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Source: *Organization Science*, May - Jun., 2004, Vol. 15, No. 3 (May - Jun., 2004), pp. 276-294

Published by: INFORMS

Stable URL: <https://www.jstor.org/stable/30034733>

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From Persistence to Pursuit: A Longitudinal Examination of Momentum During the Early Stages of Strategic Change

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This study moves beyond the dominant “strategic persistence” view of momentum toward one focused on the energy associated with pursuit of a change goal. A conceptual distinction is made between inertia, the momentum associated with strategic persistence, and the momentum of strategic change. Building on this distinction, a theoretical framework is developed that examines the influence of various change-related events and social processes on momentum during the early stages of organizational change. The research reported in this manuscript was conducted over a 10-month period in an organization attempting to change its culture, employing both qualitative and longitudinal quantitative methods. This study provides validity evidence for the proposed momentum construct and identifies various factors that predict momentum. Results support a spiraling relationship between momentum and goal attainment, such that momentum predicts progress toward goal attainment, which then influences subsequent momentum. Practical implications and directions for future research are provided based on these findings.

Key words: momentum; inertia; organizational change; strategic persistence

Momentum is a popular concept that commentators, observers, and pundits have used to describe a variety of situations, ranging from football games, to gambling, to political campaigns. In each of these situations, activities and events exhibit a certain energy pattern or rhythm that is recognizable and imputed by participants and observers. The concept of momentum is especially relevant to the study of organizational change, because this energy and enthusiasm is seen as an essential ingredient when pursuing a new course of action (e.g., Coleman and White 1998, Jick 1995). Given the frequency with which momentum is cited as an important component of change, it is somewhat surprising to find that the majority of momentum research conducted in organizational settings has investigated a more static and inertial conceptualization of momentum as strategic persistence (e.g., Amburgey et al. 1993, Miller and Friesen 1980).

Because there has been little effort devoted to understanding momentum within the context of change, there were two goals driving this study. The first was to move beyond the “strategic persistence” view of momentum that has been dominant in the literature to a more dynamic conceptualization. In so doing, a more careful delineation is made between inertia, the momentum associated with strategic persistence, and the momentum of strategic change. This is an important goal because the theoretical framework of strategic persistence constrains our ability to see and understand the more dynamic forces associated with pursuing a new course

of action, as is often the case when organizations are in the midst of change. Thus, a broader understanding of momentum during the process of change is needed.

The second goal was to examine the events and activities that create initial momentum and cause fluctuations in momentum over time. The research reported in this manuscript employed quantitative and qualitative methods to examine the dynamics of momentum during the first several months of a culture change within one organization. An understanding of the events and activities that contribute to fluctuations in momentum can help predict the path of change and its ultimate success or failure. Knowledge about how and why momentum shifts during the course of a change can help researchers and practitioners alike to better manage the change process and its concomitant impact on the organization.

Persistence or Pursuit?

There is relatively high agreement among researchers regarding the conceptualization and definition of organizational inertia. Researchers traditionally draw on Hannan and Freeman's (1977, 1984) structural inertia, Cyert and March's (1963) organizational routines, and David's (1985) path dependence to explain the inertial tendencies present in most organizations. Inertia is generally conceptualized as the tendency to routinely repeat past actions and patterns of activities. The American Heritage Dictionary (Morris 1980) defines inertia as *the tendency of a body to resist acceleration or change*;

the tendency of a body at rest to stay at rest or of a body in motion to stay in motion. This phenomenon focuses more on patterned behavior and persistence than directed effort or explicit energy investments.

In contrast, momentum is the term used to describe the more dynamic aspects of pursuing a course of action. It is defined as *the force of motion, or alternatively, the force or energy associated with a moving body* (Morris 1980). However, the majority of research that has examined organizational momentum has adopted a more inertial conceptualization (Amburgey and Dacin 1994, Amburgey et al. 1993, Amburgey and Miner 1992, Kelly and Amburgey 1991, Miller 1993). For example, Amburgey et al. (1993) describe inertia as an organization at rest staying at rest, and momentum as an organization in motion staying in motion. The seminal work on momentum (Miller and Friesen 1980) defines it as the tendency to extrapolate previous directions of evolution in strategy and structure. Miller (1993) further clarified the construct by suggesting that momentum is a path of development that harmonizes and extends corporate ideologies, strategies, and infrastructures. Similarly, Tushman and Romanelli (1985) use the term convergence (i.e., periods of strategic persistence) to describe momentum.

Several researchers have empirically tested momentum using this definition. Amburgey and Miner (1992) examined three types of strategic momentum. *Repetitive momentum* occurs when an organization repeats a specific previous action. *Contextual momentum* occurs when broad organizational features such as structure or culture shape strategic actions. Finally, *positional momentum*

occurs when an organization takes strategic actions that sustain or extend its existing strategic position, regardless of how it arrived at that position. Their results provided support for the existence of repetitive and contextual momentum, but not positional momentum. Interestingly, the former seem to bear more resemblance to inertia, emphasizing existing routines and structure, while the latter suggests a more directed force consistent with momentum.

Toward an Expanded View of Momentum

Given the confusing and overlapping definitions in the literature, it is unclear whether the current conceptualization of momentum as strategic persistence can fully capture the dynamism associated with pursuing a new direction. Therefore, I propose a distinction between *stasis-based momentum*, describing the energy associated with persisting with or extending the current trajectory, and *change-based momentum*, describing the energy associated with pursuing a new trajectory. The proposed distinction is important because if change is going to occur, the energy directed at maintaining the current trajectory must be redirected, replaced, or overcome by the momentum in the new direction (e.g., Greenwood and Hinings 1988). In addition, much like the comparison of first- and second-order change (Bartunek and Moch 1987), stasis-based momentum relies on existing or modified routines, while change-based momentum necessitates creating new routines and patterns of behavior. The key differences between inertia, stasis-based momentum, and change-based momentum are described in greater detail below and summarized in Table 1.

Table 1 A Comparison of Inertia, Stasis-Based Momentum, and Change-Based Momentum

	Inertia	Stasis-based momentum	Change-based momentum
Key differences	Tendency No effort No change Familiar path Routinized scripts	Force Small effort Incremental change Familiar path Adjusted scripts	Force Large effort Frame-breaking change New path New scripts
Direction and trajectory	No directed energy; maintaining current trajectory	Directed energy for persisting with current trajectory	Directed energy for pursuing a new trajectory
Theoretical bases	Structural inertia organizational routines path dependence	Strategic persistence modification routines entrainment theory	Strategic change punctuated equilibrium strategic pacing
Related constructs			
Miller and Friesen (1980) Greenwood and Hinings (1988)	Inertia Inertia track	Momentum Aborted excursion Unresolved excursion Processual adjustment	Quantum change Reorientation track Processual reorientation
Amburgey and Miner (1992)	Repetitive momentum Contextual momentum	Positional momentum	
Gersick (1994)		Temporal maintenance	Temporal pacing Event-based pacing

Stasis-Based Momentum. Stasis-based momentum focuses on the energy associated with persisting with or extending a prior course of action (Amburgey et al. 1993; Dyck 1995; Gersick 1991, 1994). Rather than the *tendency* to continue in a particular direction, stasis-based momentum highlights the *energy* expended to persist with a current trajectory. The theoretical perspectives relevant to stasis-based momentum include strategic persistence (e.g., Amburgey and Miner 1992, Miller and Friesen 1980), entrainment (Ancona and Chong 1996, McGrath et al. 1984), and modification routines (Amburgey et al. 1993, Nelson and Winter 1982). Whereas routines are envisioned as fixed or automatic from an inertial perspective, they are conceptualized as repetitively activated (Jepperson 1991), effortful routines (Giddens 1984), or effortful accomplishments (Pentland and Rueter 1994) in the domain of stasis-based momentum. The choice to persist with or extend a particular course of action requires effort and a commitment of energy. Gersick's (1994) temporal maintenance, which focuses on cyclical activities designed to preserve order or maintain a particular path, is an example of this type of momentum. Another example is Amburgey and Miner's (1992) positional momentum, which suggests that pursuit is more likely to follow the current trajectory than an alternative trajectory. Finally, Greenwood and Hinings (1988) exemplify this stasis-based view in their characterization of a processual adjustment, focusing on achieving coherence within an existing archetype.

Change-Based Momentum. In contrast to persisting with or enhancing a prior course of action, change-based momentum represents the energy associated with movement along a new trajectory. It applies to the more change-specific energy fluctuations experienced during the pursuit of a new goal. Change-based momentum is based in theories of strategic change (Mintzberg 1987, Van de Ven 1992) and punctuated equilibrium (Miller and Friesen 1980, Tushman and Romanelli 1985). Gersick's (1994) temporal and event-based pacing, involving the pursuit of future goals in situations with an element of uncertainty and lack of routine, exemplifies this type of momentum. A second example is Greenwood and Hinings' (1988) processual reorientation, in which a punctuated or transformational shift from one archetype to another occurs. Both of these examples require the creation of new scripts and routines and a leap into an unfamiliar and potentially uncomfortable transformative period.

Establishing Change-Based Momentum

Change-based momentum incorporates the prescriptions of transformational change agents, where momentum is described as a dynamic force whose presence or absence determines the ultimate success of a transformation (Kotter 1995, Linstead and Chan 1994). For example,

Elmes and Wynkoop (1990) argue that organizational transformation cannot occur unless there is enough (change-based) momentum for a shared transformational vision. In other words, there must be enough initial energy in the direction for change to overcome the stasis-based momentum force. The literature suggests one top-down and two bottom-up sources of energy likely to facilitate the process of establishing change-based momentum.

Top-Down Sources. Research suggests that the CEO or change leader plays a critical role in creating the impetus for motion. This research has generally taken the approach that “managers’ interpretations matter” in determining whether and how strategic change will occur (Daft and Weick 1984, Dutton and Duncan 1987, Lant et al. 1992). For example, Dutton and Duncan (1987) present a model of strategic issue diagnosis, showing how decision makers interpret strategic issues. They propose that the meanings formed during strategic issue diagnosis create momentum for change, where momentum refers to the level of effort and commitment that executives are willing to devote to a strategic course of action (Dutton and Duncan 1987). Ginsberg and Venkatraman (1995) studied the urgency and feasibility assessments that managers attached to the strategic issue of electronic filing of tax returns and found support for Dutton and Duncan's (1987) model.

Bottom-Up Sources. Research also suggests two emergent processes that can create change-based momentum: accumulating support and accumulating progress. Accumulating support can occur in one of two ways. First, it can be winning support of key influence leaders (e.g., Gladwell 2000). These well-connected individuals are more likely to have a broad reach and greater influence. The second way is by attaining some threshold number of change-supportive participants (e.g., Freedman et al. 1980, Myers et al. 1977). In both cases, support accumulates via processes of social interaction and contagion until a *critical mass* of change supporters is reached, creating punctuated change. Accumulating progress is a second bottom-up approach. Even in the absence of a decision maker's commitment to a course of action or a critical mass of participants, momentum may be born simply because activities are occurring that move the organization along a consistent trajectory. For example, writers are quite familiar with patterns of procrastination. The popular advice for overcoming writer's block is to simply start writing, even if there is no “executive decision” on the topic or theme (e.g., desired end state). Nonetheless, the theme emerges as the writing progresses and coalesces. Similarly, organizations may achieve momentum simply because actions are taken and progress is made, even before the goal and direction of movement become evident, in much the same way that organizational strategies emerge (e.g., Mintzberg and

Westley 1992) and chance events become the starting link in a causal chain (Weick 1979, 1984). I use the term *escape velocity* to refer to the critical threshold where recognizable traction (i.e., progress) along the new trajectory allows for an escape from the stasis-based path.

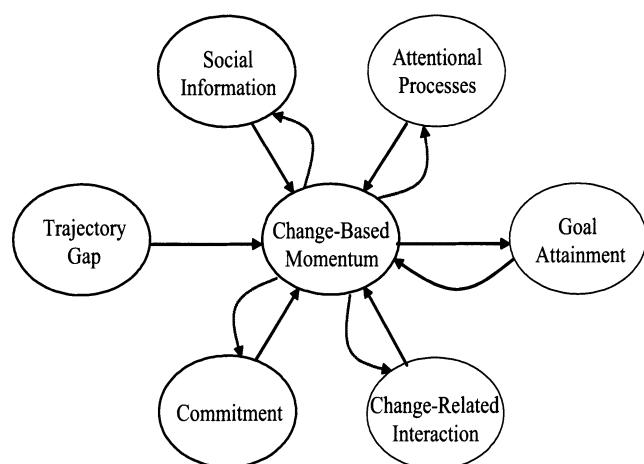
Relationship Between Momentum Types. Even if change-based momentum has been established, a tension between stasis- and change-based momentum may remain. For example, even in the presence of change-based momentum, it is likely that some organizational members may expend energy to remain on the existing path (stasis-based momentum). Thus, for some period of time, the organization may have to contend with two potentially divergent paths. Stasis-based momentum may also return as events unfold, because of fluctuating commitment to the change or the introduction of a modified or altogether different change goal. A common example is that after an organization pursues a particular change path for some period of time, the goal itself may change, introducing yet another trajectory with a momentum of its own. In this case, there are once again two competing trajectories and a new tension to resolve.

Predicting Change-Based Momentum over Time

Change-based momentum is conceptualized as an organization-level construct, but one that can be perceived by individuals within the organization, and generated and maintained by their interactions. Thus, this study adopts a triangulated approach to investigating change-based momentum (Jick 1979) by using qualitative methods to study the more observable manifestation of momentum during organizational events, and quantitative methods to disclose the relationships between individual-level predictors and perceptions of momentum. For example, a qualitative analysis of the urgency of the message conveyed during the announcement of the change and the reported “buzz” of conversation immediately following it exposes the organization-level manifestation of change-based momentum. At the same time, quantitative data regarding the perceived intensity of change-based momentum at the individual level allows for a more fine-grained analysis of variables that predict momentum fluctuations.

As shown in Figure 1, the proposed theory suggests that, once created, change-based momentum becomes a dynamic element of organizational change that fluctuates in response to different change-related factors, including characteristics of social information conveyed during the change, changing commitments, and fluctuations in attentiveness. These relationships are expected to be cyclical, such that, for example, momentum enables progress, and progress fuels subsequent momentum. This study focuses on the relationships shown in bold and top-down sources of momentum creation. Details of the model are explicated below.

Figure 1 Model of Change-Based Momentum



Organizational Events

Social Information. Individuals use cues from the social environment to construct and interpret events (Salancik and Pfeffer 1978). Because change-based momentum involves pursuing an unfamiliar trajectory, these social cues are likely to be especially salient as change participants attempt to make sense of the change. Research suggests that social information directly influences a person’s attitudes and behavior (Salancik and Pfeffer 1978), and provides evidence that, in particular, a supervisor’s informational cues have a significant effect on how subjects perceive and respond to a task (Griffin 1983). Given that the impetus for the focal change was an executive’s decision, the announcement of the change is a particularly salient event for information dissemination. Such an event provides an early opportunity for participants to develop a change schema that is used to formulate a specific attitude toward the change and guide responses to change events (Lau and Woodman 1995). For example, Isabella (1990) found that the announcement of a change triggered an interpretive shift among participants and that the experience of and reaction to this triggering event fostered movement in the direction of change.

Based on past research and practical wisdom, it is expected that three characteristics of social information conveyed will influence initial momentum perceptions. First, Gersick (1994) and Ginsberg and Venkatraman (1995) found that both the *urgency* (e.g., we need to do this) and *feasibility* (e.g., we can do this) managers attached to change-related events impacted the level of effort devoted to subsequent actions. Such information establishes initial energy levels for the change. In addition, from a practical perspective, many kickoff meetings capitalize on elements of constructive *drama*, such as music, festive decorations, or a party-like atmosphere, to create energy for the change. Thus, the presence of these three forms of social information, conveyed during the

announcement of the change, are expected to influence initial momentum.

HYPOTHESIS 1. Social information that conveys urgency, feasibility, and drama during the announcement of the change will positively influence initial change-based momentum.

As the change unfolds, events can have differential impact on momentum. Some may have no impact at all, while others will be localized (e.g., influencing a certain subset of change participants) or equivocal (e.g., leading to a variety of interpretations as to whether the event contributes to or detracts from momentum). Finally, change events that involve a wide spectrum of participants are likely to be symbolic events that codify perceptions within the organization. These large-reaching change events have the greatest opportunity to influence momentum. Similar to the arguments made above regarding the change announcement, urgency and drama are expected to remain as important forms of social information conveyed during such events. However, it is likely that feasibility assessments (can we do it?) give way to progress assessments (how are we doing?) as the change unfolds. Thus, the conveyance of urgency, drama, and progress assessments during large-reaching change events are expected to influence momentum.

HYPOTHESIS 2. Social information that conveys urgency, drama, and progress during large-reaching change events throughout the change process will positively influence change-based momentum.

Attentional Processes. Popular wisdom suggests that there is a relationship between attention and energy. Consider Adler's (1981, p. 16) sociological description of momentum:

When the social perception of momentum's presence becomes aroused (as in a craps game where one player is seen as "hot"), the excitement quickly spreads, drawing others into the rising fervor and blending strangers into a group that cheers and shouts as one.

If a large crowd forms at a nearby table and shouts with even greater excitement than the crowd at your table, your attention will likely be pulled to the other event, thereby decreasing the momentum experienced at your table. Because individuals have a limited amount of attention available to devote (i.e., they are resource limited), alternative attention-demanding events may take participants' attention and energy away from the focal change. Consequently, when the level of effort directed to a focal activity changes, researchers have observed a corresponding change in performance (Kanfer and Ackerman 1989, Norman and Bobrow 1975). Thus, significant alternative events are predicted to have a negative impact on change-based momentum. Significant events require a prolonged investment of energy (relative to the length of the change effort) and/or a critical

mass of change participants (relative to the total number of participants at the particular stage of the change). Such events are likely to have their own momentum, and their pursuit is likely to have a detrimental effect on the momentum for the focal change (e.g., Lindsley et al. 1995). Conversely, fleeting or insignificant shifts in attention or those involving a limited number of participants are not expected to impact momentum.

HYPOTHESIS 3. Significant events that shift attention away from the focal change will negatively influence change-based momentum.

Individual Perceptions

Frequency of Change-Related Interaction. Regardless of the content of change-related interaction, it is expected that the frequency of interaction is likely to create momentum. The more the change is a topic of conversation, the greater its implied urgency (Ginsberg and Venkatraman 1995, Kotter 1995). If the change is deemed unimportant, there is likely to be little interaction about it (i.e., the absence of interaction conveys apathy). However, if participants are talking about the change, even if it is to complain about it with like-minded others, they likely do so because the change is moving ahead and they need to make sense of events. Thus, the urgency implied by frequent interaction creates energy for the change.

HYPOTHESIS 4. There will be a positive relationship between the frequency of change-related interaction and the amount of change-based momentum perceived.

Trajectory Gap. Prior to the introduction of a change-based trajectory, subcultures within the organization can be characterized as having unique stasis-based paths determined by variations in cultural routines and patterns of behavior. The degree of alignment between these stasis-based trajectories and the espoused trajectory for change is likely to be an important determinant of initial momentum perceptions. The gap between the two trajectories reflects the inherent tension between stasis- and change-based momentum. The greater the gap, the greater the energy investment required to successfully establish change-based momentum. The more closely aligned the two paths, the greater the readiness for change (Armenakis et al. 1993) and the easier the transition to establishing change-based momentum. Once change-based momentum has been established, these starting conditions are likely to become less relevant. Thus, change-based momentum perceptions are likely to be influenced by the initial gap between the stasis- and change-based trajectories, but will cease to predict momentum perceptions once change-based momentum has been established.

HYPOTHESIS 5. The greater the initial gap between subgroup's stasis- and change-based trajectory, the less change-based momentum perceived.

Change-Related Commitment. As described earlier, change-based momentum can be initially created by attaining a critical mass of accumulating support, which implies a positive relationship between commitment and change-based momentum. At the individual level, as individuals choose to commit to the change-based path, they become part of the accumulating support the change is garnering, which increases their perception of change-based momentum. Similar to the above hypothesis, these individuals are less resistant and less likely to desire maintaining the status quo. Conversely, those who remain uncommitted or lose their commitment over time are more likely to persist with the stasis-based trajectory and actively resist the change-based path (e.g., Hambrick et al. 1993). This resistance is likely to decrease the perception of change-based momentum.

HYPOTHESIS 6. *Individual commitment to the change will positively influence the amount of change-based momentum perceived.*

Goal Attainment. Not surprisingly, the ultimate benefit of creating or building momentum is the belief that momentum fuels effort and progress and results in a faster or more successful implementation of the change (Kotter 1995, Linstead and Chan 1994). Because this study focused on the early stages of one particular change, it would be inappropriate to make sweeping predictions about the ultimate impact of momentum on some organizational measure of success or failure. However, interim measures of goal attainment provide a useful proxy for gauging the overall impact of momentum. Whereas the amount of momentum reflects the energy at one point in time, a measure of overall movement toward ultimate goal attainment focuses on the cumulative progress made toward meeting the stated goal of the change over the long term. Given the goal-directed nature of momentum, goal setting theory is pertinent to the momentum-goal attainment relationship. Goal-setting theory proposes that goals direct attention and effort and this effort leads toward ultimate goal attainment (Locke and Latham 1991). Similarly, the greater the perceived energy in pursuit of the change, the more effort likely to be expended and the more likely the organization is moving closer to the goal. Thus, it is expected that there will be a positive relationship between momentum and overall goal attainment.

HYPOTHESIS 7. *Momentum in one time period will be positively related to perceived overall goal attainment in the subsequent time period.*

Subsequent Momentum. Research at the individual level of analysis has explored a cyclic relationship between psychological momentum and performance (e.g., Vallerand et al. 1988), whereby psychological momentum leads to enhanced performance and enhanced performance becomes a contextual antecedent of future

momentum perceptions. In much the same way, it is expected that the shared energy and enthusiasm of change-based momentum will spur progress and that this level of goal attainment will fuel future momentum. This is comparable to the advice that early small successes may help to build energy for future efforts (e.g., Sitkin 1992, Weick 1984). Similarly, a decrease in momentum is likely to negatively impact goal attainment, which will then decrease subsequent momentum. Thus, the momentum-progress relationship can result in either positive or negative spirals.

HYPOTHESIS 8. *Overall goal attainment in one time period will be positively related to momentum perceived in the subsequent time period.*

Methods

To test these hypotheses and the framework in Figure 1, qualitative and quantitative data were collected from the participants of a strategic leader-initiated culture change at the U.S. Military Academy (USMA or West Point) over a 10-month period beginning in 1997. A longitudinal field study within one organization was chosen to provide the depth needed to fully explore momentum and to control for potentially confounding effects of different change types and contexts. To explore early momentum, it was also important to have gained entry prior to a general announcement of the change. The timing and degree of access granted by West Point made it ideal for studying the ebb and flow of momentum over time.

Case Description

The West Point experience represents a rich cultural tradition emphasizing duty, honor, and country. For nearly 200 years, West Point has educated and trained a corps of cadets for careers as military officers. The corps is composed of approximately 4,000 students (1,000 per class), divided into 4 regiments. Unit leadership is maintained by a combination of cadet leaders (first captain, command sergeant major, and regimental commanders) and military officers (tactical and noncommissioned officers). Three key individuals lead the institution. The superintendent, a three-star general, is responsible for the overall leadership of the school. Reporting to him are two 1-star generals: the dean, responsible for the academic experience, and the commandant, responsible for military and character development.

Motivation for Change. Three distinct issues created the impetus for changing West Point's culture. First, as its bicentennial approached, greater consideration was being given to determining how West Point would meet the changing leadership demands in a rapidly changing world. This attention raised concern about the applicability of old traditions and training methods in meeting the

needs of the rapid-deployment army that had emerged in recent decades. Second, a 1997 study of West Point officers' performance in their first assignment corroborated an earlier 1977 study, finding that although former cadets were well prepared and knowledgeable, they were unable to interact effectively with troops, were immature, and prone to "quibble" about rules and regulations. The third impetus for change was succession in key leadership positions. Although the need for change had been recognized for several years, the appointment of the new superintendent in 1996 and commandant in 1997 ultimately started the strategic planning process. Until that time, much of the history and tradition of West Point had focused on a seniority-based class system, in which the first class (seniors or "firsties") has greater privilege and voice than each of the other classes. In addition, many of the traditional rites of passage for the fourth class (freshman or "plebes") were designed to separate them from the rest of the corps, including different standards for walking ("pinging" or moving out with purpose), sock-wearing (plebes were required to wear their black gym socks pulled up to their knees while upperclassmen wore "socks down"), and dinner-table etiquette (where plebes often avoided eating to stave off potential hazing by upper-class cadets seated at their table).

The overall purpose of the change was to move from a culture that promoted class-based differences and poor treatment of subordinates to one that emphasized unit-based relationships and strong leadership to better reflect the army in terms of training, treatment, and culture. This was frequently referred to as "putting the 'M' back in USMA." A primary goal of the change was to move the academy from a class-based to a unit-based system. To illustrate the need for such a shift, the commandant described a scenario in which four cadets, one from each class, are seated around a table. Only three steaks are brought to the table. Within the traditional culture of the academy, the outcome of this unfortunate situation would most assuredly be that the plebe would go hungry. If the same scenario were played out in the "real" army, with four soldiers from the same unit holding different ranks, the senior ranking officer would ensure that his or her subordinates were fed, even if it meant he or she would go hungry. A related goal was to eliminate debasing and demeaning behavior (i.e., hazing) as an acceptable leadership technique. For example, the superintendent stated that there had been a long-lasting

feeling that we could hector and berate a plebe and that was okay, that somehow we'd go out into the Army and not be affected by that. Well, I saw too many junior officers deal with their platoon or company the way an upperclassman dealt with a plebe—and you don't do that.

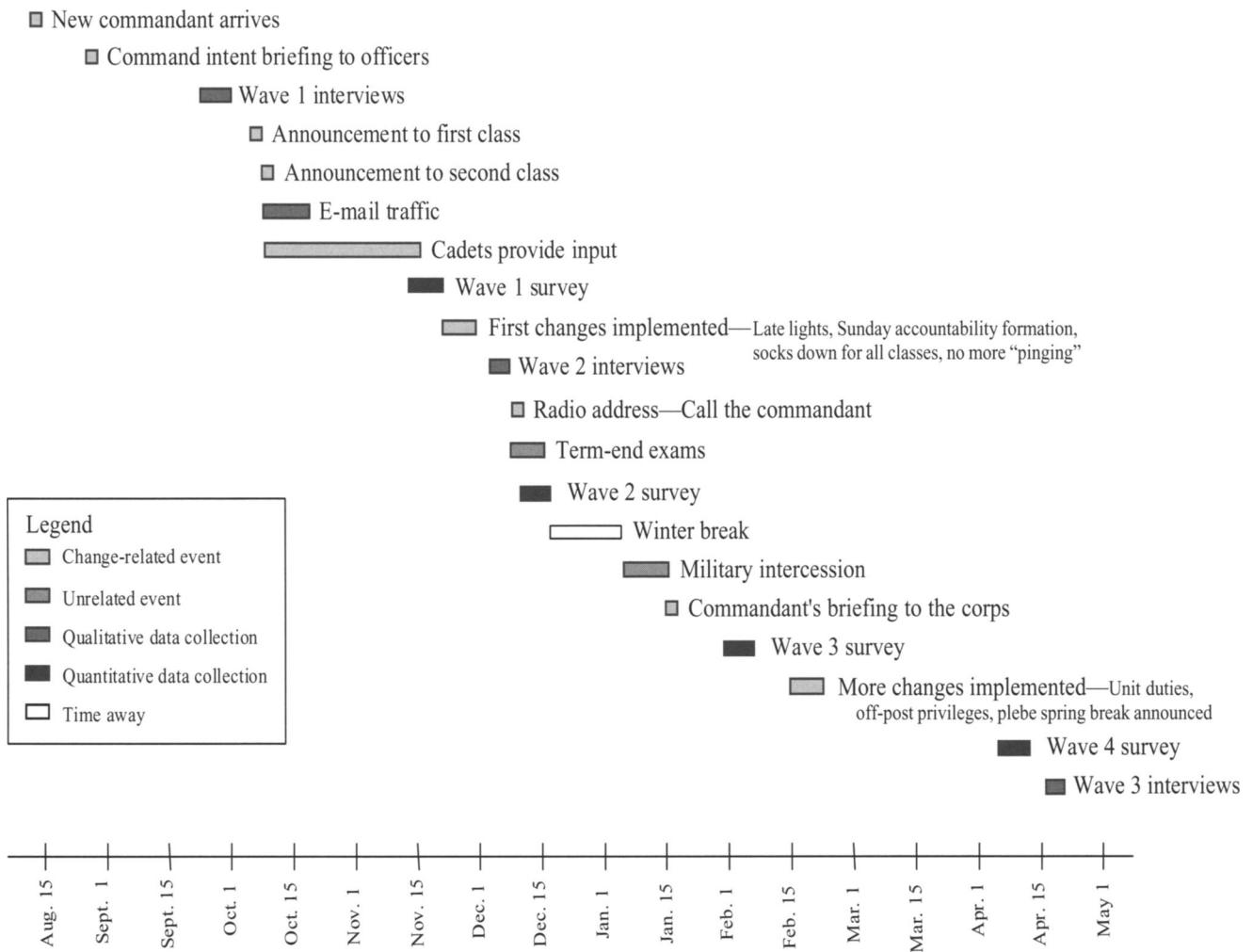
In sum, these goals would require substantial change to the underlying cultural experience.

Sequence of Events. A time line of change-related events and data collection activities is provided in Figure 2. The new commandant took command in August 1997. He held a briefing for the officers regarding his vision for change on August 28th. The first series of informal interviews were conducted in mid-September. At that time, no public announcement of the proposed change had been made. An announcement was made to the first-class cadet leaders on October 8th and to the second-class leaders on October 9th. Cadets were then asked to discuss and forward concerns and suggestions for meeting the change goals to cadet leaders. At this point, beyond the stated goals, it was not yet clear exactly what would change. There was a great deal of discussion, dissent, and ambiguity as cadets attempted to make sense of the change. Several proposed changes were implemented in late November, including eliminating the requirement for plebes to "ping" as they walked, and allowing them to wear their socks down for gym classes. Interestingly, there was not one clear point demarking these changes. It took a period of weeks and several smaller transitions and confrontations before there was mass adoption of these changes. After winter break, and at the end of a two-week intensive military training session, the commandant held another briefing, this time to the entire corps of cadets. Several further changes were announced, but not targeted to be implemented until the summer or following year.

Qualitative Data Sources

Qualitative data were gathered from various media sources such as published articles, presentation materials, and cadet comments e-mailed immediately after the announcement. Videotapes of all formal briefings were obtained, as well as an audio tape of the commandant's radio program. This information was used to build the time line (Figure 2), provide contextual details about the case, and assess Hypotheses 1–3. Informants included the cadet first captain, the cadet command sergeant major, and the commandant. Interviews with informants were conducted after the announcement meeting and the corps briefing, which allowed me to clarify particular comments and to hear their immediate reactions to the event. To build trust, the first set of interviews was not taped, but extensive field notes were taken. These notes were detailed and elaborated upon immediately following each interview. Once rapport was established, subsequent interviews were taped and transcribed. Their insights were used to provide details for reconstructing these focal events. Finally, write-in comments from all waves of data collection were content analyzed to determine the most prevalent triggers for momentum change, and typical comments were used to illustrate key points in the results section.

Figure 2 A Timeline of Change-Related Events and Data Collection Periods



Quantitative Data Sources

The sample consisted of all military officers and non-commissioned officers in staff and tactical positions ($n = 100$), all cadet officers at the rank of company commander and above ($n = 110$), and a random sample of nonofficer cadets ($n = 660$). The random sample of cadets was generated by choosing every fifth cadet in a list sorted first by company and then by class to obtain roughly 20 cadets per company. This technique ensured a demographically diverse sample, as companies are formed to reflect the overall diversity within the corps.

In the course of data collection, 3 people declined to participate and 16 e-mail addresses were invalid, making the available sample size 851 at each wave. A total of 968 observations were collected at 4 different points in time ($n_1 = 269$, $n_2 = 143$, $n_3 = 259$, $n_4 = 297$). Of this total, there were 526 unique respondents who participated at one or more time periods throughout the study. Fifty-six respondents provided data at all four time periods. One-time responders were fairly evenly divided by

wave, suggesting that earlier survey administrations did not preclude new entrants at later time periods. The low response rate at Time 2 is likely because of the lack of a follow-up reminder and the competing demands of term-end exams. No significant demographic differences were found among respondents across waves, so information is provided on the overall sample. Fourteen percent of the sample was female, which is representative of the West Point population at large (16%). Eighty-three percent of respondents were cadets, and fourteen percent were active-duty military. Of the active-duty members, 71% were tactical officers, 23% were noncommissioned officers, and the remainder were civilians in planning and support positions. The cadet respondents were equally distributed by class and by company.

Procedure

Participants were solicited via electronic mail at four points in time. The electronic message, sent from my university account, introduced my independent, but West

Point sanctioned, research, described the change of interest, and asked respondents to click on the embedded Internet link to complete the survey. Although several other options were available for distributing the survey, including having it placed on the organization's intranet and/or requiring mandatory response, the present approach was chosen to minimize feelings of coercion that may have affected respondents' willingness to openly share their views. Subjects were asked to provide their userid to match subsequent responses, and voluntarily did so 98.5% of the time.

Measures

Perceived Momentum. Because change-based momentum is defined as an organization-level construct that is perceived by individuals, the dependent variable of interest in the quantitative portion of the study is the perception of change-based momentum. This construct was assessed with six items on a seven-point Likert scale developed for this study (average $\alpha = 0.91$). The full list of items is reported in Table 2. Post hoc analysis of intraclass correlations (reported later) provide evidence of agreement on momentum perceptions across key groups.

Goal Attainment. This measure assessed the cumulative progress made on the change expressed as the percentage of overall goal attainment (one item ranging from 0% to 100%).

Trajectory Gap. This measure represents the degree of alignment between various subgroups' current trajectory and the espoused trajectory of the change. At West Point, there had been a long-established pattern of subcultural beliefs across regiments. The first regiment had a reputation of being tough, demanding, and driven. Physically, they were located directly next to the corps headquarters. The second and third regiments shared a building a bit farther away from central command, and tended to be a bit more middle of the road in terms of toughness. Finally, the fourth regiment had a reputation of being easygoing and considerate, and their barracks were the farthest removed from headquarters. The proposed change of eliminating hazing and the four-class system was most aligned with the cultural trajectory of the fourth regiment, and least aligned with the cultural path of the first regiment. Perhaps not surprisingly, the most vocal dissent with the proposed change came from the first regiment, and the cadet that emerged as a key change leader was from the fourth regiment. Trajectory gap was therefore coded 3 for first regiment (e.g., largest gap), coded 2 for second and third regiment, and coded 1 for fourth regiment. Although individual momentum scores are not being aggregated to the group level in this case, showing evidence that the variance between regiments is greater than the variance within regiment would help to substantiate the proposed coding scheme. Therefore, the intraclass correlation coefficient (ICC)

Table 2 Range of Coefficients, Z-Statistics, and Reliability Values for the Measurement Model Across Four Time Periods^a

Construct/indicator	Standardized coefficient	Z	Composite reliability
Perceived momentum			0.87–0.94
This change seems to have quite a bit of momentum	0.71–0.85	— ^b	
There doesn't seem to be any energy associated with this change	0.76–0.86	10.30–18.05*	
There is no energy propelling this change along	0.79–0.87	9.98–18.37*	
I sense quite a bit of enthusiasm associated with this change	0.58–0.80	8.34–14.52*	
This change seems to have very little momentum	0.79–0.91	11.40–20.02*	
There is very strong energy propelling this change along	0.74–0.88	9.35–18.49*	
Change-related interaction			0.84–0.87
This change seems to be a frequent topic of conversation	0.66–0.81	— ^b	
I rarely discuss this change with others	0.66–0.74	7.82–11.93*	
This change seems to have generated quite a bit of e-mail traffic	0.52–0.64	7.10–10.64*	
I spend a great deal of time talking with others about this change	0.79–0.88	9.62–14.74*	
I hardly ever discuss this change with others	0.82–0.88	10.26–14.37*	
Commitment to the change program			0.92–0.93
It is hard for me to take this change seriously	0.62–0.77	— ^b	
The principles of this change effort are good goals to shoot for	0.75–0.81	9.45–13.77*	
It is unrealistic to expect that I will adopt this change	0.72–0.75	8.63–13.73*	
I am strongly committed to this change effort	0.82–0.89	10.09–15.55*	
It wouldn't take much for me to abandon this change	0.79–0.86	9.42–16.26*	
There is not much to be gained by implementing this change	0.68–0.85	10.05–16.01*	
I am convinced we need this change at (organization)	0.80–0.86	10.40–14.87*	
The potential benefits of this change are not worth its costs in time and resources required to implement it	0.62–0.82	8.37–13.78*	

^a Model fit statistics are reported in Table 4.

^b Coefficients of leading indicator for each construct were set to 1.0 to establish scale.

* $p < 0.01$.

was calculated using a one-way analysis of variance. The resulting ICC(1) shows that 17.2% of the variance in initial momentum perceptions is a function of regiment ($p < 0.05$). This value is above the median ICC(1) value of 0.12 reported in previous studies (James 1982), providing reassurance that initial momentum perceptions are due, at least in part, to regimental affiliation.

Change-Related Commitment. Eight items assessed participant's agreement with and willingness to work toward the goal (average $\alpha = 0.93$). This measure was adapted from a 10-item measure of program commitment used by Neubert (Neubert and Cady 2001) and based on the 7-item, self-report measure of goal commitment validated by Hollenbeck et al. (1989) with reported reliabilities of 0.90 and 0.89, respectively.

Frequency of Change-Related Interaction. Five items assessed perceived amount of change-related interaction among participants on a seven-point Likert scale (average $\alpha = 0.86$) also developed for this study. Items are reported in Table 2.

Development of New Measures

A multistage process proposed by Schwab (1980) and Hinkin (1998) was followed to develop items and scales for momentum and change-related interaction. A thorough review of the literature was conducted to generate the definition of change-based momentum. Using this definition as a guide, items were created that spanned this content domain. Specifically, for momentum, items were developed using the root terms of energy, enthusiasm, and momentum. For frequency of change-related interaction, items were built using conversations, discussions, and e-mail as the applicable communication vehicles. Preliminary items were reviewed and revised by subject matter experts. The revised scales were then presented to a focus group of subjects from the target population for review, and additional minor modifications were made.

In the final stage of scale development, the reliability and convergent and discriminant validity of momentum, commitment, and change-related interaction were analyzed using confirmatory factor analysis with LISREL 8.5 (Joreskog and Sorbom 1996) and maximum likelihood estimation. Table 2 presents the paraphrased wording, standardized coefficients, and Z-statistics for each item, as well as the composite reliability values for each of the scales used in this study across the four waves of data. A satisfactory fit was achieved in each of the four time periods as evidenced by a comparative fit index (CFI) value of 0.90 or greater (Bentler and Bonett 1980) and the ratio of chi-square to degrees of freedom for each time period of less than 3 ($t^1 = 2.52$, $t^2 = 1.73$, $t^3 = 2.46$, $t^4 = 2.97$; Carmines and McIver 1981). The discriminant validity of the scales was further verified by comparing the magnitude of the variance shared

Table 3 Variance Extracted (in Bold) and Shared Variance Estimates of the Scaled Measures Across Four Time Periods

	Construct	1	2	3
Time 1				
1.	Momentum	0.53		
2.	Change-related interaction	0.04	0.52	
3.	Commitment to the change	0.29	0.00	0.62
Time 2				
1.	Momentum	0.62		
2.	Change-related interaction	0.15	0.56	
3.	Commitment to the change	0.19	0.00	0.63
Time 3				
1.	Momentum	0.73		
2.	Change-related interaction	0.35	0.58	
3.	Commitment to the change	0.45	0.23	0.58
Time 4				
1.	Momentum	0.69		
2.	Change-related interaction	0.27	0.58	
3.	Commitment to the change	0.36	0.08	0.64

by any two constructs with the variance extracted from each of those constructs (see Table 3). In all cases, the shared variance was less than the variance extracted from each of the constructs, providing evidence of construct validity (Fornell and Larcker 1981). To provide further evidence of discriminant validity, confirmatory factor analysis was conducted for a one-factor, three-factor, and two different two-factor solutions across the four time periods. Results are reported in Table 4, indicating that the three-factor solution best fit the data.

Results

Event-Based Results

The event-based analysis focuses on the apparent or observable manifestations of change-based momentum using qualitative evidence. For Hypotheses 1 and 2, I analyzed the transcripts and presentation materials of the announcement meeting and two large-reach events (radio broadcast and corps briefing), respectively, and coded occurrences of urgency, feasibility/progress, and drama. Hypothesis 1 predicted that these three types of social information would positively influence initial change-based momentum. Several statements made by the commandant during the announcement conveyed urgency. There were several references to changes in the world (e.g., Bosnia) demanding that West Point officers be able to function in "dangerous and culturally diverse environments." He also acknowledged the extent of his concern by stating, "I want it to be West Point for the 21st century, not the 18th century." To emphasize the urgency of the message, several of the slides utilized exclamation points, including "They expect leadership from you!" Finally, to underscore the importance of and necessity for change, the commandant emphasized that he felt "very strongly about this."

Table 4 Confirmatory Factor Analysis of Momentum, Interaction, and Change-Related Commitment Across Models with Progressively More Factors

Model	χ^2	df	RMSEA	SRMR	NNFI	CFI	GFI	AGFI
Time 1								
One factor	1349.18	152	0.21	0.160	0.54	0.59	0.56	0.46
Two factor(a)	843.68	151	0.16	0.110	0.73	0.76	0.68	0.60
Two factor(b)	881.29	151	0.15	0.140	0.72	0.75	0.70	0.62
Three factor	396.88	149	0.08	0.065	0.90	0.92	0.86	0.82
Time 2								
One factor	916.79	152	0.26	0.190	0.47	0.53	0.46	0.32
Two factor(a)	636.04	151	0.20	0.150	0.66	0.70	0.56	0.45
Two factor(b)	510.39	151	0.15	0.130	0.75	0.78	0.67	0.58
Three factor	267.08	149	0.07	0.076	0.92	0.93	0.83	0.79
Time 3								
One factor	1304.41	152	0.22	0.120	0.64	0.68	0.54	0.43
Two factor(a)	908.64	151	0.19	0.089	0.76	0.79	0.62	0.52
Two factor(b)	761.81	151	0.14	0.088	0.81	0.83	0.72	0.65
Three factor	367.36	149	0.07	0.051	0.93	0.94	0.87	0.83
Time 4								
One factor	1820.24	152	0.27	0.150	0.54	0.59	0.45	0.31
Two factor(a)	1255.03	151	0.22	0.120	0.69	0.73	0.55	0.43
Two factor(b)	931.71	151	0.15	0.100	0.78	0.81	0.70	0.63
Three factor	442.03	149	0.09	0.052	0.92	0.93	0.85	0.81

To a lesser extent, the commandant conveyed his belief that the institution and its members were capable of change (feasibility). His slides contained passages noting that cadets are “proficient and bright,” and that certain patterns were already in place that were in line with the espoused change. In contrast, many dramatic elements were employed. The presentation included a photo of a cadet being hazed (screamed at) by three upperclassmen, all of whom were within six inches of the cadet’s face. The caption read, “Leadership?” This was followed by a photo of actual soldiers of various ranks fighting in Bosnia. Three clips from the movies *Braveheart* and *Glory* were also shown, highlighting charismatic leadership scenarios with powerful dramatic elements. Finally, during the question-and-answer portion, a cadet stood to ask the commandant whether there was any difference between being tough and being demeaning. He alluded to the movie clip of *Glory* just shown, asserting that the reason the main character was such a good soldier was because he had been “whipped [earlier] in the movie, which made him tougher.” After several harsh exchanges, the commandant finally shouted,

Sit down! They don’t take the hill because they are afraid of you, but because they respect you and their unit!

One observer later shared this dramatic event with other cadets, saying,

[The commandant] ripped one of my classmates apart who tried to argue that [we] need the four class system to develop toughness—I mean, he RIPPED this kid.

Other evidence of momentum emerged because the announcements were held on two consecutive evenings.

At the end of the first announcement, in which 48 cadets attended, the commandant announced that he would be holding a similar session for second-class cadets the next night. Interviews and correspondence with informants revealed that word spread very quickly after the meeting, there was a general “buzz” in the barracks about the change, and the rumor mill was “out of control.” A cadet leader sent an e-mail to second-class cadet officers, “highly” encouraging them to attend the next meeting. Attendance at the second meeting quadrupled from the night before. Combined, this evidence is consistent with Hypothesis 1, suggesting that social information plays an important role in establishing initial momentum.

Hypothesis 2 predicted that social information in the form of urgency, drama, and progress conveyed by the change leader during large-reaching change events throughout the change process would influence momentum. I coded two different events’ transcripts for these categories of social information: a “Call the commandant” radio broadcast aired in early December and a briefing to the entire corps in January. The radio broadcast lasted 32 minutes. Instead of offering any signs of forward progress, the first nine minutes were devoted to a discussion of a blood-branching¹ incident in which several first-class cadets, including the cadet first captain (from the first regiment), ignored the commandant’s admonishments that this ceremony was inconsistent with the broader cultural change and took part in it. The eight minutes following that were about incidental issues unrelated to the change. The next 14 minutes addressed questions regarding the change, with several references

to progress, including:

I think you have seen a number of new initiatives that have gone on ... it has to do with late lights. It has to do with additional passes for good unit performance. It has to do with things like accountability formation.

We are making meaningful change, but meaningful change means you have to participate in the enforcement of those changes. That requires a certain amount of maturity, and I believe we are capable of doing it.

The 17 minutes it took before the change was mentioned conveyed a low level of urgency. Within the change portion of the program, only one statement conveyed urgency:

We just cannot continue to treat this as a place where you train West Point cadets. Then you go out to the Army and you get retrained as an Army officer for four years by the U.S. Army. We just don't have time. You've got to be ready to go ... be responsible for the lives of men and women the minute you step foot out of this academy.

There was also very little drama, in part due to the medium, and in part because questions were read by a third party in a monotone voice, so any emotion attached to the original question was removed. The only drama occurred in the last minute of the program, and only after the host had started to sign off. The commandant interrupted and asked for 10 more seconds of airtime. When granted, he made the following statement:

We need to move into the 21st century. I am not going to move there alone. I want cadets—thinking cadets—mature cadets—cadets willing to take responsibility—to step up to the plate and move us into the 21st century. The tradition of West Point is not pinging, it is not blood branching, it is not sophomore nonsense. It is Grant, it is Lee, it is Eisenhower, it is Sherman, it is McArthur. It is the wars that our country has fought and won. That is what tradition at West Point is all about.

Although a dramatic passage, the timing detracted from its impact. Overall, the radio program included very few elements of drama, urgency, and progress surrounding the change.

In contrast, the briefing to the entire corps included many instances of urgency, progress, and drama. Many slides conveying urgency in the announcement meeting were repeated in this presentation. Several statements made by the commandant also conveyed urgency, including:

It's time to stop the slide of West Point being mired in the 1890s leadership style and the way people think of us in the field and move to the 21st century.

For some unknown reason, we have a culture of cynicism. I am urging you to do away with it.

Quite a bit of time was devoted to summarizing and discussing the progress that had been made since the change was announced. In fact, six new slides were added to the original announcement slides highlighting specific instances of progress. The commandant

reinforced this message of progress in his speech:

I think a lot of pretty good things have been going on around here. Are we as good as I'd like to be? No, but a lot of pretty good things are happening.

At the beginning of the year...there was considerable movement forward and I commend you for what we've done to move forward.

Finally, there were several dramatic elements in the briefing, most notably, video clips from *Men in Black* (depicting an automaton West Point graduate) and *Gettysburg* (depicting a powerful leadership scene with dramatic music, yelling, and gun battle). Together, the briefing had many more of the hypothesized elements of social information than the radio broadcast.

The pattern of impact that these two events had on momentum is supported by the write-in comments from the surveys following each event. When asked about the reasons for any perceived change in momentum in December, only one respondent mentioned the radio program:

The commandant has had more time to discuss these changes and present his ideas to the corps, especially over his new radio program.

In contrast, 63 respondents (48.8%) mentioned the commandant's corps briefing as the cause for an increase in momentum in January. The following represent typical responses:

Hearing the commandant explain his ideas in person and how they applied to the future of the corps of cadets seemed to generate an understanding for the change West Point will be undergoing, and a new enthusiasm.

The briefing by the commandant was the first opportunity many of us had to hear directly from him on the issues at hand. I think momentum increased as a result of the meetings.

Taken together, these qualitative observations are consistent with Hypothesis 2.

Hypothesis 3 proposed that when significant events shift attention away from the change, it will negatively impact change-based momentum. One particular event that occurred during the change involved a critical mass of change participants and provided an opportunity to test this hypothesis. As mentioned earlier, the lower response rate at Time 2 was attributed to the fact that cadets were preparing for term-end exams. Many of the write-in comments in December (24.5%) mentioned this as the primary reason for a decrease in momentum.

The momentum has decreased. With people studying for [term-end exams], no one really has the time to talk about anything except classes.

I think that once academics started to get heavy, people began to forget about this change.

Table 5 Results of Repeated Measures One-Way Analysis of Variance Comparing Momentum in Two Time Periods Among Cadets and Officers

Source	df	Sum of squares	Mean squares	F
Time 1-Time 2				
Cadets				
Within subjects	78	64.04		
Momentum	1	6.20	6.20	7.93*
Residual	77	57.84	0.78	
Time 1-Time 2				
Officers				
Within subjects	20	22.32		
Momentum	1	2.05	2.05	1.82
Residual	19	20.27	1.13	

Notes. N = 98.

* p < 0.01.

Quantitative evidence confirms this relationship. Using matched respondents from Waves 1 and 2 ($N = 98$), changes in momentum perceptions were compared among cadets and officers, with the assumption that cadets would be affected by the demands of term-end exams while officers would not. A within-subject ANOVA repeated measures design was used to control for response differentials across the two time periods. The results are reported in Table 5. Contrasts showed that cadets' reported momentum was significantly lower at Time 2 than Time 1, $F(1, 77) = 7.93$, $p < 0.01$, while officers reported no significant change in momentum across the same time periods, $F(1, 19) = 1.82$, ns. Taken together, this evidence is consistent with Hypothesis 3.

Survey Results

Means, standard deviations, and correlations among survey variables are reported in Table 6. Mean levels of the independent and dependent variables for the subset of respondents that provided data at all four time periods ($n = 56$) are plotted in Figure 3, showing

that perceptions of change-based momentum fluctuated across the four waves, with significant shifts between Times 1 and 2 ($F = 6.26$, $p < 0.02$), and Times 2 and 3 ($F = 12.15$, $p < 0.01$). As might be expected, change-related interaction was at its highest at the start of the change, when participants were attempting to make sense of the change and learn more about its goals and objectives. Even though interim momentum fluctuated, the cumulative measure of overall goal attainment rose steadily over time. Commitment in this matched subset of respondents was stable and uniformly high.

To check the representativeness of these respondents to the broader sample, a comparison was made between those responding at 1, 2, 3, or all 4 time periods. Results showed that those responding at all four time periods were more committed than those only responding once (means of 5.37 and 4.57, respectively, $p < 0.05$), but not significantly different from two- and three-time responders. There were no significant differences in momentum, goal attainment, or interaction and number of response times, suggesting that this sample is fairly representative of the overall organizational membership, but perhaps more committed than at least part of the respondent population. Because the low response rate at Time 2 placed an upper limit on the available matched sample across all four waves of data, and because the results of Hypothesis 3 showed significant distractions at Time 2, this wave of data was dropped from subsequent analysis, providing matched data for 92 participants across the remaining three time periods.

Hypotheses 4–8 are tested using LISREL 8.5, with covariance matrix input. Because no estimate of error was available for the single-item measure of goal attainment, the error variance was set to zero to provide a conservative test of the model (i.e., path coefficient was not disattenuated for unreliability). Composite indicators were used to measure the multi-item latent variables in the model to improve the ratio of sample size and parameter estimates (cf. Seibert et al. 2001).

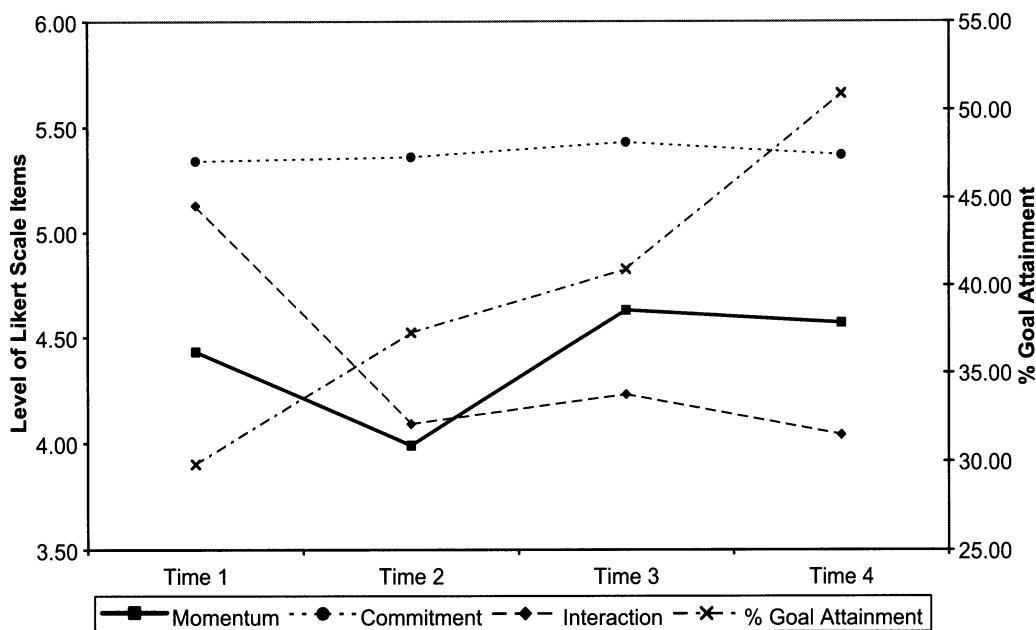
Table 6 Descriptive Statistics and Correlations for Matched Respondents at Three Time Periods^a

Variable	Mean	Standard deviation	1	2	3	4	5	6	7	8
1. Trajectory gap	2.02	0.67	—							
2. Change commitment (Time 1)	5.29	1.27	0.23	—						
3. Frequency of change-related interaction (Time 1)	5.10	1.10	0.10	0.17	—					
5. Momentum (Time 1)	4.40	1.27	0.30	0.46	0.18	—				
6. % goal attainment (Time 3)	38.57	21.11	0.12	0.09	0.19	0.32	—			
7. Change commitment (Time 3)	5.49	1.23	0.10	0.64	0.27	0.44	0.26	—		
8. Frequency of change-related interaction (Time 3)	4.29	1.14	0.06	0.33	0.40	0.31	0.23	0.52	—	
9. Momentum (Time 4)	4.54	1.40	0.11	0.20	0.11	0.29	0.40	0.55	0.61	—

^a N = 92 matched respondents at Waves 1, 3, and 4; Time 2 was dropped from path model for hypothesized distractions and low response rate.

** Correlations greater than 0.30 are significant at $p < 0.01$.

Figure 3 Trend Analysis of Matched Respondents Across Four Time Periods^a



^a $n = 56$.

The loadings were set to 1 to scale the latent variables (Bollen 1989), and the error variance was set equal to one minus the reliability of the scale times the scale variance to accurately account for measurement error (Hayduk 1987). The hypothesized model fit the data well ($\chi^2 = 18.70$, $p < 0.01$, $df = 7$, $CFI = 0.94$, $GFI = 0.95$).

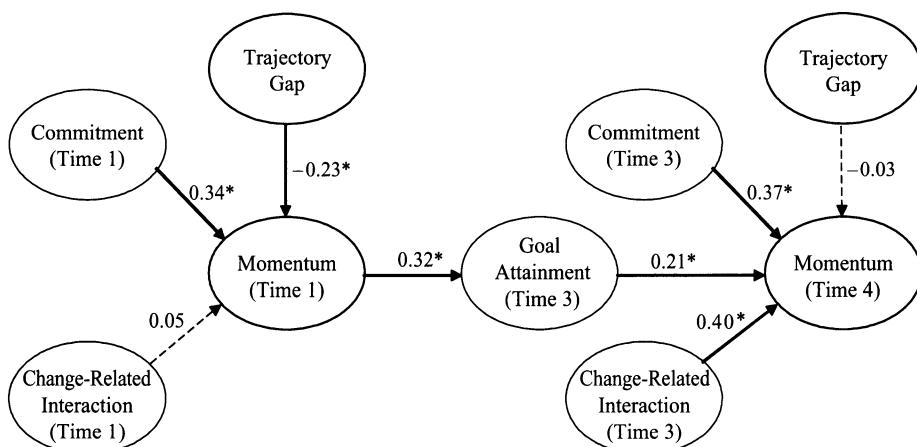
Examination of the standardized parameter estimates indicated that six of the eight hypothesized relationships were significant and in the predicted direction (see Figure 4). Change-related interaction was not related to change-based momentum at Time 1 ($\beta = 0.05$ ns), but was a significant predictor of change-based momentum across Times 3 and 4 ($\beta = 0.40$, $p < 0.01$),

providing partial support for Hypothesis 4. Hypothesis 5 predicted that the gap between regiments' stasis-based trajectories and the change-based trajectory would predict momentum perceptions. Qualitative evidence obtained immediately after the announcement meeting illustrates the regimental differences in starting trajectory. From the first regiment:

I managed to get into a pissing contest with the new [commandant] tonight... I did not give up, I did not back down, and I refuse to be one of those timid souls whose neck is merely a spring that shakes his head in agreement.

As for the changes with the plebes, I guess I can accept all of them except for one. The damn sock issue. I don't believe it's so much of a haze thing as much as it is a way

Figure 4 LISREL Path Coefficient Results for Perceptions of Change-Based Momentum^a



^a Path coefficients shown are standardized, with supported paths in bold.

$n = 92$. * $p < 0.01$.

to recognize them... I mean, it doesn't have to be their socks, but we do need some way to identify them....

In contrast, comments from the fourth regiment were generally more positive and supportive:

I thought the [commandant's] brief last night was excellent and made me reconsider some of my opinions concerning some of the areas of interest. I believe that instituting his ideas will improve the corps...

In support of Hypothesis 5, the trajectory gap was significantly and negatively related to change-based momentum at Time 1 ($\beta = -0.23, p < 0.01$), and, as expected, was no longer a significant predictor of change-based momentum ($\beta = -0.03, \text{ns}$) later in the change process. Commitment was significantly related to change-based momentum at Time 1 ($\beta = 0.34, p < 0.01$) and longitudinally predicted change-based momentum at Time 4 ($\beta = 0.37, p < 0.01$), supporting Hypothesis 6. With respect to later commitment (i.e., Time 3), one cadet stated:

As a plebe, it is easier to commit to these changes now, after the commandant's brief, because there is less animosity toward us from the upperclassmen.

Finally, change-based momentum at Time 1 positively predicted goal attainment at Time 3 ($\beta = 0.32, p < 0.01$, Hypothesis 7 supported) and this level of goal attainment predicted momentum at Time 4 ($\beta = 0.21, p < 0.01$, Hypothesis 8 supported).

Discussion

The primary goal of this study has been to move beyond "strategic persistence" to a more energy-infused conceptualization of momentum experienced in the pursuit of a new trajectory. This study makes several contributions to organizational change research. First, it provided a theoretical distinction between stasis- and change-based momentum and validated a measure of the latter that helps explain how events, sense-making activities, and cumulative progress lead to increased energy and, ultimately, the attainment of change goals. In a triangulated fashion, this study explored both the manifestation of momentum following specific change-related events and fluctuations in individual perceptions of momentum over time because organizational momentum is generated and maintained by shared perceptions and interaction. As momentum builds, there should be evidence of coalescing perceptions of momentum in the intraclass correlation coefficients over time. A post hoc analysis by class supports this pattern of increased agreement on momentum perceptions ($ICC_{T1} = 0.07, p < 0.10$; $ICC_{T3} = 0.11, ICC_{T4} = 0.14$, both $p < 0.05$).

Second, this study adds to the growing body of research exploring the relationship between managerial action and momentum (e.g., Gersick 1994, Ginsberg and Venkatraman 1995, Hambrick et al. 1993). The findings

of this study provide empirical evidence that social information conveyed by a change leader in an announcement meeting and in a large-reaching change event influences change-based momentum. Prior momentum research has focused on the cognitive experience of the strategic decision maker (Dutton and Duncan 1987, Ginsberg and Venkatraman 1995). These results build on that research by better explicating the momentum experience for multiple change participants *after* the decision has been made to pursue a course of action. The results of this study also provide suggestive evidence that significant alternative events requiring a prolonged energy investment and/or a critical mass of change participants will detrimentally affect momentum for the focal change.

A third contribution of this study derives from its longitudinal design, which provided a unique opportunity to identify various factors that contribute to change-based momentum during the early stages of strategic change and to examine patterns over time. Results suggest that the gap between various subgroups' stasis- and change-based trajectories influences their initial perceptions of change-based momentum. These starting positions became irrelevant later in the change process, suggesting that movement had indeed occurred. There was also a tight coupling between momentum and accrued progress. Preliminary evidence suggests that change-based momentum predicted subsequent perceptions of goal attainment. This level of goal attainment similarly predicted subsequent momentum, supporting a spiraling relationship similar to that found in other studies (Lindsay et al. 1995, Vallerand et al. 1988). Taken together, these findings provide new insight into a more dynamic, energy-infused form of momentum.

The relationship between frequent change-related interaction and momentum appears to be more complicated than originally predicted. The graphic trends reported in Figure 3 illustrate the prevalence of interaction early in the change compared to later time periods. However, this interaction was not related to initial perceptions of change-based momentum, although it was a significant predictor later. There are two potential explanations for this pattern of results. First, it is possible that interaction patterns differ in functionality over the course of the change such that early sense-making activities give way to sense-giving activities (Gioia and Chittipeddi 1991). Thus, the early interaction observed in this sample could be the result of sense-making activities as individuals attempted to understand the goal and path of movement. Once the trajectory was better understood, interaction could focus more on sense-giving activities, such as conveying enthusiasm about the change. Alternatively, it is possible that this interaction has a lagged effect on momentum perceptions, which would explain the insignificant cross sectional impact, but the significant longitudinal influence on momentum. To further explore these circumstances, a post hoc

analysis examined the potential influence of group-level momentum perceptions on individual perceptions. I aggregated momentum perceptions (excluding the individual's score to avoid part-whole contamination) by a combination of class and regiment ($ICC(1) = 0.22$, $p < 0.05$). This variable was entered as a predictor of individual change-based momentum at both Time 1 (cross sectional) and at Time 3 (predicting momentum at Time 4). The group score was not a significant predictor of change-based momentum at Time 1, but was significant at Time 3 ($\beta = 0.19$, $p < 0.05$), supporting a causal relationship between the group's momentum and an individual's subsequent momentum. The model was rerun after dropping the insignificant path at Time 1. Although the addition of this variable did not significantly improve the fit of the model ($\chi^2 = 20.52$, $df = 9$, $p = 0.01$, CFI = 0.94, GFI = 0.95) compared to the model reported earlier, the pattern of results supports the prediction that social influence has a lagged impact momentum.

A key strength of this study is in clarifying the distinction between inertia and momentum, or persistence and pursuit. A theoretical distinction between inertia, stasis-based and change-based momentum was proposed. I have suggested that inertia is useful for predicting a tendency to maintain a particular path, but it does not explain the level of effort and impetus behind that persistence. Stasis-based momentum focuses on the energy associated with maintaining a trajectory, more in keeping with the time-based findings of earlier studies (Dyck 1995; Gersick 1991, 1994). This study provides evidence that there is a third type of energy, change-based momentum, which describes the energy associated with pursuing a new trajectory. Both types of momentum are useful, but likely apply at different points in a change process. For example, the initial trajectory gap highlights the tension between stasis-based and change-based momentum early in the change. Later in the change process, 16% of write-in comments attributed an increase in momentum to "time passing" and "normal progress." This may be evidence of stasis-based momentum once again emerging as part of the normal progression from change, to stasis, to inertia, similar to the progression of instances of institutionalization described by Lawrence et al. (2001). Another strength of this study is that the combination of quantitative and qualitative data highlights both observable and perceptual aspects of change-based momentum and provides a window into a more dynamic and process-based construct. Results highlight the wealth of information available *between* data collection points and reinforce the importance of attending to short-term fluctuations and interim events that impact perceptions, attitudes, and effort over the course of a change. Finally, the recognition of a bias toward persistence over pursuit in the way that change is conceptualized and studied can help researchers begin to examine the positive and dynamic aspects of change.

Limitations and Future Research

As with any study, there are limitations that should be recognized. It is conceivable that the military setting might contribute to social desirability response patterns. However, the data suggest that this did not occur. From a statistical perspective, social desirability would be evident if the means of the focal variables were skewed or if there were a lack of variance on these measures. Across respondents, this was not the case. In addition, the evidence of discriminant validity among the measures belies the presence of social desirability responding.

Another concern is that a single case within a military setting may ultimately limit the generalizability of these results. As with all research, care should be taken in applying these results to other settings. This study may be better understood as a validation and preliminary examination of change-based momentum, and further research is needed in other settings and with other types of change. At the same time, the stereotypical understanding of a military setting is much different from the reality that I observed at West Point over the course of a year. These students are not yet members of the military, although they are clearly being socialized for such an environment. The chain of command is certainly an important aspect of the culture, but so too is their honor system (e.g., "Cadets do not lie, cheat, or steal, nor tolerate those who do"). Perhaps because of the academy's mission (to train future leaders), the expectation is to "be your own person," "articulate your views," and "stand up for what you believe in no matter the consequences." In fact, the qualitative evidence reported above revealed several instances of vocal disagreement with the course and direction of the change. This occurred in direct interactions with the commandant, in interviews, and in write-in comments. Rather than limiting the generalizability of the results based on military affiliation, perhaps the more salient factors are the size and scope of the change and the cultural context of the organization.

A final limitation is that the data were collected during the early stages of a change that was likely to span several years. The timing of this study was purposeful, aimed at clarifying the development and dynamics of momentum once a strategic decision has been made (Dutton and Duncan 1987). However, this choice limits the study in other ways. Although the early entry into the change environment was beneficial for examining early patterns of momentum, it is possible that my presence and the distribution of the surveys may have contributed to perceptions of change-based momentum. Several participants interviewed were curious about my role, and my presence may have contributed to a sense that this change was more visible and important than it otherwise might have been. The timeframe also precluded consideration of long-term change outcomes, which would be

important for gaining a better understanding of momentum's impact on project completion and success.

This study provided the opportunity to examine the impact of change-based momentum on goal attainment in the early stages of change. In the long term, the popular belief is that momentum can accelerate the change process and is a necessary ingredient for successful organizational transformation (Jick 1995, Kotter 1995). Future research can build upon the results of this study by more specifically examining momentum's impact on project completion, morale, and performance by comparing changes with different patterns of momentum, of different duration, and in multiple contexts. Future research can also explore how various social processes, communication medium, and communicator impact momentum. For example, the impact of the briefing involving the entire corps of cadets was far greater than the early announcement meetings where only a subset of personnel participated. The quoted passages regarding this event suggest that hearing a message in a crowded setting and "in person" is an important factor that served to codify participants' understanding and build momentum. Such an assertion has been supported in the sociology literature (cf. Freedman et al. 1980).

A theme emerging from recent research underscores the importance of managing energy during change (e.g., Cross et al. 2003, Quinn and Dutton forthcoming, Senge et al. 1999, Welbourne et al. 2000). Future research can examine momentum over time to determine whether it can be effectively used to track and modify the energy levels associated with the change process. However, this requires research that specifically uses more fine-grained or continuous measures of momentum. In this study, several informants were asked to retrospectively chart momentum fluctuations over the prior few months by drawing a graph of momentum over time and labeling any inflection points. Interestingly, these momentum maps were remarkably similar in shape, suggesting that there is some aggregate-level agreement on the causes and consequences of momentum fluctuations. A controlled laboratory study may be an effective approach for studying "maps" of momentum across multiple change contexts to determine how and why they vary.

Practical Implications

This study provides evidence that change leaders can manipulate momentum perceptions via carefully timed announcements and updates throughout the change to maintain its energy. In contrast to the adage that "no news is good news," when trying to maintain momentum, the message may be "the more news relevant to the focal change the better." At a minimum, it may be beneficial to refresh the message to maintain momentum. In addition, significant events that divert attention also detract from momentum. In other words, there is a

limited amount of energy available that must be shared by multiple initiatives. Managers should consider this in timing announcements and pacing activities to sustain a threshold level of momentum.

It is also important for change leaders to recognize the short-term nature of momentum. Rather than focusing attention on the overall progress made toward project completion, the focus should be on the progress achieved in the recent time period. These alternative approaches have been exemplified in fundraising efforts. Some donation drives show total contributions collected toward some overall goal on a thermometer scale. Others set short-term hourly goals during the course of a broadcast. The results of this study suggest that the thermometer approach will be less likely to generate momentum during the early stages of a change. Instead, leaders may see better results if they focus on the short-term progress that has been made.

This study represents a first exploration into a dynamic, energy-infused conceptualization of change-based momentum during organizational change. The combination of quantitative and qualitative data collected over time permitted an examination of several important relationships. It is hoped that this conceptualization of momentum will generate a closer examination of the distinctive nature of the social energy associated with change.

Acknowledgments

The author is grateful for helpful comments and suggestions from Bert Cannella, Jim Jansen, Kevin Steensma, Linda Trevino, Dick Woodman, and Pat Wright on earlier versions of this manuscript. Scott Poole and the three anonymous reviewers deserve particular thanks—their thoughtful and challenging comments significantly improved this paper. The author also acknowledges support provided by Cornell University's School of Industrial and Labor Relations during data collection. The views, opinions, and/or findings contained herein are the author's and do not necessarily reflect those of the U.S. Department of the Army.

Endnote

¹After obtaining a pin signifying their chosen branch of service, first-class cadets place it on their chest without the protective backing and ask other cadets to hit it. Some cadets describe this as a ceremonial tap that does not draw blood, but many others report the contrary (as implied by its name).

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