competitive advantage in high-velocity environments). When an organization is able to change quickly, for instance to pursue an emergent strategic opportunity, it can ameliorate opportunity loss. In this sense, the organization is in a misfit condition until it reaches the new goal; this is the case even though the misfit is caused endogenously (e.g., via management action).

Consider the maneuverability of organization A with its trajectory depicted in Figure 6 along with that of the corresponding ideal organization. In this comparison, Organization A requires six time periods to respond to a goal change (e.g., strategy shift) at Time 1. In comparison with the ideal organization trajectory—which reflects perfect maneuverability—the triangular loss area for Organization A is \$9B. The \$9B opportunity loss experienced by Organization A reflects lesser maneuverability than that of an Ideal Organization. This gives rise to our fourth research propositions.

Proposition 4a. A maneuverable organization will be able to change its design more quickly in response to strategy change than an unmaneuverable organization will, thus incurring less opportunity loss.

Proposition 4b. The degree of opportunity loss, and dynamic misfit, associated with an organization's response to strategy change can be quantified by the magnitude and duration of performance deviation it experiences with respect to the performance of an Ideal Organization.

C. STABILITY-MANEUVERABILITY TRADEOFFS

An important tradeoff in aircraft design exists between stability and maneuverability. The tradeoff obtains because design aspects that contribute to aircraft stability (e.g., size, front loading of mass, rear concentration of pressure) degrade maneuverability and vice versa. In terms of organizations, an analogous design tradeoff would imply that highly stable organizations would not be particularly maneuverable and vice versa. The implication is that, when designing an organization to produce consistent results through environmental disruptions (i.e., emphasizing static stability), for instance, management would have to sacrifice some capability for rapid organizational change (i.e., de-emphasizing maneuverability). Likewise, when designing an organization to enable rapid change (i.e., emphasizing maneuverability), as a counter instance, management would have to sacrifice some capability for robust performance (i.e., de-emphasizing static stability). This gives rise to our fifth research propositions.

Proposition 5a. A stable organization will: 1) be less maneuverable, 2) unable to change its design more quickly in response to strategy change, and 3) reflect more opportunity loss associated with an organization's response to strategy change, but 4) reflect lesser static misfit than an unstable organization will.

Proposition 5b. A maneuverable organization will: 1) be more unstable, and 2) reflect greater static misfit, but 3) be able to change its design more quickly in response to strategy change, and 4) reflect less opportunity loss associated with an organization's response to strategy change than an unmaneuverable organization will.

D. MANAGEMENT ROLE

Leveraging the fundamental tradeoff noted above, in today's Aerodynamics we note the counterintuitive trend in which modern aircraft are designed intentionally to be inherently *unstable*: unstable design enhances maneuverability. The problem is, of course, that such unstable yet maneuverable aircraft are exceptionally difficult to control—indeed beyond the ability of human pilots. It is only through the active assistance of computer flight control systems that such aircraft can be flown at all.

In terms of organizations, substantial research addresses the role of management in balancing organizational flexibility with control (Brown & Eisenhardt, 1997; Eisenhardt & Martin, 2000; Kauffman, 1995) through advanced information technology such as real-time information, forecasting, marketing, product design, supply chain management (Sabherwal et al., 2001). Organizational instability through design, combined with analogous “flight control” management processes and information technology, may lead to greater maneuverability and may be essential for highly maneuverable organizations to be controlled at all. This gives rise to our sixth research propositions.

Proposition 6a. A maneuverable organization must be designed to be unstable but can be controlled more effectively with advanced management practices and information technologies than maneuverable organizations without such practices and technologies.

Proposition 6b. The comparative opportunity loss, and dynamic misfit, associated with a maneuverable organization's use of advanced management practices and information technologies can be quantified by the magnitude and duration of performance deviation it experiences with respect to the performance of the same organization without such practices and technologies.

E. CONCEPTUAL MODEL

At this point in the discussion, we have sufficient conceptual grist and organizational analogs to outline a basic conceptual model that reflects the research propositions summarized above. Briefly, the concepts and relationships between *static stability*, *dynamic stability*, *maneuverability* and *management* are diagrammed as boxes and arrows in Figure 7. To summarize: Static stability limits static misfit (e.g., due to environmental disruption); such results could pertain to maintaining consistent profits or market share for an organization. Static stability also affects dynamic stability; the same magnitude of performance deviation applies to both concepts.

However, dynamic stability incorporates time (e.g., duration of performance deviation) and limits dynamic misfit (e.g., quick recovery from disruption); such results could pertain to quick recovery from a product recall or lawsuit for an organization, for instance. Maneuverability limits opportunity loss (e.g., via rapid organizational change); such results could pertain to redesigning an organization rapidly and repeatedly. Maneuverability and dynamic stability also mutually inhibit one another; the more maneuverable an organization, the less stable and vice versa. Management and technology can moderate the mutually inhibiting effects of maneuverability and stability; such moderation could pertain to keeping a highly flexible organization from becoming chaotic or to increasing the agility of a highly stable organization, for instance.

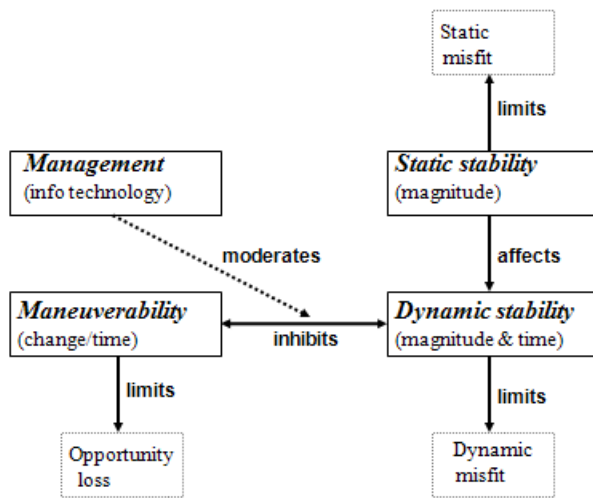


Figure 7 Conceptual Model

In addition to the propositions reflected by the conceptual model and summarized above, some additional, noteworthy research propositions emerge from our review of the literature as well. In particular, we note in the introductory section how Burton et al. (2006) identify 14 contingency factors (e.g., *goal, strategy, environment*) that an organization must address in an integrated manner, and how the specific contingency set facing a given organization can be expected to change through time, suggesting that organizations are likely to spend much of their time in conditions of *misfit*. For instance, say for illustration that the probability of an organization being in misfit with any particular contingency factor at some point in time is one in five (i.e., 20%). With 14 factors, the probability of the organization being in misfit with at least one of them is 96%; with an even chance (i.e., 50%) of being in misfit with a particular factor, organizational misfit is nearly certain². This gives rise to our seventh research propositions.

Proposition 7a. A organization is likely to be in a state of static misfit at all times.

Proposition 7b. The probability of an organization being in a state of static misfit increases proportionately with the number of contingencies affecting it.

Likewise, we note above also how multiple, often conflicting contingencies must be addressed simultaneously, and how it becomes increasingly difficult to redesign the organization in a manner to bring it into fit in the context of the whole set of factors. Following the logic from above, even if managers can redesign an organization to bring it

² The probability of misfit with at least one factor is 1 minus the probability that the organization is in fit with all 14 factors simultaneously. With probability of misfit = 0.2, this becomes: $1 - (0.8)^{14} = 0.956$ or 96% when rounded; with probability of misfit = 0.5, this becomes: $1 - (0.5)^{14} = 0.9999$ or 100% when rounded.

into fit with a particular contingency factor, if the number of relevant contingency factors is large, then it is very unlikely to be in fit with all of the others. As above, say for illustration that the probability of an organization being in misfit with any particular contingency factor at some point in time is one in five (i.e., 20%), and say that management redesigns the organization to attain fit with one factor. If the number of relevant contingency factors is small (e.g., 3), then with only 2 other factors, the probability of the organization being in misfit with at least one of them is only 36%; but if the number of relevant contingency factors is large (e.g., 14), then with 13 other factors, the probability of the organization being in misfit with at least one of them rises to 95%³. This gives rise to our eighth research propositions.

Proposition 8a. An organization that is redesigned to address any single contingency factor and source of static misfit is likely to induce additional sources of misfit corresponding to other contingency factors.

Proposition 8b. The probability of an organizational redesign inducing additional sources of misfit increases proportionately with the number of contingencies affecting it.

Finally, implicit in our discussion of Aerodynamics and organizational analogs is the distinction between exogenous disruptions and endogenous goal changes. Both exogenous and endogenous factors affect the fit and performance of organizations; the key difference is that exogenous factors are imposed from the environment, whereas endogenous ones are self-imposed from within the organization. This gives rise to our ninth research propositions.

Proposition 9a. An organization subjected to more frequent and more extensive environmental disruptions will reflect greater static and dynamic misfit, and opportunity loss, than the same organization experiencing less disruption.

Proposition 9b. An organization that subjects itself to more frequent and more extensive goal changes and redesigns will reflect greater static and dynamic misfit, and opportunity loss, than the same organization experiencing less change.

Together these propositions, combined with the measures corresponding to the concepts from our conceptual model, outline a trajectory of empirical research into dynamic organizational fit, misfit and opportunity loss that offers potential to extend extant contingency theory.

³ As above, the probability of misfit with at least one factor is 1 minus the probability that the organization is in fit with all other factors simultaneously. With probability of misfit = 0.2 and the number of other factors = 2, this becomes: $1 - (0.8)^2 = 0.36$; with the number of other factors = 13, this becomes: $1 - (0.8)^{13} = 0.945$.

IV. EXTENDING EXTANT THEORY

Here we discuss our consistency with and extension to extant theory. We first use a succinct table to summarize the key dynamic concepts developed above. We then connect our research propositions to some exemplars from the literature to address the consistency of our conceptualization with extant theory and to summarize our principal extensions thereto.

A. KEY DYNAMIC CONCEPTS

Table 1 summarizes the key dynamic concepts and helps us to enfold our theoretical comparison and extension into the extant literature. Each of the three key dynamic concepts is listed in the first column with its relation to extant theory noted in the second. For instance, static stability is consistent with long-standing and current conceptualizations of fit; in particular, it characterizes misfit from a static perspective. The third column summarizes the impetus for change and reflects static stability in terms of exogenous shocks or disruptions. The column for construct measure summarizes how each concept could be quantified, and its counterpart in Column 5 highlights the corresponding management role. For instance with static stability, the concept could be measured as the magnitude of performance deviation from goal, and the corresponding management role is to maintain consistent performance with respect to current goals. In column 6 a few exemplars from the literature are listed for each concept, and the entries in column 7 link the propositions above to each concept.

Table 1 Summary of Key Dynamic Concepts

Concept	Relation to extant theory	Impetus for change	Construct measure	Management role	Exemplars from the literature	Propositions
Static stability	Consistent with (static) <i>misfit</i> .	Exogenous shock or disruption.	Magnitude of performance deviation from goal.	Maintain consistent performance wrt current goals.	Burns & Stalker (1961), Burton et al. (2002), Donaldson (2001)	1a, 1b, 2a, 2b, 7a, 7b, 8a, 8b, 9a, 9b
Dynamic stability	New. Incorporates <i>time</i> ; characterizes <i>dynamic misfit</i> .	Exogenous shock or disruption.	Magnitude and duration of performance deviation from goal; area under Ideal Organization curve.	Recover quickly from exogenous shock or disruption; maintain consistent performance wrt current goals.	Romanelli & Tushman (1994), Peteraf (2007), Lengnick-Hall & Beck (2005), Westerman (2006), Tushman & O'Reilly (1999), Brown & Eisenhardt (1997), Teece (1997), Zajac et al (2000), Burton et al (2006)	3a, 3b
Maneuverability	New. Incorporates <i>time</i> ; characterizes <i>opportunity loss</i> ; reveals design tradeoff.	Endogenous goal change.	Magnitude and duration of performance deviation from goal; area under Ideal Organization curve.	Move quickly to new goals; <i>redesign speed</i> .	Hannan & Freeman (1977), Scott (2003), Pant (1998), Eisenhardt & Martin (2000), Fiss & Zajac (2006), Cardinal et al (2004)	4a, 4b, 5a, 5b, 6a, 6b

B. CONSISTENCY WITH EXTANT THEORY

Particularly in terms of *static stability*, our conceptualization is very consistent with extant theory. First, the central premises of Contingency Theory (esp. that no single approach to organizing is best in all circumstances; that poor organizational fit degrades performance; that many diverse organizational structures, forms, configurations and other groupings have been theorized to enhance fit across an array of contingency factors)

remain consistent with our dynamic perspective (Burns & Stalker, 1961); nothing in our conceptualization would offer cause to question such central theoretical premises.

Second, *organizational fit* remains consistent with our perspective, as static fit is very compatible with our concept *static stability* (Burton et al., 2002). Hence our theoretical work falls well within the rubric of Contingency Theory. Donaldson (2001) states the fit concept succinctly: a match between the organization structure and the environment for positive performance. As summarized in the introduction above, there is a very large literature which uses this basic idea. Propositions: 1, 2, 7, 8 and 9 all point to static stability and its link to (static) organizational misfit.

In terms of *dynamic stability*, our conceptualization reveals both similarities and differences with other theoretical contributions that have been made over the past several decades. Consistent with punctuated equilibrium (Romanelli & Tushman, 1994), for instance, our dynamic perspective considers that organizational transformations may be required following rapid, discontinuous, environmental change. As equilibria are punctuated with increasing frequency (Peteraf & Reed, 2007), as another instance, or as dynamic, multicontingency contexts move toward continuous, unpredictable change (Lengnick-Hall & Beck, 2005), management finds it increasingly difficult to obtain the best dynamic fit across time periods (Westerman et al., 2006). Our conceptualization of dynamic stability—particularly as operationalized with our area measure of deviation across time—provides an approach to articulating, visualizing and assessing fit across time.

Further, such conceptualization provides an approach to assessing the relative merits of alternate techniques to achieve organizational ambidexterity (Tushman & O'Reilly, 1999) through concepts and measures that incorporate time explicitly and directly. Characterizing organizational designs in terms of balances between order and flexibility (Brown & Eisenhardt, 1997) or dynamic capabilities (Teece et al., 1997) highlights the explicit temporal focus of *dynamic stability*, as designs reflecting different degrees of balance or capabilities will reflect different dynamic stability levels with the corresponding dynamic misfits and opportunity losses.

Finally, answering calls from the literature for more dynamic perspective (Zajac et al., 2000), *time* emerges as a central concept of dynamic stability, which we address in an inherently dynamic manner as opposed to sequences of static changes (Burton et al., 2006). Proposition 3 points directly to dynamic stability and its link to dynamic organizational misfit.

In terms of *maneuverability*, our conceptualization reveals both similarities and differences with other theoretical contributions that have been made over the past several decades also. Consistent with population ecology (Hannan & Freeman, 1977), for instance, our dynamic perspective considers time explicitly. However, in supporting organizational design as a rational undertaking (Scott, 2003), our conceptualization is teleological in nature (Van de Ven & Poole, 1995), identifying a critical role for management to maneuver organizations through purposeful design changes (Burns & Stalker, 1961; Donaldson, 1987; Thompson, 1967). Likewise, as another instance, organizational maneuverability is consistent with the idea that management might benefit from moving their organizations purposefully out of fit at some points in time (Burton et al., 2006; Pant, 1998; Westerman et al., 2006), either in reaction to or in anticipation of

different times and contingencies. Indeed, our concept *maneuverability* addresses explicitly the capability of an organization to undergo design changes at various rates.

Further, we understand how conditions of misfit can obtain endogenously as well as result from exogenous disruptions. Deliberate, management-induced misfits—such as through strategic choice (Child, 1972; Govindarajan, 1986; Hambrick, 1983), cultural change (Deshpande & Webster, 1989) and organizational change (Covin & Slevin, 1989; Doty et al., 1993)—can cause dynamic misfit and opportunity loss as great as those stemming from environmental shifts. *Maneuverability* characterizes the ability of management to change the organization deliberately over time (e.g., seeking to obtain the best dynamic fit across time periods). Likewise, the kinds of multiple repertoires and scripts called for to maneuver organizations through very dynamic, high velocity markets (Eisenhardt & Martin, 2000) are entirely consistent with organizational maneuverability, as is the kind of balancing (Fiss & Zajac, 2006) or rebalancing (Cardinal, Sitkin, & Long, 2004) required to restore fit when an organization loses its balance. Moreover, our conceptualization of *maneuverability* includes an approach to operationalization through a measure related to opportunity loss. Such measure could apply well to assess the degree of balance and rebalance articulated through work along these lines. Proposition 4 points directly to maneuverability and its link to opportunity loss.

In terms of *maneuverability* also, we go further by articulating a fundamental design tradeoff between dynamic stability and maneuverability. With some parallel to the ambidextrous organization (Tushman & O'Reilly, 1999), we view organizations as integrated designs, with no theoretical restriction to single-mode operation. However, our fundamental design tradeoff between stability and maneuverability would assert some limits on the kinds of ambidexterity any given organization would be capable of. Such design limits would apply to resilience capacity (Lengnick-Hall & Beck, 2005), Edge organizations (Alberts & Hayes, 2003; Gateau et al., 2007) and dynamic capabilities (Eisenhardt & Martin, 2000; Teece et al., 1997) as well. Indeed, designing an organization for maneuverability—as opposed to stability—would represent an explicit design goal with constrained alternatives. Proposition 5 points directly to maneuverability and its tradeoff with dynamic stability.

Additionally, given that maneuverability requires tradeoff with stability in our conceptualization, the kinds of organizational semistuctures (Brown & Eisenhardt, 1997)—which seek to balance order with chaos and to keep organizational processes from flying out of control—appear to support such tradeoff between stability and maneuverability. Perhaps we can understand this tradeoff better by examining product development, alliancing, decision making, and other organizational processes (Eisenhardt & Martin, 2000) to understand the role of “flight control” management and technology (e.g., leveraging real-time information systems, supply-chain management systems, forecasting models) as means to enhance the control of maneuverable-but-unstable organizations. Proposition 6 points directly to how management and technology offer promise to enhance dynamic stability of highly maneuverable organizations.

C. EXTENSIONS TO EXTANT THEORY

Our conceptualization extends extant theory as well. The conceptual model proposed above articulates a number of concepts (e.g., *static stability*, *dynamic stability*, *maneuverability*) and interrelationships (e.g., respective effects on static misfit, dynamic misfit and opportunity loss; stability-maneuverability tradeoffs; management moderation) that extend beyond the body of current contingency theory. They also provide a basis for examining contingent fit in a different light—one that comes with a concise and coherent language and body of knowledge from Aerodynamics—and may reveal new insights into organizational design. Further, the associated propositions provide the basis for empirical examination, particularly as our measures for *static stability*, *dynamic stability* and *maneuverability* offer a preliminary approach to operationalizing constructs for examining testable hypotheses.

Returning again to Table 1, in terms of dynamic stability, this concept is new to Organization and Management Theory, as it incorporates *time* explicitly and characterizes *dynamic misfit*. As with static stability, the impetus for change stems from exogenous shocks or disruptions, but distinct from its static counterpart, the construct measure for dynamic stability includes both magnitude and duration of performance deviation from goal; one can calculate the area under the curve for an Ideal Organization trajectory. Also somewhat distinct from static stability, the focus of management is to recover quickly from exogenous shocks or disruptions, but both concepts share maintaining consistent performance with respect to current goals as a key management role.

In terms of maneuverability, this concept is new also, as it incorporates *time* explicitly and characterizes *opportunity loss*. Maneuverability also makes explicit the design tradeoff with dynamic stability: maneuverability and stability are mutually inhibiting. Maneuverability differs from both stability concepts, as its impetus for change stems from endogenous goal change. The construct measure for maneuverability is very similar to that for dynamic stability, however, as it includes both magnitude and duration of performance deviation from goal, and one can calculate the area under the curve for an Ideal Organization trajectory; the key difference is that maneuverability pertains to performance deviations resulting from endogenous goal changes, whereas dynamic stability pertains to exogenous shocks and disruptions. Also distinct from both static and dynamic stability, the focus of management is to move quickly to new goals; such focus, however, is comparable with much extant theory, as it amounts to the speed at which management can redesign and change an organization to reach new goals.

Further, our conceptualization of *dynamic organizational fit* and *misfit* goes well beyond the theoretical and analytical scope of *static fit* as a concept, and our conceptualization of *maneuverability* links organizational redesign with opportunity loss in an explicitly dynamic context. With such extension, we can look beyond whether an organization is in comparably good fit at any point in time: by understanding and visualizing the design and performance trajectory through time; by examining *fit* as an inherently dynamic concept; by recognizing *misfit* as the most likely condition of most organizations; by incorporating *time* as a central concept; and by interrelating organizational design, misfit and opportunity loss both conceptually and in terms of

measurable constructs. This novel capability helps to answer calls in the literature (Burton et al., 2002; Zajac et al., 2000) to address the inherent dynamics associated with Contingency Theory and organizational design.

V. CONCLUSION

Fit represents a central concept for organizational Contingency Theory, but most research maintains a static focus, neglecting that contingencies—and hence the corresponding organizational designs required for fit—are dynamic. Further, with multiple, often conflicting contingency factors—reflecting both endogenous and exogenous origins—in a set changing through time, organizations are likely to spend much of their time in conditions of *misfit*. This highlights the importance of research focusing on the magnitude and difficulty of correcting misfits over time. However, the dynamics of fit and misfit are not addressed well by extant organization and management theory.

In this article, we extend Contingency Theory through conceptualization of *dynamic organizational fit* and *misfit*. We begin with a focused summary of the literature regarding the nature of dynamic fit and then draw from the engineering field of Aerodynamics to inform our conceptualization in terms of stability, maneuverability and opportunity loss. Acknowledging that organizations are not airplanes, we illustrate how both are treated broadly as purposefully designed systems, the designs of which reflect designers' goals, environmental conditions and system constraints. By drawing from Aerodynamics, we introduce a concise and precise language and system of concepts, definitions and interrelationships that are coherent, internally consistent and supported by voluminous empirical verification and calibration across myriad domains, and we elucidate new insights with applicability to organization and management. For instance, the fundamental tradeoff between stability and maneuverability offers potential to inform the study and design of organizations in new ways.

Our conceptualization of dynamic organizational fit and misfit results in a conceptual model and nine research propositions that both conform to and extend extant theory. For instance, we relate *static stability* to *static fit/misfit* and operationalize the corresponding construct as the magnitude of performance deviation. Likewise, through *dynamic stability* we incorporate *time* explicitly, conceptualize *dynamic fit/misfit* and operationalize the corresponding construct as the combined magnitude and duration (i.e., an area measure) of performance deviation. Moreover, *maneuverability* incorporates *time* explicitly also and relates directly to conceptualization of *opportunity loss*, with operationalization of the corresponding construct through a similar area measure. The model and its propositions point to new organizational design considerations, tradeoffs and role of management and technology to provide stability and control to highly maneuverable organizations.

As with any study, there are limits to how much progress can be articulated in a single article such as this, and the conceptualization presented here offers potential to open up a whole new avenue of future research along the lines of this investigation. In particular, all of the concepts and relationships presented in our conceptual model call for further elaboration and refinement, and as noted above, they merit empirical testing as well.

Additionally, both the concepts *dynamic stability* and *maneuverability* correspond to “area measures,” where comparisons with ideal organizations are specified; this opens a

line of investigation to integrate the respective concepts *dynamic misfit* and *opportunity loss*, perhaps into a single concept that captures both exogenous (e.g., environmental disruptions) and endogenous (e.g., strategy changes) sources of performance deviation through misfit. The conceptual model also lends itself to computational modeling and analysis (e.g., via simulation), and the research propositions may generate a campaign of computational, laboratory and even field experimentation, as researchers strive to understand the extent and limits of organizational stability, maneuverability and opportunity loss associated with dynamic fit and misfit. To summarize, the contribution of this article is clearly limited, but we hope that it will be noteworthy and constructive and that it will generate new streams of research in organization and management theory.

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF REFERENCES

- Alberts, D. S., & Hayes, R. E. (2003). *Power to the edge : Command and control in the information age*. Washington, DC: Command and Control Research Program.
- Argote, L. (1982). Input uncertainty and organizational coordination in hospital emergency units. *Administrative Science Quarterly*, 27(3), 420.
- Brown, S. L., & Eisenhardt, K. M. (1997). The art of continuous change: Linking complexity theory and time-paced evolution in relentlessly shifting organizations. *Administrative Science Quarterly*, 42(1), 1.
- Burns, T., & Stalker, G. M. (1961). *The management of innovation*. London: Tavistock Publications 1966, c.
- Burton, R. M., DeSanctis, G., & Obel, B. (2006). *Organizational design : A step-by-step approach*. Cambridge, UK; New York: Cambridge University Press.
- Burton, R. M., Lauridsen, J., & Obel, B. (2002). Return on assets loss from situational and contingency misfits. *Management Science*, 48(11), 1461.
- Cardinal, L. B., Sitkin, S. B., & Long, C. P. (2004). Balancing and rebalancing in the creation and evolution of organizational control. *Organization Science*, 15(4), 411-431.
- Chandler, A. D. (1962). *Strategy and structure: Chapters in the history of the industrial enterprise*. Cambridge, MA: Press.
- Child, J. (1972). Organizational structure, environment and performance: The role of strategic choice. *Sociology*, 6(1), 1-22.
- Ciborra, C. U. (1996). The platform organization: Recombining strategies, structures, and surprises. *Organization Science*, 7(2), 103.
- Covin, J. G., & Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic Management Journal (1986-1998)*, 10(1), 75.
- D'Aveni, R. A. (1994). *Hypercompetition: Managing the dynamics of strategic maneuvering*. New York, NY: Free Press.
- Davidow, W. H., & Malone, M. S. (1992). *The virtual corporation : Structuring and revitalizing the corporation for the 21st century* (1st ed.). New York: Edward Burlingame Books/HarperBusiness.
- Deshpande, R., & Webster, F. E., Jr. (1989). Organizational culture and marketing: Defining the research. *Journal of Marketing*, 53(1), 3.
- Donaldson, L. (1987). Strategy and structural adjustment to regain fit and performance: In defence of contingency theory. *The Journal of Management Studies*, 24(1), 1.
- Donaldson, L. (2001). *The contingency theory of organizations*. Thousand Oaks, Calif: Sage Publications.
- Doty, D. H., Glick, W. H., & Huber, G. P. (1993). Fit, equifinality, and organizational effectiveness: A test. *Academy of Management Journal*, 36(6), 1196.
- Drazin, R., & Van de Ven, A. (1985). Alternative forms of fit in contingency theory. *Administrative Science Quarterly*, 30(4), 514.
- Duncan, R. (1979). What is the right organization structure? *Organizational Dynamics*, 7(3), 59.

- Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal*, 21(10/11), 1105.
- Eisenhardt, K. M., & Tabrizi, B. N. (1995). Accelerating adaptive processes: Product innovation in the global computer industry. *Administrative Science Quarterly*, 40(1), 84.
- Eldredge, N., & Gould, S. J. (1972). Punctuated equilibria: An alternative to phyletic gradualism. In T. J. M. Schopf (Ed.), *Models in paleobiology* (pp. 82-35). San Francisco, CA: Freeman, Cooper and Co.
- Fiss, P. C., & Zajac, E. J. (2006). The symbolic management of strategic change: Sensegiving via framing and decoupling. *Academy of Management Journal*, 49(6), 1173-1193.
- Galbraith, J. R. (1973). *Designing complex organizations*. Reading, Mass: Addison-Wesley Pub. Co.
- Galbraith, J. R. (1977). *Organization design*. Reading, Mass: Addison-Wesley Pub. Co.
- Gateau, J. B., Leweling, T. A., Looney, J. P., & Nissen, M. E. (2007). Hypothesis testing of edge organizations: Modeling the C2 organization design space. *Proceedings International Command & Control Research & Technology Symposium*, Newport, RI.
- Gersick, C. J. G. (1991). Revolutionary change theories: A multilevel exploration of the punctuated equilibrium paradigm. *Academy of Management Review*, 16(1), 10-36.
- Govindarajan, V. (1986). Decentralization, strategy, and effectiveness of strategic business units in multibusiness organizations. *The Academy of Management Review*, 11(4), 844.
- Gresov, C., & Drazin, R. (1997). Equifinality: Functional equivalence in organization design. *The Academy of Management Review*, 22(2), 403.
- Gresov, C., Drazin, R., & Van de Ven, A. H. (1989). Work-unit task uncertainty, design and morale. *Organization Studies*, 10(1), 45.
- Hambrick, D. C. (1983). High profit strategies in mature capital goods industries: A contingency approach. *Academy of Management Journal (Pre-1986)*, 26(000004), 687.
- Hamilton, R. T., & Shergill, G. S. (1992). The relationship between strategy-structure fit and financial performance in new zealand: Evidence of generality and validity with enhanced controls. *The Journal of Management Studies*, 29(1), 95.
- Hannan, M. T., & Carroll, G. R. (1995). An introduction to organizational ecology. In G. R. Carroll, & M. T. Hannan (Eds.), *Organizations in industry: Strategy, structure and selection* (pp. 17-31). New York, NY: Oxford University Press.
- Hannan, M. T., & Freeman, J. (1977). The population ecology of organizations. *American Journal of Sociology*, 82, 929-964.
- Hanssen-Bauer, J., & Snow, C. C. (1996). Responding to hypercompetition: The structure and processes of a regional learning network organization. *Organization Science*, 7(4), 413.
- Harvey, E. (1968). Technology and the structure of organizations. *American Sociological Review*, 33(2), 247-259.
- Houghton, E. L., & Carruthers, N. B. (1982). *Aerodynamics for engineering students* (Third ed.). London: Edward Arnold.

- Kauffman, S. A. (1995). *At home in the universe: The search for laws of self-organization and complexity*. New York, NY: Oxford University Press.
- Keller, R. T. (1994). Technology-information processing fit and the performance of R&D project groups: A test of contingency theory. *Academy of Management Journal*, 37(1), 167.
- Lawrence, P. R., & Lorsch, J. W., joint author (Eds.). (1986). *Organization and environment: Managing differentiation and integration*. Cambridge, MA: Harvard Business School Press.
- Lawrence, P. R., & Lorsch, J. W. (1967). *Organization and environment; managing differentiation and integration*. Boston, Division of Research, Graduate School of Business Administration: Harvard University.
- Lengnick-Hall, C. A., & Beck, T. E. (2005). Adaptive fit versus robust transformation: How organizations respond to environmental change. *Journal of Management*, 31(5), 738.
- Levy, S. (1994, May 1994). Dr. Edelman's brain. *New Yorker*, , 62-11.
- Litwak, E. (1961). Models of bureaucracy which permit conflict. *American Journal of Sociology*, 67(2), 177-184.
- McKelvey, B. (1982). *Organizational systematics--taxonomy, evolution, classification*. Berkeley: University of California Press.
- McNamara, G., Vaaler, P. M., & Devers, C. (2003). Same as it ever was: The search for evidence of increasing hypercompetition. *Strategic Management Journal*, 24(3), 261.
- Meyer, A. D., Tsui, A. S., & Hinings, C. R. (1993). Configurational approaches to organizational analysis. *Academy of Management Journal*, 36(6), 1175.
- Miles, R. E., & Snow, C. C. (1978). *Organizational strategy, structure, and process*. New York: McGraw-Hill.
- Mintzberg, H. (1979). *The structuring of organizations : A synthesis of the research*. Englewood Cliffs, N.J: Prentice-Hall.
- Mohr, L. B. (1971). Organizational technology and organizational structure. *Administrative Science Quarterly*, 16(4), 444.
- Ouchi, W. G. (1980). Markets, bureaucracies, and clans. *Administrative Science Quarterly*, 25(1), 129.
- Pant, P. N. (1998). Deviation from fit: An advantage when environments change. *Management International Review*, 38(4), 287.
- Payne, G. T. (2006). Examining configurations and firm performance in a suboptimal equifinality context. *Organization Science*, 17(6), 756.
- Pennings, J. M. (1975). The relevance of the structural-contingency model for organizational effectiveness. *Administrative Science Quarterly*, 20(3), 393.
- Perrow, C. (1970). *Organizational analysis; a sociological view*. Belmont, Calif: Wadsworth Pub. Co.
- Peteraf, M., & Reed, R. (2007). Managerial discretion and internal alignment under regulatory constraints and change. *Strategic Management Journal*, 28(11), 1089.
- Pugh, D. S., Hickson, D. J., Hinings, C. R., & Turner, C. (1969). The context of organization structures. *Administrative Science Quarterly*, 14(1), 91.
- Romanelli, E., & Tushman, M. L. (1994). Organizational transformation as punctuated equilibrium: An empirical test. *Academy of Management Journal*, 37(5), 1141.

- Sabherwal, R., Hirschheim, R., & Goles, T. (2001). The dynamics of alignment: Insights from a punctuated equilibrium model. *Organization Science*, 12(2), 179.
- Scott, W. R. (2003). *Organizations : Rational, natural, and open systems* (5th ed.). Upper Saddle River, N.J: Prentice Hall.
- Stacey, R. D. (1995). The science of complexity: An alternative perspective for strategic change processes. *Strategic Management Journal*, 16(6), 477.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 509.
- Thompson, J. D. (1967). *Organizations in action; social science bases of administrative theory*. New York: McGraw-Hill.
- Tushman, M. L., & O'Reilly, C. A.,III. (1999). Building ambidextrous organizations: Forming your own "skunk works". *Health Forum Journal*, 42(2), 20.
- Van de Ven, A., & Poole, M. S. (1995). Explaining development and change in organizations. *Academy of Management.the Academy of Management Review*, 20(3), 510.
- Weber, M., & Parsons, T. (1947). *The theory of social and economic organization*. New York: Free Press.
- Westerman, G., McFarlan, F. W., & Iansiti, M. (2006). Organization design and effectiveness over the innovation life cycle. *Organization Science*, 17(2), 230.
- Woodward, J. (1965). *Industrial organization: Theory and practice*. London, New York: Oxford University Press.
- Zajac, E. J., Kraatz, M. S., & Bresser, R. K. F. (2000). Modeling the dynamics of strategic fit: A normative approach to strategic change. *Strategic Management Journal*, 21(4), 429.

THIS PAGE INTENTIONALLY LEFT BLANK

INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center
Ft. Belvoir, Virginia
2. Dudley Knox Library
Naval Postgraduate School
Monterey, California
3. Dr. David S. Alberts
Office of the Assistant Secretary of Defense – NII/CIO
Command and Control Research Program
6000 Defense Pentagon, RM 3E151, Pentagon
Washington, DC 20301-6000