Time in Bureaucracies: Organizational Determinants and Effects of Temporal Orientation

Max Kuhelj Bugaric

Introduction

Although research directly addressing the role of time in international relations is relatively recent, the topic itself is not. Perhaps the most crucial question is that of how temporal considerations relate to strategy formulation: A strategy that would seem to work in the short term might fail in the long term, and vice-versa. The question of “what” is in this context difficult to consider separately from the question of “when”; indeed, it would be analytically counterproductive to try to draw a clear distinction between them. As Carl von Clausewitz writes in his seminal work *On War*, “even the ultimate outcome of a war is not always to be regarded as final. The defeated state often considers the outcome merely as a transitory evil, for which a remedy may still be found in political conditions *at some later date* [emphasis mine].” He makes the salience of temporal considerations even more apparent when discussing action and inaction in a confrontation: “If two parties have prepared for war, some motive of hostility must have brought them to that point. Moreover so long as they remain under arms . . . that motive of hostility must still be active. Only one consideration can restrain it: *a desire to wait for a better moment before acting* [emphasis in original].”

Clausewitz’ focus may have been on military strategy, but his observations about the importance of time are no less applicable to politics in general. After all, insofar as politics is about actors with different preferences, war is just an extreme case, as Clausewitz himself famously points out. Over the course of the last two decades, international relations and, to a degree, comparative politics as well, have begun taking explicit note of the importance of time, with fully-fledged theories slowly emerging. Works in comparative politics have thus applied observations about time horizons to diverse topics such as bar-

1. I would like to thank Joshua Kertzer for his helpful feedback on this paper.
3. Ibid., 82.
4. Ibid., 87.
gaining between domestic elites, the use of foreign aid by dictators, and states’ efforts to combat AIDS. In international relations, the role of time has been addressed in the context of bargaining models of interstate conflict of cooperation under the conditions of an iterated Prisoner’s Dilemma game and of cooperation in the provision of global public goods. Recent research has also investigated the effect of the characteristics of different languages on speakers’ time horizons. Perhaps most significantly, Ronald Krebs and Aaron Rapport have incorporated the psychological literature’s findings about the link between time horizons and levels of construal to individual-level decision-making in international relations and David Edelstein has developed a self-contained theory about the role of time horizons in systemic power transitions. In a related vein, Chad Nelson discusses the role of time horizons in responses to the emergence of the United States as a hegemon.

Even a brief glance at the above works reveals that Kenneth Waltz’s “second image,” “the internal organization of states,” is largely absent from the discussion. This is surprising given the voluminous literature on various aspects of governmental apparatuses, especially on the crucial role of bureaucratic organizations in influencing policy formulation and shaping implementation. Furthermore, the field of management and orga-


For bureaucracy and bureaucratic politics more generally, see James Q. Wilson, Bureaucracy: What Gov-
nization studies has devoted considerable attention to the role of time in organizations, but the findings have gone largely unnoticed in both international relations and in political science more generally. These heretofore underutilized works must be interpreted within a broader bureaucratic politics framework to be of use to international relations and security studies, which is precisely what this paper aims to do.

More specifically, the question is: How do bureaucratic organizations perceive and shape time, and what effect does that have on how they function? The primary goal of this paper is, in other words, to investigate how temporal discounting—which essentially describes the extent to which an actor is future- or present-oriented—operates on an organizational level. The paper will also explore to which degree extant observations about perceptions of time and the resulting pathologies apply to a unitary actor model of bureaucratic organizations, and, relatedly, attempt to address the issue of modeling the time horizons of organizations with large internal variation in patterns of temporal discounting.

The paper proceeds by first constructing a prototheoretical framework within which the findings of the management and organizational studies (MOS) literature will be interpreted. The MOS literature is then broken down into several subtopics relating to time in organizations, which are sequentially discussed in a bureaucratic politics context. Namely, the paper first discusses the phenomenon of the construction of time in organizations. The question of how exactly choices in organizational structure and dominant management patterns affect the length of time horizons is addressed next. Another subsection is devoted to a discussion of the organizational effects of time horizon length. The paper concludes with an analysis of implications for the military innovation debate, and with brief observations about potential limitations and suggestions for future research.

**Theoretical Framework**

One option, of course, would be to operationalize time horizons as an actor’s discounting rate, but this is problematic when bureaucratic organizations are the object of analysis. First, although metrics that would allow us to estimate the degree of long-term orientation on the individual-level do exist, they do not tell us much about more fundamental attitudes toward time and can be used only to gauge the effect of high or low discount rates as an intervening variable. Furthermore, due to the lack of a meaningful quantity...
that would directly measure organizational time horizons, the latter generally have to be quantified via a proxy for which comparisons across organizations with different core missions will be infeasible. It would be difficult, if not impossible, to control for what James Wilson terms “organizational mission,” “[a] sense of [which] confers a feeling of special worth on the members, provides a basis for recruiting and socializing new members, and enables the administrators to economize on the use of other incentives [emphasis mine].”

Even if there existed a metric that would perfectly capture time horizons and nothing but, comparing organizations on this dimension would still be problematic, as if it is indeed the case that, as Wilson argues, organizational mission itself acts as a package of incentives, the issue that arises is the same as before: It is impossible to control for the influence of core missions. If time horizons were to be treated as an instrument to be used in exploring other aspects of organizational behavior—that is, if time is understood to not have a completely independent effect and acts as a mere “mediator” in other causal pathways—proxy metrics are a completely acceptable means for studying behavior that is influenced by the temporal orientation of the actor.

The above is not to say that testing how well time horizon proxies perform as predictors of outcomes related to organizational behavior is inherently unhelpful, but that the merits of such an approach are sharply bounded and that, due to their non-ontological nature, they are not especially conducive to the construction of grand theory. They can at best serve as auxiliary components of middle-range theories, which are good means for understanding phenomena of interest, but have difficulty presenting themselves as pioneers of new research directions. That is the role of grand theory. The object of this paper is to shed light on the perception and construction of time in organizational settings, for which purpose approaches that treat time horizons as essentially exogenous simply do not suffice. A study of conceptions of time as a central driver of organizational behavior requires not only the investigation of related causal paths but also the examination of constitutive relationships. Hence, an alternate angle is required.

The chosen approach relies on a model of decision-making developed by John Steinbruner in his work *The Cybernetic Theory of Decision*. His most fundamental point is that “adaptive logic affects human behavior more significantly than is generally admitted,” namely, he asserts that “it is cognitive operations of the human mind working in interaction with the organizational structure of the government which set workable limits on highly diffuse decision problems, and it is cybernetic theory, thus supplemented, which offers a base paradigm for political analysis competitive with the rational position.” The key advantages of using Steinbruner’s model are that it, first, easily accommodates a conception of time horizons as endogenous to organizations—and is thus conducive to an analysis of the pertinent constitutive relationships—and, second, allows us to extrapolate from that and identify the causal pathways in organizational decision-making that are shaped by perceptions of time.

20. Ibid., 14.
Problems of temporal distance are customarily conceived of as uncertainty compound-
ing, but this perspective—while having intuitive appeal—fails to get to the heart of the
matter, even misconceptualizing it to a certain extent. This is primarily a consequence
of time horizons being stylized as internal to an actor where they are in fact being ex-
ogenously assumed. It is here that the cybernetic paradigm comes into play. It treats
decision-making as a non-rational process whereby environmental stimuli pass through
a cognitive filter that is permeable only to certain quantities. Steinbruner calls this filter
“an established highly focused feedback channel,” due to the operation of which “many
factors which do in fact affect the outcomes have no effect in [the] decision process.”
As Steinbruner further explains, “[c]ybernetic mechanisms which achieve uncertainty
control do so by focusing the decision process on a few incoming variables while elim-
ninating entirely any serious calculation of probable outcomes.” In organizations, this
yields the following type of decision process, where “measures of performance” act as
the abovedescribed filter:

\[ \text{Organizations have to establish measures of performance and act to hold}
\text{these measures at levels deemed appropriate. As long as acceptable levels of}
\text{performance are being registered, the organization proceeds routinely, with}
\text{subunits performing their programmed activities without intervention. The oc-
\text{casion for what we would call a decision (a choice between alternatives) arises}
\text{when an established performance measure fails to achieve the levels defined}
\text{as acceptable.}} \]

Armed with this theoretical framework, it is possible to conceptualize temporal orienta-
tion as further focusing the decision-maker’s otherwise fundamentally substantive problem-
oriented feedback channel. Even if the actor is not calculating outcomes, the same value of
the same variable could signify “business as usual” if time horizons are short, but prompt
readjustment if time horizons are long. This is not because outcomes are being calculated,
but because the same stimulus may prompt a different reaction from an actor conditioned
to reacting to immediate threats than from an actor conditioned to reacting to long-term
threats. The use of the phrase “long-term threats” may make it seem as if calculation is be-
ing introduced to an essentially calculation- and forecasting-free model, but this is not so:
long-term threats manifest themselves in different ways than short-term threats, which is
why they are also measured by different sets of variables. In short, therefore, time colors
a feedback mechanism focused on certain kinds of threats, and makes it incorporate new
variables relevant to the short- or long-term and discard those that are perceived as irrel-
levant. Even more simply put, long time horizons lead to a focus on different variables
than short time horizons, and even when the same variables are relevant, the same val-
ues have different meanings for actors with different temporal orientations. For example,
in the military sphere, this means that to a decision-maker with short time horizons, an

22. Ibid., 66.
23. Ibid., 74.
increase in the production of ball bearings—which was during the Second World War perceived as a crucial bottleneck in the German aircraft industry—seems benign enough, but may set off alarm bells if the decision-maker has long time horizons.

Temporal Orientation in the Management and Organization Studies Literature

This section integrates research on time in organizations from the management and organization studies (MOS) literature and interprets it in a bureaucratic politics context. It discusses the constitutive relationships pertaining to time horizons, as well as the effects of different time horizons on organizational functioning and bureaucratic politics more generally.

There exists a variety of approaches to bundling together different strands of the management and organization studies (MOS) research on organizations, but what is key here is constructing “bins” that make sense in a bureaucratic politics context, facilitate the identification of aggregation and disaggregation paths—namely, from the organizational level to the work group and finally to the individual level, as well as in the opposite direction—and can serve as an aid for thinking about constitutive as well as causal relationships without imposing an artificial divide between the two. The categories constructed for this purpose—(1) time as an organizational phenomenon, (2) organizational structure, and (3) organizational goals and incentive structures—group together and integrate MOS research on the nature, causes, and effects of time horizons. They thus also serve as a conceptual “ladder”: climbing up or down the ladder should not only help identify where in


organizations time is constituted but also help tackle two closely related questions. First, in which direction—up or down the organizational hierarchy—aggregation of the causal effects of organizational time horizons should proceed, and second, which level of analysis should be seen as most pertinent and used as a platform for the exploration of other salient puzzles in bureaucratic politics.

**Time as an Organizational Phenomenon**

This first category aims to capture the conclusions of studies that conceptualize time as an inherent “property” of organizations; that is, they treat time horizons and time not so much as endogenously constructed but rather as innate to organizations.

Perhaps the richest description of time as an organic element of day-to-day functioning of organizations comes from the work of Wanda Orlikowski and JoAnne Yates, who keep their conception of time above the objective/subjective divide. In their view, “time is experienced in organizational life through a process of temporal structuring that characterizes people’s everyday engagement in the world. As part of this engagement, people produce and reproduce what can be seen to be temporal structures to guide, orient, and coordinate their ongoing activities.” They thus note that having a “closed” or “open-ended” “temporal orientation,” with the former corresponding to short and the latter to long time horizons, is not a fixed property of organizational actors, and that shifts from one to the other and even adoption of both simultaneously can occur “depending on the activity or pressures at hand.” However, this does not mean that time horizons are ever-fluid and that organizations are forced to function in some sort of postmodern soup of temporal uncertainty; indeed, they could not.

Rather, while the potential for shifts in temporal orientation does exist, the likelihood of such shifts actually occurring depends on how deeply rooted time horizons are. As Orlikowski and Yates put it, “[h]ighly institutionalized and widely recognized temporal structures, while always potentially changeable, are usually changed only as the result of explicit and considerable effort, investment, and groundwork.” Time horizons, therefore, do operate at the level of the organization as a whole, but the question of how stable and how uniform they are depends on the degree of association with patterns of core organizational activities and the influence of reinforcement through other means such as socialization.

Another perspective similarly conceptualizes time as an organic organizational element, but more explicitly outlines the pertinent causal paths and constitutive relationships. Namely, Richard Butler posits that organizational time simultaneously shapes “decision making and learning” and is shaped by the “organizational and institutional context within which a timeframe is located,” with interaction also being a possibility.

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27. Ibid., 691.
28. Ibid., 688.
identifies four types of time, and links them to particular kinds of organizations: “clock
time” in “bureaucracies,” “organic time” in “collectives,” “strategic time” in “games,”
and “spasmodic time” in “garbage-can” organizations.  

Obviously, for the purposes of bureaucratic politics, clock time is most significant, but organic time is also important,
as specialized parts of bureaucracies like task forces, elements of R&D bureaus consti-
tuted and reconstituted on an ad hoc basis, such as design and engineering teams, and
even the occasional research laboratory often operate in a manner similar to that which
characterizes collectives; they function as “relatively small professional organization[s] in
which there is a lack of codified information and experts need to work together very
closely through mutual adjustment.”  

Per Butler’s typology, both bureaucracies and collectives have long time horizons, in the sense that clock time facilitates bureaucracies’
thinking in terms of constants, and organic time is characterized by a rooted tendency to
pay foremost attention to the “environment of processes.”

Even though Butler characterizes both bureaucracies’ and collectives’ “congruence of
visions” as “high,”
important differences between them do exist. To capture the effects
of the institutional context, he defines two dimensions: “comparability of norms,”
which describes how prominently an organization treats other organizations as reference points,
and “clarity” of norms. In bureaucracies, comparability is low and clarity is high, whilst
in collectives, both comparability and clarity are at a medium level.  

Together with the above-described way in which organic time engenders sensitivity to the environment, this
suggests that time is more malleable in collectives than in bureaucracies and, by impli-
cation, that bureaucracies with embedded collectives, the latter often being relatively in-
sular and functioning as communities unto themselves, will be more likely to adapt to
changes and tailor time horizons to said changes. Much like the Orlikowski and Yates
piece, Butler’s work suggests that there is a need to keep digging to uncover the causal
paths related to time horizons, but nonetheless provide a solid foundation for under-
standing the pertinent constitutive relationships.

Organizational Structure

This section describes the influence of organizational structure on time horizons, and ex-
amines the degree of causal leverage that organizational structure as a category of vari-
ables can be said to possess.

On a preliminary note, the MOS research analyzed and incorporated in this section no
longer deals with organizations in general, but with family firms and firms more broadly,
which might make it seem inapplicable to bureaucratic politics. One hardly need go be-

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16, no. 6 (November 1995): 926.
31. Ibid. 936–937.
32. Ibid. 932–933.
33. Ibid. 932.
34. Ibid. 938.
35. Ibid. 939.
Beyond the title of Graham Allison’s *Public and Private Management: Are They Fundamentally Alike in All Unimportant Respects?* to be led to question the applicability of management and entrepreneurship research to government bureaucracies, but at least insofar as it is concerned with time horizons, the findings should apply to a wide range of organizations, from public to private as well as from small to large. Organizations of all shapes and sizes are alike in that they are designed for what Wilson calls a “critical task”—“those behaviors which, if successfully performed by key organizational members, would enable the organization to manage its critical environmental problem.” Unless an organization’s environment is static, time horizons have a strong bearing on how well it can manage its critical task because they affect the organization’s capacity to predict and react, or, in terms of Steinbruner’s model, the capacity to set appropriate performance goals.

Applicability of MOS research should hence not be problematic, even when it deals with a seemingly very different breed of organization, such as family firms—as Isabelle Le Breton-Miller and Danny Miller’s work does. They discuss “multitemporality,” which they define as “an ability to manage for the long run while staying healthy and spry in the short run.” The challenge of avoiding both short- and long-term mismanagement is by no means unfamiliar to bureaucracies, especially since they have, as discussed in the previous section, long time horizons that are constructed through the projection of present patterns of “constants” far into the future. Short-term myopia, in other words, is truly a “double whammy” for bureaucracies, leading to the projection of distorted images of the present into the future and resulting in general blindness.

What facilitates or frustrates the amelioration of myopia is structure. Le-Breton Miller and Miller argue that “[f]lat structures allow organizations to be more responsive to immediate and unexpected challenges and opportunities than taller, more hierarchical, and bureaucratic designs.” Structure by itself, however, is not enough; it is the starting point, but long time horizons and multitemporality appear to be to a much greater degree products of parallel efforts to mold employees to the structure within which they function.

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37. This question is addressed perhaps most directly by G. T. Lumpkin, Keith Brigham, and Todd Moss, who write that “LTO [long-term orientation] may be thought of as an organizational level attribute that manifests in varying degrees in FCBs [family-controlled businesses] and is useful for discriminating between different types of family business. Also note that LTO is not limited to a family business context. We agree with Le Breton-Miller and Miller who state that an LTO ‘can occur wherever top executives have the motivation and wherewithal to pursue the interests of the business in a farsighted and inclusive way.’” G. T. Lumpkin, Keith H. Brigham, and Todd W. Moss, “Long-Term Orientation: Implications for the Entrepreneurial Orientation and Performance of Family Businesses,” *Entrepreneurship & Regional Development* 22, nos. 3–4 (May–July 2010): 242.


41. Ibid. 1175.
As is further explained, flat structures “also make necessary wider spans of control and therefore, require employees to adopt broader roles and job definitions—jobs that demand significant individual initiative and a wide array of skills.”

Even though bureaucracies are by definition hierarchical, they can also have embedded collectives. However, that is most certainly not sufficient for multitemporality and the resulting increased effectiveness in managing environmental problems, especially in periods of flux. These collectives can have relatively flat organizational structures and even retain them despite being embedded in highly hierarchical parent organizations, but in order to provide the flexibility that the latter lack, they must also be proactive in preparing members for productive functioning in a “flat” organizational structure. Perhaps the best way of describing bureaucracies is on a spectrum from more hierarchical on the left to less hierarchical on the right, with a heavier emphasis on or simply a greater number of embedded collectives moving a bureaucracy toward the right side of the spectrum. However, it is necessary to remain agnostic about the ability of bureaucracies on this spectrum to adapt to fluctuations in the nature of the environmental problem(s) they are charged with managing. Being less bureaucratic is not inherently helpful if the “islands” of flatness are not taken advantage of and if they, due to the lack of or overabundance of direction, assimilate and themselves become “taller” or simply languish. Flatness provides only the potential for temporal flexibility and adaptation, which is why it is also necessary to investigate the impact the goals and incentives as intervening variables.

The importance of structure for time horizons is further underscored by the effects it has on the transmission of information within an organization. As Kevin J. Laverty summarizes, structure in organizations functions as a multi-stage filter: To reach top decision-makers, information and decisions must percolate upward from the lowest levels of management, and in the process, each successive hierarchical level has the opportunity for “agenda control.” This can, Laverty argues, lead to “short-termism” in organizations, as any “bottom-up” information aggregation or decision process is also a process of cumulative “screening” that whittles away options, and “because the time horizon of an individual’s responsibility is inversely proportional to his or her level in the organization, it may well be that certain long-term considerations will not ‘bubble to the top’ in many organizations.”

The following is not much of a deductive jump, but more a question of spelling out the obvious: The taller an organization—and, therefore, the greater the number of levels of management a decision has to survive in order to receive full consideration or even a cursory glance at the uppermost decision-making level—the less likely...

42. Le Breton-Miller and Miller, “Commentary: Family Firms and the Advantage of Multitemporality,” 1175.

43. As Max Weber writes, one of the “characteristics of bureaucracy” is that “[t]he principles of office hierarchy and of levels of graded authority mean a firmly ordered system of super- and subordination in which there is a supervision of the lower offices by the higher ones.” Max Weber, From Max Weber: Essays in Sociology, ed. and trans. H. H. Gerth and C. Wright. Mills (New York, NY: Oxford University Press, 1946), 197.


45. [ibid.] 847.
it is that long-term concerns will reach the top.

This is of great consequence for temporal flexibility and adaptability in bureaucracies. While Breton-Miller and Miller’s distinction between tall and flat organizational structure shifts the burden of specifying the end of the causal chain downwards—that is, the key becomes the question of whether the greater potential of flat organizations is actually realized in a particular instance—the incorporation of Laverty’s finding does not necessitate nearly as much agnosticism about the time horizons of more bureaucratic and less bureaucratic organizations. The mere fact that collectives are embedded within a bureaucracy still does not have an independent effect, but the level at which they are positioned does. *Ceteris paribus*, of two bureaucracies of equal “height” and with the same number of critical subtasks delegated to collectives, the one with more collectives embedded at a higher level, or, in less abstract terms, the one whose collectives have more direct ties to the overall organizational leadership, will have longer time horizons and also will be better able to adjust them to the changing state of the environment and the altered nature of the critical task. Butler characterizes bureaucracies as having long time horizons because they assume constancy and project current environmental processes into the indefinite future, so in those terms, the time horizons of the bureaucracy with more direct links between collectives and the organizational leadership can be conceptualized as having a longer “phase” than those of the bureaucracy with fewer direct links of this type. To construct an image of the future, in other words, the former will be making “projections” based on longer-term environmental processes. It will for this reason be less myopic, with the caveat that the degree of flexibility and adaptability still depends on the quality of functioning of the embedded collectives.

**Dominant Logics, Organizational Goals, and Incentive Structures**

In this section of the paper, the nature, causes, and effects of organizational goal-setting and the corresponding incentive structures are analyzed. First, “dominant logics” as drivers of goals and incentive are explained, followed by an analysis of goal setting and incentive structuring as intervening mechanisms affecting time horizons.

**Dominant Logics as Decision-Making Heuristics**

One strand of research in MOS holds that the time horizons of an organization are conceptually most useful if understood as a product of the mindset imposed by the organizational leadership. Namely, Keith Brigham et al. assert that “[t]heoretically, LTO [long-term orientation] can best be viewed as a dominant logic that is held by and is a manifestation of a family firm’s dominant coalition. … Since it is the dominant coalition that controls the organization’s agenda, LTO is best conceptualized as an organizational-level phenomenon.”

This applies to bureaucracies with even greater force, as they in

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essence represent distributed agency, where every management level of the bureaucracy delegates downward tasks initially specified by the principal. In a tall organization like a bureaucracy, the letter of the dominant logic will guide the actions of everyone from the agency head and the bureau chiefs to the lowest-level bureaucrat, but the spirit of the dominant logic, which is arguably the more important component, might not permeate every management/decision-making level as thoroughly as does the letter. The influence of the spirit of the dominant logic and the extent to which it becomes integrally entrenched in mindsets will in large part depend on the effectiveness of socialization processes.  

However, while the impact of socialization is not to be discounted, the operative word for bureaucracies, which have extreme leverage for top-down imposition of action and principles, will truly be the “dominant” in dominant logic. The question whether the dominant logic is actually adopted by every level of management, as it were, mind and soul, is overshadowed by the fact that, as Brigham et al. authoritatively summarize, a “dominant logic”

‘is stored as a shared cognitive map (or set of schemas) among the dominant coalition.’ These shared schemas operate as heuristics that focus the attention of the dominant coalition on specific types of information, problems, and decisions. Over time, family firms develop formal systems and processes that are aligned with the dominant logic. Eventually, a family firm’s dominant logics will shape the decision rules, controls, metrics, structure, and values of the firm, which essentially becomes a reinforcing organizational system built around the dominant logics.

The abovedescribed process, whereby dominant logics shape and entrench organizational heuristics, further corroborates the paper’s earlier application of Steinbruner’s cybernetic paradigm to time horizons and the resulting model of decision. Time horizons, whether short or long, will decisively shape decision mechanisms in a bureaucracy. The following section aims to explain what produces dominant logics reliant on short versus long time horizons.

Goals and Incentives as Intervening Mechanisms

Organization-wide goals—i.e., the goals most closely linked to managing the organization’s environmental problem—and especially the incentives constructed by top decision-makers and managers in the pursuit of such goals will most proximately shape organizational time horizons.

One way in which time horizons become manifest in bureaucracies is directly through organization-wide goals. If the environmental problem is linked to the problem of “when”

47. On the topic of socialization in bureaucracies, see especially Oberfield, *Becoming Bureaucrats*.

in an inextricable and, most importantly, obvious manner, then top managers and decision-makers might attempt to embed in the dominant logic an explicit temporal element. For example, one aspect of the Air Force’s environmental problem is winning air superiority or, preferably, total air supremacy in the skies above the battlefield where other land or sea elements are engaged, but in order to effectively perform this task, it must pay close attention to the pace of technological innovation in the high-tech sectors of potential adversaries. The critical task, therefore, is closely tied to the pace of change in a possibly extremely unstable industry, the latter often advancing by leaps and bounds. As James Brungess notes in his analysis of interservice differences in approaches to suppression of enemy air defenses (SEAD), “[t]hose writing doctrine [for the Air Force] are forced into ever more visionary statements in an attempt to bond SEAD’s technological reality to a view of the future far enough ahead to provide a framework that accommodates the changes taking place in the technical world.”

This is similar to patterns in US interwar doctrine, where the Air Force—or, as it was then known, the Army Air Corps—also felt a need to avoid being constrained by what seemed technologically feasible at the time.

Organizations with an explicit temporal element in their critical task, then, might aim to address it directly through setting goals that also have a strong temporal component. In this vein, Elaine Mosakowski and Christopher Earley explain that “[o]ne advantage of managerial time awareness is the ability to develop more effective links between temporal assumptions and strategic and/or organizational choices. Internal processes and practices can be designed to suit the time view held by a firm’s managers.”

Another flavor, so to speak, of organizational goal-setting of this kind is related to the type of controls managers impose. Shaker Zahra, James Hayton, and Carlo Salvato, albeit focusing primarily on determinants of the levels of entrepreneurship in firms, describe within this context the link between the type of controls and the length of time horizons. They distinguish between “financial controls,” which “are based on established goals, targets and performance quotas,” and “reinforce a short-term orientation,” and “strategic controls,” which “require an understanding of the task at hand, the risks involved, and the potential tradeoffs among the choices managers might make” and “reflect a long-term orientation.”

It is not entirely clear in which direction the causal arrow points and whether a feedback effect exists, with the latter being a very real possibility, but the main point in any case is that it is not only the specific goals but also the way in which they are set and assessed that affect and are affected by organizational time horizons. Even if the causal relationship is completely unidirectional and the finding of Zahra et al. describes an effect of rather than a cause of long or short time horizons, the fact of the


50. I would like to thank Owen R. Coté for this point.


operation of dominant logics suggests that the lower levels of management that are being constrained by financial or strategic controls will in effect adopt short or long time horizons, respectively. More specifically, they will adopt heuristics associated with short or long time horizons, and due to the nature of time as an organizational phenomenon, of timeframes as innate elements of organizations, and of associated feedback mechanisms (see the “Time as an Organizational Phenomenon” section), these heuristics will likely independently engender a synchronization between temporal orientation and the nature of goals and performance assessment.

Next, incentive structures along with management styles employed in the pursuit of organizational goals are described. With explicit goals, which are sometimes even directly linked to the length of time horizons appropriate to the nature of the environmental problem, it is easier to encourage or discourage certain kinds of behavior among employees, but in order to entrench a desired mindset, goal-setting must be complemented with carefully constructed incentive structures and thoughtfully selected management styles. If goals closely echo elements of the organizational culture, then the effects of goals and incentives may converge, but in general, incentive structures will produce a more “organic” change in employee behavior and will likely become entrenched to the degree that a simple change in goals will be slow in dislodging them.

Incentive structures and management styles combine a number of elements such as tenure stability, the decision latitude accorded to subordinates, the relative emphasis put on human resources development, and so forth. With regard to incentive structures, Le Breton-Miller and Miller argue that tenure stability “will correlate with (1) stronger attitudes of stewardship (e.g., fewer unrelated acquisitions, risky projects, and avoidable episodes of downsizing), (2) deeper knowledge of the business and tolerance for uncertainty, and (3) longer time horizons and investments in focal capabilities.” Again, although their argument concerns family-controlled businesses, the effect of longer and more stable tenure in bureaucracies, especially for bureau chiefs and project managers, is also of great importance. Admittedly, the difference in overall performance between two otherwise identical bureaucracies, with one pursuing a policy of tenure stability and the other mandating frequent turnover, will not be as great as it would be in a scenario where these two policies would be implemented by otherwise identical family firms. After all, bureaucracies are at their core still highly hierarchical and inflexible, so the tenure stability policy would affect predominantly the segments of the organizational structure where finely-tuned management styles facilitated by tenure stability actually matter—in the embedded collectives, of which there is a limited number in bureaucratic organizations. However, I argue that overall performance is not an appropriate criterion here. Tenure stability likely exerts an equal or perhaps even greater effect in bureaucracies than in family firms if performance is measured in the strategic areas most closely linked to management of the environmental problem. Therefore, if addressing crucial aspects of

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the bureaucracy’s critical task is assigned to the embedded collectives, then tenure stability can have a very strong positive impact on performance.

A related aspect is the strictly gradated nature of advancement in bureaucracies. In the US, this refers to the GS (“Government Structure”) system on the civilian side, and on the military side, ranks. When billeted in a particular subdepartment or even assigned to a project, public servants must ordinarily demonstrate substantial progress in order to be promoted or assigned to a more significant project or more crucial subdepartment. This often produces a focus on measurable aspects of performance, but those aspects might not capture the optimal type of progress, especially in cases involving complex problems like managing innovation in an ever-fickle technological environment. For example, how is the Army to measure progress in developing cyber countermeasures when it is still not clear how the cyber/informational environment responds to inputs and how it structures conflict?

The pressure from “upstairs” to show progress will likely prompt project managers to push through performance improvements on related but not on key dimensions, largely also due to the fact that progress on dimensions that are truly key is, as discussed, often difficult to quantify. Le Breton-Miller and Miller’s observation about tenure stability discusses this: “The anticipation of lengthy tenures drives some leaders to take a farsighted, stewardlike perspective of the business. It makes them reluctant to engage in risky expedients such as unrelated diversifications, hazardous acquisitions, or shortsighted downsizing, that drain resources and may haunt them later in their tenures.” Furthermore, “[i]n a more proactive vein, lengthy tenures may encourage investment in long-term projects such as infrastructure creation and R & D.” In the bureaucratic context, this means that allowing for longer tenures in strategically crucial areas should reduce the incidence of career-driven investment in aspects of performance that “look good”; among other things, the prospect of longer tenures should make project managers, bureau chiefs, and subdepartment heads reluctant to invest in cosmetic short-term measures, as such sloppy “fixes” will in the long run only make things worse.

Another argument related to managerial incentives is that the type of compensation provided matters. In the business context, David Souder and Philip Bromiley note that “[b]ecause executives must wait several years before receiving the value from restricted stock or until the stock options become exercisable, such awards ostensibly provide an incentive for managers to make decisions that may not increase the firm’s stock price immediately, but will generate value over time. In addition to the direct incentive effects, stock-based compensation may signal the board’s emphasis on long-term results to

54. This is in a way parallel to what Le Breton-Miller and Miller describe happens in firms: “A willingness to invest in the long run is not enough to make it happen. Discretion is required on the part of the executive investor. At many nonfamily public companies, leaders are put under pressure by their boards to produce quick results. That constraint can limit their latitude to embark on long-term pursuits and to make investments with delayed paybacks.” Le Breton-Miller and Miller, “Why Do Some Family Businesses Out-Compete?” 734–735.
55. Ibid. 733.
56. Ibid.
management.

They find that the provision of stock-based options does have a statistically significant effect, but not in the hypothesized direction. However, what is more important is that incentives do shape time horizons, even if not in the manner the authors predicted. Therefore, compensation in the bureaucratic context can be conceptualized as promotion, the delegation of more autonomy, or the allocation of more resources to a particular project or subdepartment, and, if made conditional on concrete achievements tied to long-term goals rather than performance metrics, it seems plausible that time horizons of managers will lengthen.

With regard to the managerial style line of argument, there exists substantial evidence that leaders can in fact transfer time horizons downward through the organizational structure as well as within suborganizational elements. Allen Bluedorn and Kimberly Jaussi note that previous work on this topic “suggests (1) that individual CEOs affect the temporal contexts in which they work (i.e., bringing their own time horizons to bear on the planning horizons used in their firms), and,” even more importantly for present purposes, “(2) that these temporal contexts are the contexts which the leaders have created, at least in part, for and with their followers [emphasis mine].” They consider five different dimensions of time with important implications for leadership, with what they term “entrainment” and “temporal depth” having the greatest bearing on the questions under analysis here. First, they discuss entrainment as affecting primarily dissonant rhythms, and while entrainment of rhythms is not quite the same as homogenization of time horizons across an organization, it is not at all inconceivable that the mechanism whereby the former occurs could also operate in the latter case. This mechanism is termed “zeitgeber” and is defined as “a signal from the more powerful rhythm, the rhythm that will potentially ‘capture’ other rhythms,” and “either the leader or subordinate can play the zeitgeber role.” That may very well be true for rhythm zeitgeber, but a time horizon zeitgeber—the fundamentals of which have already been in part discussed under the heading of dominant logics, which incorporate the predominant horizon and in turn shape subordinates’ temporal perceptions—would operate in a clearly top-down manner.

The other dimension of interest, temporal depth, touches more directly on time horizons and further illustrates how the time horizons tailored to particular goals and incentives at the upper echelon can be spread downward. This appears to be closely linked to the construction of organizational culture and identity; one of the more prominent claims in the leadership literature that Bluedorn and Jaussi direct attention to describes how “strategic leaders create . . . a temporal coherence to the organization’s life history by grouping events around critical points in time for the organization. . . . [T]hese leaders are reaching into their temporal depth and using it to help organizational members in their sensemaking process about their roles in the organization and the future of the organization.”

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58. Ibid., 563.
60. Ibid., 658.
Of course, none of this is by any means automatic; another key takeaway from research on this topic is, they observe, the finding that “higher levels of transformational leadership lead followers to want to identify with the leader for a longer term.” Leaders, in other words, most certainly have the capacity to more or less directly shape subordinates’ time horizons through goal-setting and construction of appropriate incentive structures, but need to adopt an involved leadership style to exploit the full potential of this capacity.

Turning to employee incentive structures, one finds that the conclusions about turnover rates are in many ways similar to those about managerial tenure length and stability. The difference lies primarily in that while managerial tenure length and stability directly influence the length of organizational time horizons, low turnover rates have an indirect, but nonetheless important impact. A lower turnover rate, write Le Breton-Miller and Miller, “keeps work teams intact, and allows people to absorb the culture of the company and become familiar with their coworkers. The result is that tacit social and team knowledge are preserved within the firm so that people are better able to work together. . . . This enables the firm to benefit from organization designs that are flatter, less bureaucratic, and more centered around the initiative of employees at all levels.” A closely related consideration is, Le Breton-Miller and Miller point out elsewhere, highly selective recruitment as well as dedication of substantial amounts of time and resources to employee training.

In the bureaucratic context, this is a crucial enabling condition for many of the heretofore described processes related to temporal flexibility and adaptation, or to the purposeful and direct goal- or incentive-facilitated shaping of organizational time horizons. Top-level personnel may be incentivized to adopt a different temporal orientation, but on the level of the bureaucracy as a whole, that will not matter much if lower-level bureaucrats are not synchronized to this as well.

Given the cybernetic paradigm’s model of decision-making as an adaptive process, a bureaucracy with a long-term-oriented peak and a short-term-oriented base will likely fail to achieve its outlined goals: Decisions and information will make their way to the top through a cumulative screening process, which means that the leadership will be presented with a set of options that are fundamentally misaligned with their goals, and with information that seems to completely contradict their understanding of the state of the environment. The paramountcy of having low turnover rates is further underscored by the effects on embedded collectives, which depend on synchronization and a common operating framework to an even greater extent than bureaucracies; unlike the former, they often work with highly complex tasks that require a substantial amount of creativity, and as a consequence, high turnover rates by themselves almost completely preclude effective performance by these small but essential add-ons to bureaucratic organizations.

62. Ibid.
64. Le Breton-Miller and Miller, “Commentary: Family Firms and the Advantage of Multitemporality” 1175.
Effects of Organizational Time Horizons

Finally, the MOS literature, and the family firms literature in particular, outline the effects of long time horizons. Lumpkin, Brigham, and Moss describe such effects across five dimensions of entrepreneurial orientation. According to their work, long time horizons “will be positively associated with innovativeness, proactiveness, and autonomy but negatively associated with risk taking and competitive aggressiveness.” Bureaucracies as a breed of organization are inherently risk-averse, and repress proactiveness and autonomy within their structure. Therefore, of these five, innovativeness and competitive aggressiveness, especially the latter, are of greatest interest to bureaucratic politics, as they have the greatest potential for influencing bureaucratic functioning.

Innovation is, not to underestimate the importance of talent and the general managerial wherewithal necessary to achieve it, in large part a question of patience. Even if the innovation in question can be applied in pursuit of the critical organizational task as soon as it is ready, two obstacles stand in the way. First, to innovate means to devote substantial manpower and resources to the task, even when they could be used to produce immediate results and increase performance elsewhere. Second, the nature of the environmental problems of bureaucracies is unlike that of family firms, with inputs into the environment rarely if ever yielding a direct measurable output. This is doubly true for the intelligence community and the military services, which would, if left to the strong current of inertia that inheres in the tall hierarchical structures of these organizations, prepare for fighting the last war in the spheres of both doctrine and technology. Lumpkin et al. describe the problem as manifesting itself in the fact that “[r]adical and industry-changing innovations typically pay-off only after an appreciable delay, sometimes as great as 10 years or longer. A longer time horizon may make a family firm more tolerant of the type of experimentation that is typically required for radical innovation.”

As for competition, turf plays a key role in the functioning of not only individual bureaucracies, but also entire sectors of the government. The foreign policy and national security bureaucracy often find themselves at odds with each other, with bitter rivalries permeating the relationships between individual agencies and even communities within those agencies. In this vein, Wilson explains that “[e]xecutives [of agencies] … worry about retaining control over their turf … No agency has or can have complete autonomy, but all struggle to get and keep as much as they can.” If that is so, it seems that the question most commonly asked should be not why bureaucracies are so inefficient, but how they manage to accomplish as much as they do. Here, long time horizons come into play: “Prior research supports the view that competitive aggressiveness is inconsistent with a long-run perspective. In their study of multigenerational family firms, Nordqvist, Habbershon, and Melin (2008) found very little evidence that the businesses sought head-on rivalry with external competitors; instead, they were focused on building internal capabil-

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66. Ibid., 247.
67. Wilson, Bureaucracy, 28.
ities aimed at making them better competitors. The multigenerational aspect does not translate well into bureaucratic politics terms, but it is not difficult to imagine how long time horizons can decrease levels of competitiveness—they seem to offer an explanation for why a bureaucracy would ever willing relinquish turf.

From a heavily present- or short-term-colored perspective, there is absolutely no good reason for a bureaucracy to give up turf, as doing so leads to a loss of resources and leverage. A long-term perspective, however, may allow a bureaucracy to see that, for example, the current gap between its own capabilities and those of a competing agency will grow at an accelerated rate as time passes, making it counterproductive to continue the race. At that point, it may be better to simply cut one’s losses and reorient toward spheres where the agency has a competitive advantage.

However, before the implications of the foregoing for international relations can be spun out, a crucial piece of the puzzle is still needed to complete the picture. So far, it has been explained how time is constructed within organizations and, in somewhat less detail, how that affects organizational functioning, but if there was no more to time horizons than this, then perhaps international relations and security studies have rightly steered in other, more rewarding research directions. The reason why jumping to such a conclusion is hasty and misguided has to do primarily not with the already discussed aggregate effects of time horizons, but rather with the mechanism whereby those effects are produced. Different perceptions of time, it turns out, not only affect how actors understand the situation and attempt to respond to it, but also fundamentally shape their innate capacity for doing so. In more familiar terms, while conceiving of temporal perceptions as a source of bias in framing and solving problems may be analytically useful for answering questions where broader outcomes like foreign policy orientation are at stake—and where it is consequently at least expedient, if not necessary, to bracket lines of inquiry pertaining to microprocesses on the organizational level—such an approach runs the risk of severely underestimating the broader magnitude of the causal effects of time horizons. More concretely, a change in the length of an actor’s time horizon does not simply shift the focus from short- to long-term concerns, or vice-versa, but via accompanying changes in the level of construal shapes that actor’s capacity for accurately assessing the potential effects of developments in relevant spheres and estimating the likelihood of responses thereto bringing about the desired outcome.

The phenomenon whereby this occurs is described by construal level theory (CLT), a concept imported from psychology. Krebs and Rapport, who in their piece apply it to various salient theoretical questions, briefly summarize the nature of its operation, first drawing a distinction between “low-level construal,” which is “detail-oriented, concrete, and more concerned with how an action will be carried out or an event will occur” and associated with short time horizons, and “abstract representations,” which are associated with long time horizons and “emphasize ends, increasing the salience of an actor’s primary goal.”

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68. Lumpkin, Brigham, and Moss, “Long-Term Orientation,” 250.
plans to be implemented in the near future, contrasted with over-optimism and a focus on desirability when considering the more distant future.\textsuperscript{70} But what they describe, they admit, does not necessarily hold true for group decision-making processes.\textsuperscript{71} Krebs and Rapport address this concern only in passing, but as the next section on the implications of this paper details, it is in fact possible to expand findings about CLT and apply them to an organizational context.

**Implications**

The foregoing application of the MOS literature’s findings about time in organizations to the bureaucratic context has additional implications beyond bureaucratic politics. Most saliently, they appear to necessitate a rethinking of long-standing approaches to military innovation and may offer a basis for establishing a consensus on the validity (or lack thereof) of mainstream theories within this research direction.

An organization’s capacity for innovation, both in the ideational/doctrinal as well as in the technological sphere, is critically shaped by its temporal orientation.\textsuperscript{72} Innovativeness is fostered by long time horizons, and because the latter are by no means easy to maintain in an organizational setting, organizations more generally and bureaucracies in particular must invest deliberate effort into building this capacity and thus remaining effective. Long time horizons and, relatedly, innovativeness, are a result of carefully selected goals and incentives and modifications to the organizational structure. This builds on three key findings, two of which have already been discussed. First, time is constructed within organizations, even if more of the process occurs at the top of the hierarchy—that is, even if time horizons are “imposed” or transmitted downward—meaning that the organization as a whole can, at least for this broad analytical purpose, be treated

\textsuperscript{70} Krebs and Rapport, “International Relations and the Psychology of Time Horizons,” 532.
as having a distinct temporal orientation.

Second, the taller an organization, the shorter its time horizons; in tall, rigid organizations, long-term-oriented goal-setting and incentive structures are relatively less likely to decisively affect the bottommost levels of management, where more short-term understandings of the situation can consequently lead to skewed interpretation of directives. Furthermore, information about environmental problems must percolate upwards to reach top bureaucrats, who can in turn come up with long-term responses, but only if the information percolating upward also includes long-term concerns. If measures to organically lengthen time horizons fail and if a myopic short-term perspective is maintained at the bottom of the bureaucratic pyramid, then long-term considerations will almost certainly be overlooked, meaning that the top managers at the apex will have no option but to perpetually jump from short-term problem to short-term problem. They will not get any information about possible “deep” long-term causes.

Third, the link between CLT and time horizons discussed by Krebs and Rapport is very closely associated with the capacity for innovation. As Batia Wiesenfeld et al. argue: “The essential insight serving as the foundation for research relating construal level to creativity and innovation is the conceptual link between distance and creativity. In particular, novelty seems to require that people be able to conceptualize a reality that differs from their own in the here and now, suggesting that higher construal may be more likely to lead to innovation.” Perhaps the most crucial is the conclusion reached by Jens Förster, Ronald Friedman, and Nira Liberman—cited by Wiesenfeld et al.—that “thinking about the distant future elicits a processing shift toward abstract mental representation that is transferred to subsequent tasks, thereby facilitating performance on creativity tasks, which require abstract thought, and undermining performance on analytical tasks, which require relatively concrete processing.” The decrease in the quality of concrete and realistic assessment associated with long-time horizons should not be too much of a concern; a world where organizations operate with their heads in the clouds is unlikely, for one simple reason: whereas it is analytically useful to treat organizations as having unitary time horizons, it is not necessarily descriptively accurate.

Different parts of an organization perform different tasks and also have different perceptions of time. In a related vein, Wiesenfeld et al. rightly discuss innovation in a section on “Individual-level Consequences of Construal Level [emphasis mine]” and note that “much more must be done to understand how the individual-level cognitive and behavioral effects [of construal] translate to collective outcomes.” This of course does not mean that none of the effects of construal levels can be interpreted in an organizational setting or that it is incorrect to characterize organizations as innovative or non-innovative.

76. Ibid., 379.
Rather, it means that it is imperative to be very careful in specifying the sources of change in an organization, and that while innovation is a process that occurs within organizations, it is not necessarily an organizational process.

Indeed, while building on, implementing, and realizing an idea is very much a social-organizational undertaking, the source of the initial spark are individuals—but nonetheless individuals working and thinking within the organizational context. The following anecdote from an account of the development of the Navy’s ELINT satellite series nicknamed “Grab” is particularly illustrative:

The Grab concept originated in 1958 with an NRL research engineer, Reid D. Mayo, who investigated the problem of intercepting and analyzing radar signals from Soviet air defenses. While stranded in a Pennsylvania restaurant during a March blizzard, he pondered the application to space reconnaissance of crystal video technologies he had developed for submarines. Specifically, he wondered if the submarine periscope system could be modified so that a solid-state version of this intercept system could be mounted in a 20-inch solar-powered Vanguard satellite. He penciled range calculations on a paper placemat and determined that such a system could in fact intercept Soviet radar signals up to an altitude of 600 miles.

Long time horizons therefore have the potential to foster innovation primarily within different social and organizational contexts; namely, in bureaucracies, this should occur within the more flatly organized embedded collectives. The fact of such collectives will not by itself bring about innovation. It could be that interaction with other members of a collective dampens or reinforces the creativity-reinforcing effect of long time horizons, but until more research is conducted on this topic, it is difficult to say. However, it does seem plausible that efforts of individuals working in an LTO-fostering flat organization complement each other thanks to how responsibility is delegated and how tasks are clearly divided among members—even if social-organizational interaction stifles creativity, potential innovators in embedded collectives still have considerable latitude to pursue projects relatively independently, which is facilitated by the loose organizational structure of their parent bureau or lab.

Admittedly, military bureaucracies are not exactly famous for successful spontaneous innovation, and although initial success in innovation does not require the participation of the entire organizational apparatus, a strong force is required to push the innovation through the implementation and adoption stages. In other words, the organizational leadership has to become invested in ideas that may well come from subordinates. This follows Barry Posen’s argument in The Sources of Military Doctrine: He asserts that military innovation will generally come either as part of a response to external shocks

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that force adjustment—catastrophic battlefield defeats—or as a result of civilian intervention—namely in support of “mavericks.” Innovation therefore does not have to and likely will not occur at the top levels of a military organization, as the above quote about the development of Grab suggests.

However, it is also not necessarily individual mavericks that serve as a source of change; embedded collectives like laboratories and R&D bureaus can also provide the drive for innovation. After all, they have flatter organizational structures, meaning that long time horizons are easier to maintain, and that long-term considerations are also more likely to reach key personnel within the collective. However, once the proposal is out in the open, approval and active support from the top of the bureaucracy is necessary, which may be difficult to obtain without civilian intervention—this depends largely on the temporal orientation of the bureaucratic leadership itself. If it, too, has long time horizons, it might welcome similarly long-term-oriented proposals from collectives.

In any case, innovation-facilitating abstract construal can be encouraged within organizations through pushes for the adoption of long time horizons, but a precise blend of structural enclaves of collectives with direct links to the top, and carefully set goals and incentives is required for innovation to actually occur. Myopic short-term oriented military bureaucracies, however, will simply not produce innovation. Long time horizons are the basic necessary condition; without them, spontaneous innovation is extremely unlikely to occur in any part of a military organization.

Conclusion

Perhaps the single most constraining limitation is the predominantly individual level-oriented focus of research on the effects of time horizons and accompanying levels of construal. It is possible to extrapolate from such studies to the organizational level, with even the limited claims thus made having significant consequences for an important policy-relevant topic like military innovation, but on the theoretical level, it is at this point still difficult to move beyond outlining the ramifications for the structure of bureaucratic politics. The problem also lies in the complete absence of empirical studies addressing the effects of organizational time horizons in international relations. As discussed, different parts of an organization will likely have different time horizons, which makes it dangerous to make broader predictions about general organizational behavior. The consequences for intelligence assessment and the resulting selection of possible courses of action presented to top managers and decision-makers are of great significance, but they do not say much about how large bureaucracies with substantial intraorganizational variation in time horizons will as a whole react to a situation.

The way forward, therefore, lies especially in empirical investigation of the effects of organizational time horizons as hypothesized here and of the organizational-level effects of different levels of construal. Particular attention should be devoted to exploring

79. Ibid. 174.
whether non-homogeneous organizational time horizons can nonetheless have organization-wide effects. If it is established that they in fact do, then further theorizing can apply the logic of organizational time horizons to broader theories of international relations in less constrained a manner. Until then, however, it appears that the various limitations outlined above necessitate a restricted focus on how more tangible phenomena are affected by organizational time horizons.
References


