<u>Research Article</u>

Boundary Complexity and Organizational Strategic Planning: Theory and evidence from the U.S. Department of Defense

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Abstract: This article develops a theory about boundary complexity and strategic planning. Strategic management practices have been said to hold significant promise for public sector organizations. While the focus has long been on understanding the strategy-performance link, some scholars have made recent calls to understand how strategizing happens in the public sector. We engage this problem through an advising experience with an agency in the U.S. Department of Defense, using planning resources that are well-respected in the field. We argue that the role of boundaries, and more specifically boundary complexity, is undertheorized in the literature on public sector strategic planning. We theorize that the likelihood of shared understanding and demand for boundary objects are functions of boundary complexity. Additionally, the ability to arrive at shared mental representations regarding strategy is itself a function of boundary complexity, through both the demand for boundary objects and the likelihood of shared understanding. We encourage scholars interested in strategic planning in the public sector to consider how and why boundary complexity influences strategic planning activities and ultimately performance.

Keywords: Boundaries, Complexity, Strategic cognition, Strategic planning, Uncertainty

Introduction

The leading approach to strategic planning in the public sector defines it as "a deliberative, disciplined approach to producing fundamental decisions and actions that shape and guide what an organization is, what it does, and why" (Bryson, 2018, p. 5). Literature on strategic planning outcomes has presented evidence that supports a strategy-performance link (George et al., 2019). But, in addition to trying to understand outcomes, leading scholars have recently called for more research into how strategizing *happens* (Bryson & George, 2020; Denis et al., 2007; Höglund et al., 2018; Jarzabkowski, 2004; Jarzabkowski & Fenton, 2006; Jarzabkowski & Kaplan, 2015; Jarzabkowski & Spee, 2009; Spee & Jarzabkowski, 2009).

We engage the call for more research on strategic planning processes through action-oriented research (Eden & Huxham, 1996) conducted during an advising experience with a civilian agency in the U.S. Department of Defense (DoD). The organization in question has about 125 employees and carries out unique functions in U.S. society. We, the research team, were ostensibly brought on board to help the organization finalize a strategic plan.

However, during the strategic planning process, the organization often got bogged down in challenges stemming from different understandings of core functions, purpose, and interdependencies among its suborganizations. In this case, we found that widely used strategic planning materials helped participants deal

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with these challenges, which we characterize as boundary complexities, of their organization. In what follows, we synthesize insights from several literatures that grapple with how individuals and organizations face complexity. Following an inductive approach, we build on the literature and our experience to formulate a theory about the relationship between strategic planning and navigating organizational complexity.

Our insights from this experience suggest that different understandings arise and pose significant challenges at "boundaries." At their simplest, boundaries are a way that organizations delineate entities (Abbott, 1995), both within the organization and relative to the outside world. Consequently, boundaries can become places of contestation (Lamont & Molnár, 2002) or collaboration (Quick & Feldman, 2014). In either case, boundaries are venues of important information exchange (Carlile, 2002, 2004). Thus, from an information processing perspective, boundaries become a space in which many strategic issues arise and must be resolved. We argue boundaries, and more specifically boundary complexity, are a critical but undertheorized aspect of (public sector) strategic planning processes.

We reference separate literatures on boundary objects and strategic representations as ways that scholars have attempted to understand how people make sense of information and reconcile disparate understandings at boundaries. Connecting the literature to our experience, we contend that boundary complexity influences the ability to communicate and process information across boundaries. Building on this insight, we theorize that complexity influences the likelihood of reaching shared understanding at these boundaries (Figure 1). Consequently, to overcome the limitations of information processing and because of a need for shared understanding, there is an increasing demand for boundary objects as complexity increases (Figure 2). Increases in boundary complexity drive two opposing processes: the existence of boundary objects in strategic planning activities is an attempt to make sense of this complexity, however the information processing constraints that increase with complexity of boundaries can limit the probability of finding shared understanding (Figures 3). As ultimately both the creation of boundary objects and the likelihood of finding shared mental representations about strategy are functions of boundary complexity (Figure 4). More simply, we see our contribution as offering insight as to how boundary complexity influences the 1) existence of boundary objects and 2) ability of actors to arrive at shared meaning through strategic planning activities.

Literature

We synthesize different bodies of literature that address issues relevant to understanding communication and cohesion within organizations, including how organizations and individuals understand and present information regarding organizational purpose and function. We consider the bodies of literature on boundaries and what makes them more, or less, difficult to navigate. We then consider the literature on cognitive maps, strategic representations, and boundary objects to look at how the navigation happens. Finally, we look at communication challenges unique to strategic planning in public sector organizations.

Boundaries
Because the effective management of knowledge is critical to organizational success, how individuals and organizations process information and make decisions has always been central to the field of organizational theory (Cyert & March, 1963; Simon, 1947). Carlile argued that early work in systems theory "framed the boundary between an organization and its environment as a problem to be solved by information processing" (2002, p. 443). In other words, boundaries represent places of critical information exchange:

> It is at these "knowledge boundaries" that we find the deep problems that specialized knowledge poses to organizations. The irony is that these knowledge boundaries are not only a critical challenge, but also a perpetual necessity because much of what organizations produce has a foundation in the specialization of different kinds of knowledge (Carlile, 2002, p. 442).

Whereas the border between an organization and its external environment will be more straightforward, there are diverse ways to think about boundaries *within* organizations. Thompson (1967) argued that we could observe organizational boundaries along three levels of action—technical, managerial, and institutional—in

an organization, with each providing a unique necessary function. More recent work argues that one can define boundaries according to actors, social relations, and activities (Scott & Davis, 2015, p. 153).

Sociologists also study boundaries, considering various ways in which actors and entities relate to one another (Lamont & Molnár, 2002). A first view defines boundaries as logically equivalent to entities (Abbott, 1995). Specifically, they help demarcate: "professions, organizations, jurisdictions, political identities, or issues" (Quick & Feldman, 2014, p. 675). Here the border between an organization and its external environment is explicit and important, but so are boundaries *within* organizations. A second view asks us to consider the implications of boundaries through a lens of relationality and defines boundaries as "sites of difference" (Abbott, 1995, p. 862). In this view, boundaries can be sites of contestation (Lamont & Molnár, 2002), but also collaboration (Quick & Feldman, 2014). Accordingly, boundaries are the "spaces" in which many social processes occur, wherein actors vie for things like identity, status, resources, information and knowledge, community, etc.

Scholars of organizational theory have taken a slightly different approach, with leading scholars arguing there are four general perspectives that guide the study of boundaries in this field (Santos & Eisenhardt, 2005). Specifically, boundaries arise in a place that (1) maximizes efficiency and minimizes transaction costs (Coase, 1993; Santos & Eisenhardt, 2005, p. 492; Williamson, 1975, 1981); (2) "*maximizes strategic control over crucial external forces*" (Santos & Eisenhardt, 2005, p. 495); (3) "*maximizes the value of the firm's resource portfolio*" (Santos & Eisenhardt, 2005, p. 497); or (4) helps to "achieve *coherence between the identity of the organization and its activities*" (Santos & Eisenhardt, 2005, p. 500).

Whereas we recognize each of the above perspectives could be relevant for strategic planning, the second, third, and fourth perspectives strike us as the most relevant for our study. The second view focuses on power and who should control exchange relationships, both internally and against the broader environment. The third view suggests boundaries demarcate differences of competence; it is in line with Contingency Theory, and we think it is especially relevant for public sector organizations. The question of who carries out what activities, and thus who gets what resources to support those activities, are ultimately strategic questions. We also believe strategic planning plays a role in the formation of organizational identity. Of the four, this perspective may be the closest to the sociological approach. It encourages us to consider how the relationships between actors at boundaries shape individual and organizational identity, as well as the activities carried out within the organization.

Consequently, the fourth view provides a foundation for helping us think about how actors navigate questions of identity in strategic planning activities. As this approach is often used by scholars of managerial cognition and organizational identity, it allows us to consider boundaries as essential aspects of sensemaking processes, allowing actors in organizations and suborganizations to explore "who we are" (Weick, 1995). Additionally, some argue the sociological view has not been fully explored in the management literature. For example, one author argues "the formation, properties and consequences of boundaries per se as complex, shifting, socially constructed entities" is understudied in this space (Heracleous, 2004, p. 95). He continues, arguing for an "in-depth study of boundaries themselves as defining features of the system" (p. 96).We return to this subject in our analysis, but we ask the reader to keep the following question in mind: can the perspective one uses to consider a boundary influence the complexity one finds at the boundary?

Boundary Complexity
Given the various explanations for boundaries, scholars of knowledge management have grappled in various ways with trying to understand the relationship between information (processing) and organizational boundaries. Early work focused on information itself, whereas subsequent theorizing suggested that knowledge flows have more to do with the context in which information is being considered than the characteristics of the knowledge itself. Specifically, Brown and Duguid (2001) argue that it is the nature of *boundaries* that shapes how effectively information is shared.

Building on this, Carlile (2002, 2004) categorized knowledge-related properties at boundaries. First, *differences* in knowledge pertain to differences observed in the amount or type of knowledge between actors. Second, *dependence* involves differences in kind and degree of interconnectedness. Managing this dependence requires "the capacity to develop an adequate common knowledge as resources and tasks change" (Carlile,

2004, p. 556). *Novelty* is the third relational characteristic of boundaries, with increasing novelty being a more challenging phenomenon to manage.

In Carlile's (2004) framework, the key to knowledge transfer involves considering the nature of boundaries such that one can take information across a boundary in a way that actors on both sides of the boundary can make sense of it. He categorizes boundaries in increasing order of information complexity. Syntactic boundaries are those where "common lexicon sufficiently specifies the differences and dependencies of consequence at the boundary." At semantic boundaries, however, differences and dependencies will be less clear, and increasing levels of novelty may be present. These boundaries require "translation" of information from Actor A to Actor B, and negotiation between actors with disparate interests may occur. Finally, at pragmatic boundaries increased dependence and novelty drive greater differences and make for boundaries that complicate actors' effective communication. Particularly problematic, "When interests are in conflict, the knowledge developed in one domain generates negative consequences in another" (Carlile, 2004, p. 566). Later, we consider the implications of these kinds of boundaries and knowledge characteristics in the strategic planning process.

Cognition and Strategic Representations
The next body of literature relates individual decision making processes to communication and implementation within an organization. Understanding cognition as fundamental in organizational processes stems from the "Carnegie School" (Gavetti et al., 2007). One perspective, useful for strategic planning, carries many labels—"cognitive maps" (Tolman, 1932), "mental models" (Craik, 1943), and "schemata" (Bartlett, 1932). It postulates that individuals process stimuli to form mental representations of the problems they face, which influences the way individuals make decisions. A leading scholar of organizational psychology offered this appraisal:

> The implications of the writings of the Carnegie School theorists for the field of strategic management are profound; if the strategic decisions of organizations are indeed shaped largely by the mental models of actors, it makes sense to study these models systematically, in order to better understand the processes and mechanisms by which strategies come to develop and change (Hodgkinson, 2005, p. xx).

Some strategy researchers use cognition to understand how psychology shapes organizational strategic processes (George, 2020; George et al., 2018; Hodgkinson, 2005; Ployhart & Hale, 2014; Powell et al., 2011). Notably, Csaszar (2018) suggests that while *representations* provide actors models to *make decisions*, *strategic representations* are models that shape how actors *make decisions that affect firm performance*. Csaszar (2018) argues there are three kinds of representations important in the planning process. First, internal representations are the mental models internal to individuals. Second, external representations are some type of artifact—e.g., a diagram, model, etc.—that individuals create or use to save cognitive power and space (Kirsh, 2010). Finally, distributed representations are representations involving at least two people and possibly external representations (i.e., artifacts). They "exist because it is often the case that no single individual or artifact contains all the information necessary to solve a problem" (Csaszar, 2018, p. 608). Csaszar posed the following research question—*how do representations change?* In what follows, we will argue that boundary complexity is a critical factor in whether and how representations change.

Boundary Objects
Another body of literature that attempts to understand how communication happens at boundaries uses the concepts of boundary objects as communication devices and distinguishes boundary objects-in-use as the subset that facilitate communication. Star first identified boundary objects as tokens which arise through the "simultaneous existence of multiple viewpoints and the need for solutions that are coherent across divergent viewpoints" (1989, p. 247). Thus, "boundary objects act as anchors or bridges between actors" with diverse views of the world (Star & Griesemer, 1989, p. 414). With this in mind, we believe the scholarship on

boundary objects is ultimately interested in understanding how people arrive at something akin to distributed representations—i.e., shared understanding.

Subsequent research distinguished boundary objects from *boundary objects-in-use*. The idea of "use" implies the ability of participants "to symbolically incorporate it into the ongoing dialogue about the practice—a constant, reflexive, reaffirmation of what the object means in the given context" (Levina & Vaast, 2005, p. 340). But March (2006) discussed some limitations to such "technologies of rationality," highlighting how complexity often complicates realizing the promises of these tools. In other words, having a boundary object, or even a boundary object-in-use, does not necessarily lead to shared understanding. Additionally, the idea of use could be complicated by a variety of factors that go beyond simple information exchange, e.g., power dynamics in organizational settings.

Thus, boundary objects, boundary objects-in-use, and strategic representations are related yet distinct concepts. For example, all boundary objects are external representations and they exist to support the challenges of communicating across complex boundaries. Moreover, just as not all external representations become distributed representations, not all boundary objects become boundary objects-in-use. Yet, a boundary object-in-use is not necessarily the same as a distributed representation.

Whether something becomes an object-in-use additionally involves some degree of organizational politics or sociology (Jarzabkowski & Kaplan, 2015). On one hand, these are essentially external representations wherein multiple parties have incorporated them into strategizing activities. At the same time, it is possible for a boundary object to be "used" but not internalized as a valid representation of the issue at hand, i.e., it never becomes a distributed representation. So, one might think of distributed representations as a subset of boundary objects in use in that they facilitate understanding and shared meaning. Because we are concerned with shared understanding in the strategic planning process, we focus on whether a distributed representation was achieved rather than whether a boundary object becomes a boundary object-in-use. It is worth noting that one body of scholarship explores the role of meaning making in strategic planning activities (Balogun & Johnson, 2004; Rouleau & Balogun, 2011; Sonenshein, 2010; Spee & Jarzabkowski, 2017). A more recent example of this work explores the idea of creating "joint accounts" of strategic processes while also highlighting that there is little knowledge "about the processual dynamics involved in fostering diverse constituents beyond the core group of executives typically involved in designing a proposed strategy" (Spee & Jarzabkowski, 2017, p. 155).

Challenges in Public Sector Strategic Planning
Public sector organizations face several environmental factors that shape strategic management processes in important ways (Höglund et al., 2018; Jarzabkowski & Fenton, 2006; Ring & Perry, 1985). As Ring and Perry (1985) argue, policy ambiguity, a dynamic external environment, attentive publics, artificial time constraints, and shaky coalitions characterize the strategic environment public organizations face. These pluralistic environments mean that selecting one strategy can preference one or more stakeholders over others (Jarzabkowski & Fenton, 2006). As politics is fundamentally about power (Lasswell, 1936), actors vie for power vis-à-vis each other and over things like resources, responsibilities, and rules (Moe, 1989, 1990). Subsequently, from the perspective of stakeholders, strategic planning may not be viewed as a value-neutral activity.

As a result, in the public sector there are incentives to understand a problem from multiple perspectives, meaning "effective strategic planning (is) actually a complex cognitive, behavioral, social and political practice" (Bryson et al., 2009, p. 176). In short, when these pluralistic perspectives are not viewed in the same way across divisions within an organization there is an added challenge for communicating across boundaries. In the language of Carlile, we argue that *divergent stakeholder interests* represent another property of boundaries which influences the flow of information.

Background of the Organization
We (the research team) were asked to advise a DoD organization as they developed a new strategic plan. We were brought in to help invigorate an ongoing strategic planning process. Bryson's (2018) textbook—*Strategic Planning for Public and Nonprofit Organizations*—and its related workbook (Bryson & Alston, 2011) provided the

theoretical and conceptual foundation for our advising. Our understanding of the organization evolved over two on-site visits at the organization's offices and a multi-day off-site strategic planning event.

The organization has five directorates. We label them D1, D2, etc. D1 is a management directorate. D2 produces and communicates technical knowledge for other directorates. D3 produces legal documents. D4 undertakes policy analysis specific to this organization and unique within the U.S. federal government. D5 provides policy analysis for the rest of the organization.

The organization employs about 125 people with very high levels of human capital. Personnel are mostly senior in terms of experience and most have a deep expertise in their field. Additionally, their work requires them to engage across the DoD, other government agencies, and with international partners. The organization does not have a single function. Rather, the organization is a place to situate a few related governing functions and missions in one unit. Two of the functions are unique in American society (not carried out anywhere else in the American economic or political system). The directorates have the knowledge and capacity to oversee and execute a variety of policy and regulatory functions. Not all directorates engage the same external stakeholders.

Before we first arrived at the organization, senior leadership provided us with the organization's vision, mission, and values statements. During the on-site visits, we had at least two meetings with each of the leadership teams—both for the organization as well as for each of the directorates. We used these meetings to learn more about the organization, the directorates, and how different actors approached the strategic planning activities. It became apparent during these meetings that some of the directorates worked better together than others and that directorate leadership and senior leadership had some divergent ideas about what the "accepted" vision, mission, and values meant, and what the organization was trying to accomplish.

In between meetings we had time to discuss how each meeting went, what we thought we learned, and what we hoped to discuss and achieve in following meetings. These post-meeting meetings gave us a better grasp of the challenges and issues facing the organization. Thus, they were integral parts of the iterative learning process, and this complemented our action research approach.

Our final visit involved a two-day off-site strategic planning workshop. Before the off-site workshop, the research team conducted an organization-wide survey on several of the organization's strategic issues, the results of which we presented to organizational leadership and the leadership teams from each of the directorates. We worked with the pre-determined vision, mission, and values statements, and we did not undertake a formal stakeholder analysis. Members of the organization were disinclined to carry out an activity on a subject that seemed—to them—obvious. At the workshop, participants performed a mandate analysis, a SWOC analysis, and we had them provide the strategic issues for the organization and directorates. Much of the evidence we present comes from the off-site event. This was the first time we interacted with all the major players in the same space and so it gave us the best opportunity to calibrate what we thought we were learning about the organization against the behavior and statements of these leadership teams. This aspect of triangulation is another critical component of action research (Eden & Huxham, 1996).

Methods

As academics, we had asked permission to use the experience to further academic research, but we did not come to the events intending to study boundaries. We were there to explicitly help the organization create a useful strategic plan and reinvigorate a process which had gotten mired in the organization's dysfunction. Whereas in our minds it would have been ideal to have the strategic planning process follow the script from Bryson (2018) from beginning to end, we did not have that luxury for two reasons. First, the management team came to the event with some parts of the strategic plan decided. Second, we were constrained by time. Additionally, throughout our visits, we came to recognize that beyond the strategic plan, we needed to find coherence and consensus within an organization that, while high functioning in many ways, experienced contention and had significant issues around the topic of identity. That led us to the literature we have discussed above and to the theory we propose following our research.

This process is in line with Eden and Huxham's (1996) approach to action research which highlights the iterative and incremental nature of the processes involved with developing emergent theory. Because of concerns of space, we use Appendix 1 to discuss our activities and process in more detail. We use Eden and

Huxham's (1996) 12 contentions about what qualifies as action research to support our claim about the validity of this research. In keeping with the main thrust of the approach, we use the evidence we gathered to propose a theory. Thus, we use our experience and evidence from the case to construct rather than test theory, keeping with the idea that: "theories are qualitative. Ideas about cause and effect are based on insight, are derived from either qualitative or quantitative observations, and are initially expressed in words. . . . … But theory construction—explanation itself—is the quintessential qualitative act" (Bernard, 1996, p. 68).

The proceeding sections discuss the boundary issues facing the organization. We then give added context and meaning to these issues through a discussion of our experiences with the organization, highlighting the off-site activities. Next, we provide our analysis of these experiences to give added meaning and understanding for the reader. In the theory section, we generalize from our experience to help future researchers and practitioners better understand the importance of boundary complexity in strategic planning processes.

Boundary Issues Facing the Organization

During our onsite visits, leadership provided four key challenges facing their organization. First, there was friction between members of the organization and leadership. The leader was concerned about insularity within directorates and a lack of willingness to work together as a "team." Many employees held long tenures with the organization, yet the new leader hoped to inculcate a new culture throughout the organization. This was attempted primarily through an acronym—a boundary object—that was used to try to get employees to share in the leader's vision. When speaking to the leaders of all directorates privately, the acronym was commented on with derision. According to our understanding of boundary complexity, we assessed this issue as having high levels of difference, dependence, novelty, and divergent interests from pluralistic stakeholders.

The second boundary issue pertained to stakeholder needs. Almost every stakeholder was interested in the work of one or more directorates but not the broader organization. Because the organization serves several critical functions in society, it is not clear which external stakeholder(s) or public values the organization should prioritize. According to the leader, several stakeholders, particularly a new political appointee overseeing the organization, found it difficult to get what they wanted from the organization. The leader was concerned that the organization was known as the "No Organization." Everyone we spoke with had an opinion on this issue, and so it seemed to us that the organization had become fixated on this boundary object/external representation of being the "No" organization. We assessed this issue to have moderate levels of boundary complexity across all four characteristics of boundary complexity.

A third boundary issue involved the relationship between the organization's structure and its workflow. While the organizational chart (an external representation) looked like a hierarchy, the flow of information and resources within the organization did not appear to match this organizational form. D2 and D3 carried out one of the two primary functions. Additionally, D2 influenced some of the work of D4 and D5, which together carried out the second primary function. Thus, it appeared to us that D2 was central to the organization's effort and thus potentially the most important directorate. But to explicitly say this seemed like it would violate some norm. Here, high dependence, and some degree of difference, formed the core of a moderately complex boundary issue.

Finally, a fourth issue involved D4 and D5. While the work of D4 and D5 was necessarily related, members of these directorates were often at odds with one another. This interdependence was not necessarily obvious because the work was almost always done asynchronously. For example, D4 might start and finish a job or set of tasks, handing next steps off to D5. When D5's work was done, D4 might attend to another part of the mission. This could continue indefinitely as these missions often lack a defined end point. Importantly, much of their work is international. Complicating matters, for any given country, the relevant players would not necessarily be the same for both directorates. We assessed this issue to have high levels of difference and novelty, and moderate dependence and divergent interests from pluralistic stakeholders.

Evidence Gathering

Strategic Representations at the Boundaries
The research team began the off-site event with a presentation of planned activities and an academic overview of strategic planning for practitioners. Following the presentation, participants began the mandate

analysis with tables and chairs arranged in an elongated U-shape in front of a long wall, which became an active work area. We printed stakeholder names on giant post-its and stuck them on the wall. Working in directorate groups, participants used wall post-its to identify different mandates, tasks, and responsibilities coming from each of their stakeholders. Participants also identified the directorate responsible for each item. By the end of this activity, we observed that a few things had become clear to the participants.

First, the number of responsibilities carried out by the organization was breathtaking. Everyone could see that the organization oversees a complex operation with many divergent stakeholder needs.

Second, forcing the leaders of the organization to develop external representations of stakeholder demands helped to elucidate the roles of the different directorates and the complexity of what can seem like a straightforward mission. From our previous conversations with each directorate's leadership we had surmised that members of these directorates held distinct, and at times combative, internal mental models of stakeholder wants.

Third, it helped to demonstrate to participants *how* having multiple stakeholders mattered. For example, because of multiple stakeholder perspectives, the simple question, "What is security?" had many meanings and many answers. Questions such as: "What type of security?" And "Whose security?" are neither rhetorical nor semantic in this context. Both economic security and military security are part of the organization's mission. Though making sense of this amongst multiple, and sometimes competing, stakeholder claims presented a significant challenge. Additionally, seeing both overlapping mandates and divergent mandates from the same stakeholders drove interesting discussions about how these stakeholders influenced how the directorates approached their work.

Finally, the mandate analysis was a boundary object that engendered a conversation about the working relationship between D4 and D5. While in our previous meetings leaders from these directorates demonstrated high levels of tension with members of the other directorate, after visualizing the mandates these leaders begrudgingly acknowledged the symbiotic nature of the relationship between their directorates.

Thus, the mandate analysis served as an external representation/boundary object for dealing with both pluralistic stakeholders and for the tensions between D4 and D5. In the former case it became a distributed representation that illustrated the complexity of stakeholder needs and organizational roles and responsibilities. In the latter case, this exercise was not enough to overcome the tensions between D4 and D5.

Next, participants undertook the SWOC analysis, bringing people together to talk about the organization's strengths, weaknesses, opportunities, and challenges. There was broad agreement on the strengths—the expertise and dedication of the people who work for the organization—internal to the organization.

Separating challenges (negatives external to the organization) from weaknesses (negatives internal to the organization) generated important insights for the group. Prior to this exercise, many in the organization had expressed frustration to us about the organization being "reactive" and yet it was unclear how the organization should categorize or understand this problem. One narrative suggested that these difficulties were the result of organizational pathologies—i.e., their primary explanations were internal to the organization. Others noted, however, that the external environment played a role: e.g., 1) the direction of work was beholden to external actors who do not understand the purpose of the organization, 2) frequently changing work mandates, processes, and regulations, etc. and 3) external demands shaped internal workflows and workload. Participants engaged in a rich discussion of these issues and how they affected the organization.

The SWOC analysis affirmed that both internal weaknesses and external challenges were present. Of note, each of the four boundary issues we highlighted were addressed in this discussion. We observed how the discussion changed as it progressed. Over time, less attention was given to organizational pathologies as the primary driver of the difficulties facing the organization. Rather, participants seemed to recognize how much of what they had attributed to internal weaknesses originated in the external environment. For example, there was a recognition that some workflow issues arose from external stakeholders who did not understand the internal structure of the organization—i.e., external stakeholders would see an employee as a member of the broader organization rather than understanding whether they were a part of the appropriate directorate to

manage the concern they were raising. This issue particularly important for understanding the misunderstanding and misallocation of work at times between D4 and D5.

While we could not tell if this became a distributed representation, we did hear comments and suggestions reflecting the idea that framing challenges in this way allowed participants to accept them as something inherent in the work they do. In other words, these were problems that could be managed by thinking more critically about the boundary between the organization and the external environment.

After the SWOC analysis we presented the findings from the survey. We received 79 responses out of roughly 125 employees. In our view, the presentation of the survey results represented a major turning point in the off-site activities. The first figure we presented showed respondents' ranking of the importance of the organization's stakeholders. Results showed a clear preference ordering of the stakeholders. Up to that point we had heard different things about which stakeholders were most important. While a large group of people consistently touted the stakeholder that ended up being ranked #1 (out of 8) in the survey as the most important, the other stakeholder often touted as being particularly important ended up being ranked #6.

Up to that point, the subject of "important stakeholders" had been a contentious issue during our interviews and meetings. To the best of our understanding, the most audible concerns about being a "No" organization came from the stakeholder ranked #6. The visual clarified for participants that the issue of being a "No" organization came from only one stakeholder who was not overly important. After this presentation, the issue of being a "No" organization wasn't really a point of discussion.

At an earlier point in the off-site activities, in an attempt to diffuse the frustration from this "no" organization moniker, one of the research team members made this point to the group:

> Your organization—and this applies to many public organizations—exists explicitly because there is some public value tension that needs to be considered [by experts]. Everyone here seems to think of themselves as a being a part of a "No" organization. External stakeholders appear to drive this belief. Yes, from time-to-time the directorate functions come in tension. Your organization exists to provide expert discretion on really challenging public problems. You do not give blanket "No" decisions, neither do you provide blanket "Yes" decisions. You are not a "No" organization, nor are you a "Yes" organization.

It could be that the idea of being the "No" organization became and then remained an external representation. In part, it seemed to make sense to people in the organization and it was used by some to put pressure on others within the organization. But it did not fully articulate or appreciate the full range of what people understood they were doing and so it never became a distributed representation. After the presentation, concerns over pleasing stakeholder #6 by becoming a "Yes" organization dissipated. This suggested to us that this survey result had become a boundary object-in-use.

Additionally, we observed that the idea of being a binary "No" or "Yes" organization was no longer an issue that was really raised or considered. This suggests the possibility that the insight from the member of the research team became somewhat of a distributed representation. But, based upon the nature of this research project, that is not something we can "know" nor was it a hypothesis we can test. We nonetheless arrived at this insight as one that made the most sense given our experience with the case and our observations of the behavior of the actors involved.

Following our initial meetings, we also wanted to find another way to elicit information about the character of relationships within the organization to address frequent concerns about cross-directorate interactions. The survey allowed us to do that. Participants asked for more time and explanation with each figure in this set of items, which sought to elicit input from employees on cross-directorate integration and communication. One figure showed how challenging people in other directorates perceived a given directorate to be. For example, members of D1–D4 would rate D5. The results here were bland, which was interesting to the group. We often heard about friction in interactions between directorates, but the survey results did not show this.

Additionally, we asked respondents to rate the importance of directorates other than their own. Respondents clearly viewed D2 as the most important directorate for the work of other directorates. This was not surprising to us as in many ways it is the *raison d'être* of the whole organization. Whereas this had been tangentially acknowledged in individual meetings with leaders of each of the directorates, it was not something we had heard in a mixed setting—nobody wants to feel like they are on the outside looking in when it comes to important decisions. After we presented these results, one of the leaders of D3 said, "We all see our own directorates as important, but we all know that D2 is the most important directorate in the organization." At which point the head of D2 said,

> We have a traditional (i.e., hierarchical) structure to our organization which makes this confusing, but our directorate operates more like the hub of a hub-and-spoke network. The other directorates do essential work and sometimes work amongst themselves in doing this work. But much of the work that is critical to our mission involves our directorate in some way, shape, or form.

Among the research team we later commented that this exchange seemed to take much of the tension out of the room, suggesting this idea of a different organizational structure was a more usable (i.e., distributed) representation.

Analysis of the Organization

In this section, we analyze our understanding of the organization's boundary issues. We assessed that each boundary issue contained elements of *differences*, *dependence*, and *divergent interests from pluralistic stakeholders*. We also determined that *novelty* applied to two of the four issues. In short, these were all issues with moderate to high levels of boundary complexity. Based on our observations we assessed whether there were existing representations and boundary objects pertaining to each issue. For some issues there were external representations that were boundary objects-in-use. Participants discussed these objects, but we did not observe broad agreement about them wherein one might consider them to be distributed representations. We argue that strategic planning activities contributed to new distributed representations among the participants for two of the four issues.

Table 1 below presents the boundary issues that we focused on in our strategic planning exercises, the knowledge characteristics that contribute to the complexity of these issues, and our assessment of the strategic representations/boundary objects held by participants over the four issues.

Friction between employees and leadership never really appeared to us to get to a place of resolution through the strategic planning activities. If anything, the off-site activity served to demonstrate the limitations of some of the boundary objects which had been used to try and communicate between these two groups. In our view there was significant overlap between this issue and at least two other issues—the question of prioritizing stakeholder needs and the organizational structure relative to the flow of work.

For the former, in our view the leadership tried to frame the direction of work relative to specific stakeholders. We believe that one reason why the "No" organization moniker never gained traction, but the nuanced definition of security never really developed into an issue has to do with participants' preexisting internal representations. It may be that a new direction was needed and that the stakeholder raising concerns about being the "No" organization should have been reprioritized as the primary stakeholder of concern. But doing so may have required a fundamental reworking of the internal representations of many employees. On the other hand, we assessed that the discussion of security did not escalate because the idea that there were multiple ways to understand a concept like "security" did not necessarily interfere in the day-to-day work being done. In fact, as we mentioned earlier the ability to distinguish between "Yes" and "No" choices required the type of expertise for which the organization existed in the first place. For this reason, we believe the extent to which external representations (accurately) reflected the internal representations of participants influenced whether a boundary object became a distributed representation. Of note, and possibly worth further investigation, pre-existing work processes seemed to factor strongly in the nature of the

representations participants held. We expect that external representations that are more accurate relative to an individual's internal representation of an issue with have fitness advantages.

Table 1

Boundary Issues	Relational Characteristics of Boundaries				Strategic Representations		
	Differences	*Dependence*	*Novelty*	*Divergent Interests from Pluralistic Stakeholders*	*Internal*	*External*	*Distributed*
Friction between employees and leadership	High	High	High	High		Org chart; Acronym; "No" Organization	
Prioritizing stakeholder needs	Moderate	Moderate	Moderate	Moderate	"Stakeholders" "Security"	SWOC; "No" Organization	Nuanced definition of "Security"; Survey Results; Stakeholders & Mandate Complexity
D2 and organizational structure and workflow	Moderate	High	Low	Moderate		Org chart; Mandates	Survey Results; "Relationships"; Hub and Spoke
D4 and D5 collaboration	High	Moderate	High	Moderate	"Security"	Org chart; Mandates; Acronym; Discussion of "Security"	

We also see and understand the last two issues in the context of work processes. The issue over the role of D2 and the organization's structure had examples of distributed representations because the hub-and-spoke model reflected what the participants already believed, even if they didn't have an accurate ontology or nomenclature for it. Distinctions of identity or which stakeholder was most important did not seem to override these views. In this case, we might think of these issues arising from different perspectives of boundaries—i.e., while the real problem at hand involved workflows, and in our minds the perspective of boundaries that emphasized control (Santos & Eisenhardt, 2005), the issue was often being discussed within the perspectives on boundaries that emphasized differences in competence and identity.

On the other hand, the final issue was especially challenging because of a lack of accurate internal representations. Rather than understanding the problem in terms of control, or even how to engage the problem, members of D4 and D5 seemed to have difficulty conceptualizing the problem outside of identity. Ultimately, this seemed to reinforce other distinctions. Thus, rather than finding symbiosis, the directorates were seemingly locked in a struggle to demarcate influence and importance over the work being done. In our view, using a perspective on boundaries that did not match the type of work being done increased the complexity of the boundary.

In all these cases, a core issue shaping boundary complexity is that they were all driven, more or less, by divergent stakeholder interests. Different external stakeholders held different parts of the organization "accountable." In other words, they had their own priorities and views of what the organization should be doing. We can understand this in terms of the sociological approach to boundaries, where each suborganization was formulating its identity in regard to different factors. This provided a great deal of complexity in defining and thinking about the organization, collectively. Moreover, it possibly creates incentives to think about the organization compartmentally, which further highlights the differences between the different parts of the organization. Naturally, highlighting differences adds to the complexity of issues.

We were surprised by the difficulty in finding distributed representations or boundary objects-in-use. Getting to distributed representations, and getting boundary objects to become boundary objects-in-use, was, in the case of the research team member's comment on "No" organization, a simple lightbulb moment. But in many cases, to the extent that these ideas became distributed, this occurred through a lot of hard work and negotiation. Our analysis suggests various factors might be at play and that boundary complexity influences the probability of arriving at distributed representations.

Theory Building

In keeping with action research (Eden & Huxham, 1996), we view our experience as an opportunity to make sense of some of what surprised us and challenged us during the consulting experience. As scholars, we also want to understand the strategic planning processes more deeply. During the experience we saw a multitude of boundary objects. Some seemed useful and others appeared to provide little utility to the group (or were possibly even toxic). Accordingly, based upon our experience, we theorize about the relationship between boundary complexity, boundary objects, and shared understanding (i.e., distributed representations). We hope this may help scholars and practitioners better understand how strategizing happens.

Our discussion of the literature suggests the transfer of information across boundaries is a relevant yet underappreciated aspect of strategic planning, especially in public sector organizations. While significant attention in strategic planning activities and research is given to information exchange, relatively little emphasis is given to the characteristics of the boundaries across which this information must flow. Moreover, if boundaries carry important information about the nature of work on either side of them, it seems appropriate to highlight boundaries as representing an important function and obstacle in the exchange of information in strategic planning activities. In short, our experience led us to ask, what role do boundaries play in strategic planning processes?

Carlile (2004) argued one could represent the relational properties of boundaries as a vector of *difference*, *dependence*, and *novelty*. Building off this framework, we believe *divergent interests from pluralistic stakeholders*—whether from different views of what one stakeholder wants or arising from two or more different stakeholders—will additionally affect the complexity of organizational boundaries, especially in public organizations. Our experience suggests understanding, interpreting, and explaining information was more challenging as stakeholder expectations began to diverge. This is different from Carlile because here the difference is not one of information or internal interest but rather a characteristic of the external environment. This is a foundational assumption we add to the literature.

A question of interest in the broader literature on both boundary objects and strategic representations concerns how individuals arrive at shared understanding. Following from our discussion of Carlile and the role of boundary complexity in information processing, we expect that the likelihood of shared understanding is a function of boundary complexity. Cognitive limitations in processing mean that as complexity increases, our ability to process this complexity decreases. Consequently, and in line with the literature, we expect the shared understanding between two people to decrease as boundary complexity increases. We visualize this assumption in the literature in Figure 1, below.

Figure 1: Impact of Boundary Complexity on Shared Understanding
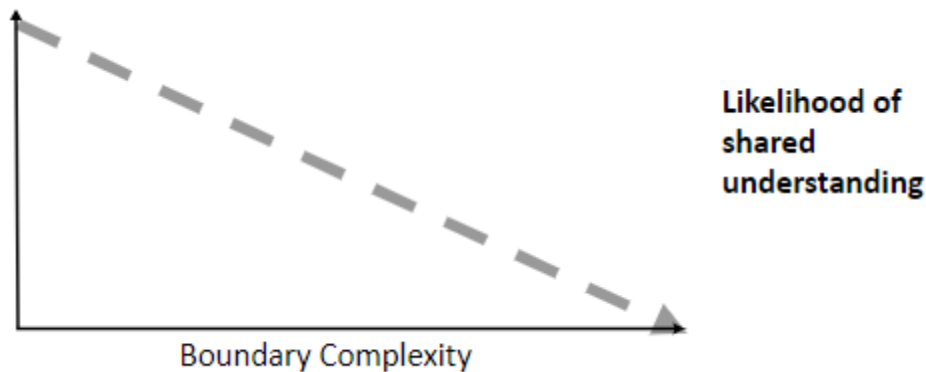
We also theorize about the nature of boundary objects and strategic representations. Figure 2 is a graphical representation of the demand for boundary objects, which we also see as a function of boundary complexity. We assume that individuals have a need for shared understanding (Baek & Parkinson, 2022; Rossignac-Milon et al., 2021). But, as the likelihood of shared understanding goes down (Figure 1), there is a growing dissonance between the level of shared understanding and our need for it. Consequently, we expect a growing demand for boundary objects as boundary complexity increases. Additionally, the reader should note that, following Csaszar (2018), we assume that internal representations exist apart from boundary objects—i.e., regardless of the level of boundary complexity, humans are attempting to make sense of it through their internal representations. Thus, internal representations exist throughout the spectrum of this complexity.

Figure 2: Demand for Boundary Objects
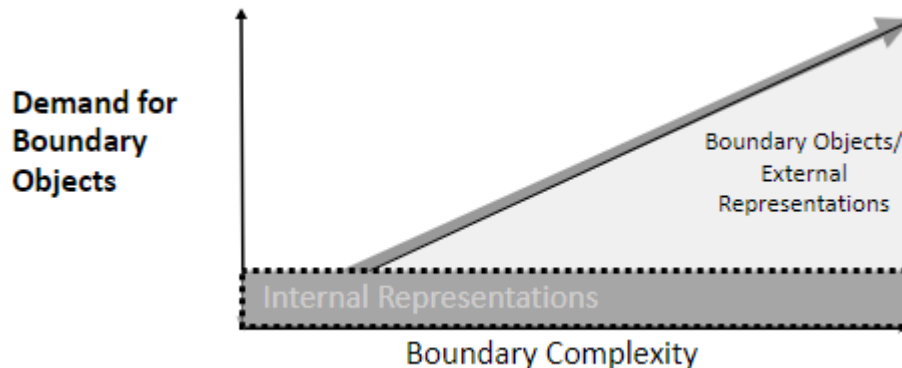
But as we noted in our experience, the existence of a boundary object does not necessarily lead to shared representations. Why? We believe that boundary objects can support the goal of shared understand but may not necessarily overcome the information processing challenges posed by complexity. In other words, if we were to overlay Figures 1 and 2, we would get something like Figure 3, below. For some range of boundary complexity, we would expect to see an increase in the probability of finding distributed representations—strategic representations about which two have a shared understanding—with the use of boundary objects.

However, as this complexity continues to increase, actors will have a harder time successfully communicating at and across these boundaries. Consequently, at some point we expect greater complexity will lead to a proliferation of external representations which yield fewer distributed representations. Such a view

supports our observation wherein the examples of "successful" boundary objects (i.e., those which led to distributed representations) were those where we believe participants held preexisting internal representations that were similar to the external representations being offered to make sense of the issue.

Figure 3: Combined Impact of Ability and Demand on Distributed Representations
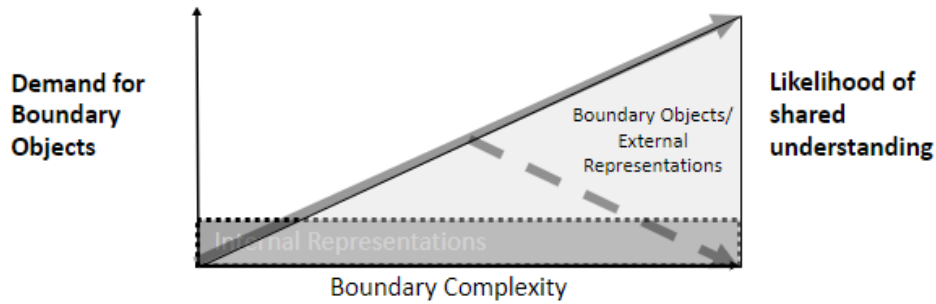
Consequently, we expect that the shape of the probability of finding distributed representations is an inverse-U function relative to a boundary's complexity, as depicted in Figure 4. We hypothesize: 1) boundaries with "lower" levels of complexity will facilitate information exchange without much need for boundary objects and present the least contention (in our case, we believe the idea of the hub-and-spoke model of information flow is an example of this hypothesis); 2) boundaries with "moderate" levels of complexity we expect actors will use boundary objects to facilitate communication, giving rise to distributed representations (in our case, the discussion of different meanings of security might be an example of this); and 3) boundaries with "high" levels of complexity will remain challenging to overcome. Thus, despite attempts to create boundary objects to effectively communicate across these boundaries, actors will still face challenges in being able to do so. We should note that our theory does not necessarily predict that distributed representations cannot arise at these higher levels of complexity. In other words, it is a theory that suggests shared understanding is more challenging—but not impossible—at higher levels of boundary complexity.

Figure 4: Probability of Distributed Representations
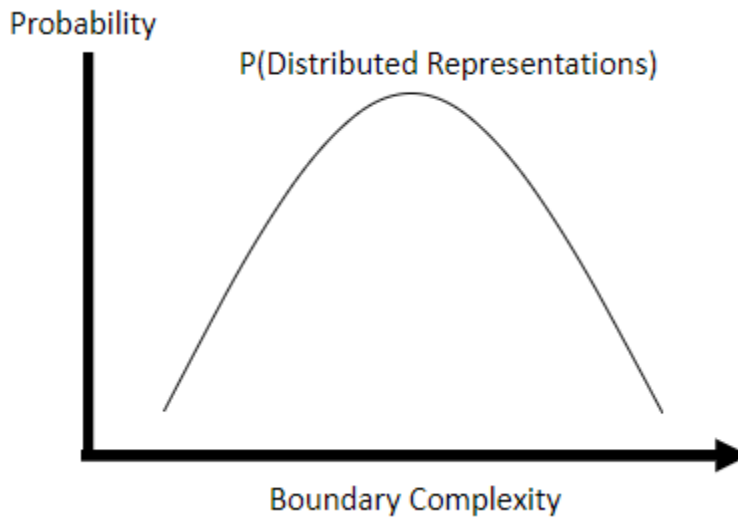
Concluding Remarks

In this study we explore how boundaries shape strategic planning processes. One of the most daunting tasks facing a strategic planner is how to make sense of complexity. Ostensibly, one's ability to make sense of this complexity contributes to their organization's success. Our review of the literature suggests that interpersonal and organizational boundaries carry information that reflects some of this complexity. Consequently, boundary issues arise because boundaries are essential junctures for processing information (Quick & Feldman, 2014). That is, boundaries are often places of tension because these are venues at which some of an organization's most important strategic issues manifest. Thus, boundaries become places at which critical strategic planning activities *should* take place. In this view, navigating and making sense of boundary complexity is a critical function of strategic planning activities. To this end, existing research suggests a variety of tools individuals and organizations can leverage to navigate these information processing challenges.

In this study we theorize about some of those tools vis-à-vis boundary complexity. Although our theory is potentially germane to all types of organizations, our interest in this study arose from an opportunity to carry out an advising function in the DoD. Additionally, through action research we saw an opportunity to inform the scholarly debate on strategic planning in public sector organizations.

Bryson's strategic planning materials gave us tools that were helpful in carrying out our mission (Bryson, 2018; Bryson & Alston, 2011). While the framework in these materials uses boundary objects—e.g., the mandate analysis, SWOC, etc.—the role of boundaries and more specifically boundary complexity is undertheorized in this approach and in the broader literature on public sector strategic planning. Whereas it is easy to point to individual and organizational issues as the drivers of many of the challenges in strategic planning processes, our study suggests practitioners or other scholars carrying out a strategic planning effort might consider and evaluate the role of boundary complexity in shaping these activities.

Although we are comfortable suggesting that the probability of finding distributed representations is a function of boundary complexity (Figure 4), we held back from theorizing about the relationship between boundary complexity and boundary objects-in-use. Whereas scholarship on boundary objects and strategic representations exist as distinct research literatures, we believe they may be useful for strategic planning when thought of as complementary to each other as discussed in the literature review section (Jarzabkowski & Kaplan, 2015; Spee & Jarzabkowski, 2009; Spee & Jarzabkowski, 2017).

We believe these relationships offer a rich area for further academic inquiry into the theory and practice of public sector strategic planning, and ultimately organizational performance. Our model may be a helpful starting point for scholars to better understand boundary objects, boundary objects-in-use, and the different representations relevant to strategic planning efforts. Others have pointed out that using a strategy tool does not equate to a successful outcome (Jarzabkowski & Kaplan, 2015; March, 2006). Nonetheless, our conjecture is that arriving at distributed representations could shape the outcomes of strategic planning efforts in important yet unexplored ways. We hope that scholars will explore these subjects and we want to highlight three questions that stand out to us as especially interesting for future research. First, what is the relationship between boundary complexity and internal representations? Second, what role do different types of representations play in the outcomes of strategic planning efforts (Csaszar, 2018)? Finally, beyond complexity, what factors might influence the use of a boundary object?

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Appendix

Appendix 1 – Eden and Huxham's (1996) 12 Contentions about Action Research

In a 1996 article in the *British Journal of Management*, Eden and Huxham lay out 12 contentions about action research. We believe our paper, "Boundary Complexity and Organizational Strategic Planning: Theory and evidence from the U.S. Department of Defense" qualifies as action research. As should become clear to the reader of both the manuscript and this appendix, the nature of this research meant we were constrained from more traditional research approaches. Especially cumbersome for us has been the problem of transparency because of the advising we undertook and the organization in which it took place. Nonetheless, we feel we have an important story to tell, one which we hope might become a valuable contribution to the study and practice of strategic planning in public sector organizations.

We have added this appendix to make a clearer claim about the nature of the project, how the research process took place, and why we believe this meets the standard of an intellectual contribution as action research. Additionally, the spatial constraints of the *Journal of Behavioral Public Administration* make this exposition untenable in the body of our manuscript. In what follows, we address each of the original 12 contentions. We build a case for how and why we believe our manuscript qualifies as action research. Readers will find the original contentions in numbered outline position—in the original article the contentions are labeled with Roman numerals, which we also retain. Emphasis in the original version has been retained in quotations. Respectively, our responses follow each numbered point.

The characteristics of action research outcomes

Generality and theory generation

1. (i) action research must have some *implications beyond* those required for action or generation of knowledge in the domain of the project. It must be possible to envisage talking about the theories developed in relation to other situations. Thus it must be clear that the results *could* inform other contexts, at least in the sense of suggesting areas for consideration.

Our response: We use this case to theorize about the nature of boundaries and boundary complexity. While we do so in relation to strategic planning in public sector organizations, we believe this could be used by scholars to study several other contexts as well.

2. (ii) as well as being usable in everyday life action research demands an *explicit* concern with theory. This theory will be formed from the characterization or conceptualization of the particular experience in ways which are intended to be meaningful to others.

Our response: The theory we develop in this case grew out of our experiences using the materials which Dr. John Bryson has spent much of his career developing. Whereas these tools were useful in that they helped us deliver a quality advising experience, our experiences also suggested to us that there was an opportunity to contribute to the theoretical understanding of strategic planning in public sector organizations.

3. (iii) if the generality drawn out of action research is to be expressed through the design of tools, techniques, models and method, then this, alone, is not enough - the basis for their design must be explicit and shown to be related to the theory.

Our response: While we see the primary generality one should draw from our paper to be theoretical, we see the potential for outcomes or products whose focus in more analytical or empirical as well. Specifically, we see the focus on boundaries and boundary complexity as being an important insight one might use in strategic planning activities by focusing attention on boundary issues to better understand strategic challenges facing an organization. Additionally, our discussion of boundary objects, boundary objects-in-use, and strategic representations suggests some direct insights in terms of how one might think about these concepts while developing a strategic plan. Nonetheless, we make an explicit theoretical argument and thus ours is ultimately a theoretical contribution.

4. (iv) action research will generate *emergent theory,* in which the theory develops from a synthesis of that which emerges from the data and that which emerges from the use in practice of the body of theory which informed the intervention and research intent.

Our response: In this section, Eden and Huxham (1996) state that action research leads to "settings that are much more amenable to *theory generation* than theory testing". In the sense of our project, we couldn't agree more since we did not actually set out to test theory in this advising experience—moreover, that was not the object of the principal. Thus, one should very much understand this research as being *emergent* in the sense that our understanding of what we were working with evolved over time as we, the research team, began to better understand the context and players. Additionally, our understanding of the theory and the process of theory building developed over time.

5. (v) theory building, as a result of action research, will be incremental, moving from the particular to the general in small steps.

<u>Our response</u>: In addition to our preceding response (iv), we must give significant credit to feedback from anonymous reviewers through journal submission processes as well as other scholars during conferences in which we presented our working papers on this project. In line with this contestation, our own understanding of the story we wanted to tell has evolved over time. And, while it has taken time to come to a place where we think we are able to contribute to theory building in a neat way, we would be remiss if we did not recognize this point, and contestation about action research, as being especially pertinent to our experiences.

6. (vi) what is important for action research is not a (false) dichotomy between prescription and description, but a recognition that description will be prescription (even if implicitly so). Thus the presenters of action research should be clear about what they expect the consumer to take from it and present with a form and style appropriate to this aim.

<u>Our response</u>: We hope that we are clear in this paper that more can be done to improve our understanding of the role of boundaries, and especially boundary complexity, in public sector strategic planning activities. Additionally, because boundaries are critical to many organizational and governmental processes in the public sector, we think this idea of the importance of boundary complexity in shaping information processing is one that should even be of interest to a much broader public administration audience.

The characteristics of action research processes

Designing action research

7. (vii) a high degree of method and orderliness is required in reflecting about, and holding on to, the emerging research content of each episode of involvement in the organization.

<u>Our response</u>: One of the more engaging parts of this project for the research team was the sensemaking that was involved on our part as we attempted to understand the organization and what it was trying to achieve on a daily basis as well as with the specific activities pertaining to the strategic plan. We include a brief discussion of these processes in our section, Background and Methods. It is also important to note that several of these experiences took place in classified environments. As a result, we are not able to produce and share the notes we took. Nor were we able to take notes from certain spaces into others. At the same time, we were able to find ways to communicate and continue to make sense of the project outside of these spaces while we were still in the advising experience and then after as well. And we were able to do this in a way that maintained integrity with safeguarding classified information and material. Thus, making sense of and maintaining an awareness of the important strategic issues across different settings was both challenging and intellectually engaging. We think this is an important point to consider regarding our argument about the novelty of this study and suitability as action research. We are both unsure of how we would have done this differently as well as how to learn from and communicate about this project. It also possibly forced us into thinking about how to communicate differently in such a way that may have spurred on some of the thinking that ultimately supported our intellectual contribution with this piece.

8. (viii) for action research, the process of exploration (rather than collection) of the data, in the detecting of emergent theories, must be either, replicable, or demonstrable through argument or analysis.

<u>Our response</u>: Eden and Huxham talk about the importance of "extensive amounts of time away from the consultancy setting and the 'hands-on' problems be devoted to reflecting about process and/or content in relation to research issues. Here, it is important to note that we didn't even really see the potential value in this project as a piece of research until the end of the off-site experience. While this clearly presents a challenge in terms of a research project, the iterative process of making sense of the events in question such that we could support the client really forced us to think though how we could communicate to different actors. On this point, it is important to note that this is likely what initially contributed to us looking at this experience through a lens of "strategic representations". To wit, we were not familiar with Csaszar's (2018) work on this specific subject until after the off-site and even the overall advising experiences had ended.

9. (ix) adhering to the eight contentions already described is a necessary but not sufficient condition for the validity of action research.

<u>Our response</u>: In this section of their article, Eden and Huxham articulate how there is a push-pull effect in that, on one hand, "*the politics of organizational change are thus a force acting against getting fully reliable data from all concerned*" but also that, "*The process of change forces a dialectic – a contrast – which helps articulation*" (Eden & Huxham, 1996, p. 82, emphasis in original). Continuing, they ultimately argue that "*the method is likely to produce insights which cannot be gleaned in any other way*" (Eden & Huxham, 1996, p. 82, emphasis in original). This, in our minds, has been a critical part of this project from the time we decided to attempt to articulate our experience in a way that could contribute knowledge to the broader community interested in the theory and practice of public sector strategic planning. As Bryson and colleagues have noted elsewhere, this sensemaking is a part of the broader activities that are inherent to strategic planning (2009). In a similar vein, we believe a considerable amount of sensemaking is required on the part of researchers of strategic planning to ultimately be able to understand and articulate to others what they have learned from their research. Additionally, it is important to recognize the emergent nature with which sensemaking often occurs.

10. (x) in order to justify the use of action research rather than other approaches, the reflection and data collection process - and hence the emergent theories - should be focused on the aspects that cannot be captured easily by other approaches. This, in turn, suggests that having knowledge about, and skills to apply, method and analysis procedures for collecting and exploring rich data is essential.

<u>Our response</u>: Potentially several aspects of this case apply to this contention. Of these, one stands out. Even if we had started this project with an intention to study this subject, the problem of access—both to the organization and to the sensitive nature of operating in classified environments—mean this experience provided limitations to more traditional research approaches. Additionally, as we discussed above, the sensemaking aspects of this experience ultimately required the research team being amenable to an approach that evolved over time.

11. (xi) in action research, the opportunities for triangulation that do not offer themselves with other methods should be exploited fully and reported, but used as a dialectical device which powerfully facilitates the incremental development of theory.

<u>Our response</u>: Because many scholars may be more comfortable with positivist and postpositivist orientations, a sensemaking approach may present challenges for some about the internal or external validity of studies using this approach, especially case studies. As a result, several scholars argue that researchers who use this approach must be mindful about these issues (Harrison, Birks, Franklin, & Mills, 2017; Robert E Stake, 1995; Robert E. Stake, 2005; Yazan, 2015). Other scholars advance the notion of being more deliberate about these concerns in public administration research as well (Ospina, Esteve, & Lee, 2018). Triangulation is one way for scholars to address these issues (Denzin, 1971; Robert E Stake, 1995; Robert E. Stake, 2005; Yin, 2014). Four ways scholars can triangulate data include: data source—incorporating multiple sources of data; investigator—having multiple investigators contribute to the research; theory—using more than one theory or theoretical perspective to understand the research; and methodology—allowing for two or more methodologies or methodological perspectives to understand the research.

We feel that we have met these thresholds of triangulation in the following ways. First, pertaining to methodologies, we used the Bryson materials to carry out the mandate analysis, SWOC, and the development of strategic issues (John M. Bryson, 2004; John M Bryson & Alston, 2011). We also ran interviews and meetings with strategic planning participants and delivered an organization-wide survey. Second, pertaining to data sources, based upon these methodologies, data that became relevant to this project came from the interviews and meetings with leadership teams, the organization-wide survey, and many of the workshop activities. As we have indicated in other places, one of the important aspects of this project for us was to try and understand participant input and make sense of the broader picture which was unfolding before us. Third, pertaining to the relevant investigators, we carried this out as a research team. As a result, there was significant triangulation even amongst ourselves about what we were doing and how we were making sense of the advising experience. Finally, pertaining to theory, the process of attempting to produce an intellectual contribution ultimately required us to incorporate various theories and theoretical approaches. It is probably worthwhile to mention that one of the members of the research team has previously undertaken research in behavioral public administration and was thus mindful of how individual and organizational cognitions may have been affecting the strategic planning activities. Though we did not actively attempt to collect data on this process during the activities, it was a lens with which the research team was considering how these events transpired. This is an important acknowledgement because another way theory contributed to the process of triangulation is as the paper developed over several iterations of conference presentations and reviewer feedback. The first draft of this paper focused on language use and strategic representations. While this latter theoretical story has been a part of the project since the initial draft, various anonymous reviewers have asked us to consider things like organizational structure, boundary objects, and various other topics. By this point we have settled on the problem of boundary complexity as a problem for information exchange, which is of course critical in strategic planning activities.

12. (xii) the history and context for the intervention must be taken as critical to the interpretation of the likely range of validity and applicability of the results.

<u>Our response</u>: We feel that this is a neat case. While this is a one-off case study of a unique organization, we are ultimately making a "most likely case" argument in that what we are theorizing about is a characteristic of organizational structure that all organizations share—boundaries. Our theoretical argument builds from various topics of research. But each of these subjects are all ultimately interested in understanding, in some way, the role of organizational structure in information processing. Our argument is that boundary complexity shapes the ability to communicate and understand information in important ways. We theorize about the relationship between boundary complexity and 1) the existence of boundary objects and 2) the nature of strategic representations held by individuals at those boundaries. Because communication and

information processing are critical activities in strategic planning, we believe our argument should hold some validity for any organization that is undertaking a strategic planning process.

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