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**SEEING THE FOREST AND THE TREES:
HOW A SYSTEMS PERSPECTIVE INFORMS
PARADOX RESEARCH**

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ABSTRACT

Paradox research has fundamentally changed how researchers think about organizational tensions by emphasizing their oppositions *and* their interdependencies. Yet, most paradox studies focus on salient, perceived tensions, ignoring latent, nested tensions and their complex interconnections. This partial view is rooted in the paradox literature focusing on the epistemological realm (actors' perception of tensions) while disregarding the ontological realm (tensions' underlying reality). The focus on the epistemological aspects of the tensions impedes researchers from moving to more intricate insights into paradox, which could help address the realities of complex issues, such as wicked problems. We propose a systems perspective on paradox that discriminates the epistemological understandings from the ontological realities of tensions. By revealing the ontology of tensions, the underlying complexity becomes empirically interpretable. We illustrate the power of this approach by offering two research strategies that can help researchers and organizations apprehend systems' tensions.

KEY WORDS

Complexity, Paradox, Scale, Sustainability, Systems, Wicked problems

INTRODUCTION

Today's complex business environments generate conflicting goals and competing demands for managers and organizations, which in turn drive management researchers' attention to paradox theory (Smith and Lewis, 2011). Whereas management scholars have historically taken a trade-off (either/or) approach to tensions, paradox theory proposes an integrative (both/and) perspective (Lewis, 2000; Poole and Van de Ven, 1989). Driven by the goal of identifying opposing elements' underlying interdependencies (Farjoun, 2010), perceived tensions are the starting point for most paradox studies.

Nevertheless, the focus on salient, perceived tensions provides only a partial view – a view that simplifies organizational realities because it masks the underlying complexity of nested, latent tensions (Schad et al., 2016). The epistemological realm of tensions (i.e., actors' perception of tensions) differs from their ontological realm (i.e., tensions' underlying reality). Most paradox studies focus on the epistemological, which is understandable, given that researchers tend to study salient tensions as they emerge in empirical contexts. Yet, this focus on the epistemological impedes researchers from exploring the complex ontological realities that shape organizational actors' perception of tensions.

In this *Point*, we explore the connection between the ontology and epistemology of tensions in the context of wicked problems. Organizations increasingly face business issues with larger societal implications (George et al., 2016) that cause wicked problems, which are system problems characterized by complex dynamics exposing multiple tensions across levels of analysis (Reinecke and Ansari, 2016). Such problems include climate change, digitalization, economic crises, and poverty. While scholars recommend that paradox theory be applied to address wicked problems (Smith et al., 2017; Smith and Tracey, 2016), the epistemological focus on perceived tensions overlooks the complex, ontological realities that cause them. For example, even if actors deny climate change and, therefore, do not perceive any tension, it does

not mean that the climate is not changing. Further, even if actors acknowledge climate change and experience tensions, dealing with the tensions does not necessarily address the underlying reality of climate change. Consequently, the source of tensions, whether they are perceived or not, still matters.

We suggest that a systems perspective is helpful in this respect because actors are more likely to perceive tensions in complex systems, but these systems also harbor latent tensions that actors do not perceive. Our *Point* is that, by recognizing current paradox theory's epistemological bias, we can reveal the ontological domain, thereby exploring the complex systems that generate tensions. Organizational actors may become aware of tensions through systems dynamics (Stacey et al., 2000), although changes in the underlying relationships are not always visible. By applying a systems lens to tensions, we provide an understanding of the complex interconnections at the heart of these tensions (Simon, 1996) and the dominant processes that shape a system (Plowman et al., 2007).

We offer two approaches to apprehend tensions' ontological features: 'zooming out' to see new relationships, and 'zooming in' to uncover the dominant tensions. These research strategies can help organizations anticipate unintended consequences when dealing with paradoxes embedded in systems, because by acknowledging the complexity of the systems that harbor these tensions, latent tensions become salient. Our insights also respond to recent calls for research to theorize unprecedented complexity (Dick et al., 2017).

We proceed as follows: We first outline the merits and limitations of paradox research to capture complex realities. Next, we explain the ontological features of a systems perspective on paradox and detail how these features can be unpacked via their temporal and spatial scale. These ontological insights inform two research approaches to paradoxes in the epistemological world. We conclude our *Point* by presenting suggestions for future research.

PARADOX THEORY AND COMPLEX REALITIES

Since complex environments exhibit goal conflicts and competing demands (Smith and Lewis, 2011), paradox theory offers a timely perspective on tensions. As a meta-theory, paradox engages researchers in a conversation about organizational tensions and their management (Schad et al., 2016). This meta-focus provides rich insights into very different contexts, such as identity (Chreim, 2005), legitimacy (Scherer et al., 2013), and strategy (Dameron and Torset, 2014), at the individual (Miron-Spektor et al., 2018), organizational (Schmitt and Raisch, 2013), and field (Bartunek and Rynes, 2014) levels of analysis.

By framing recurring tensions as a paradox – a “persistent contradiction between interdependent elements” (Schad et al., 2016, p. 10) – scholars endeavor to explore opposing elements’ relationships. The paradoxical elements form a duality, are “oppositional to one another yet [...] also synergistic” (Smith and Lewis, 2011, p. 386); they thus simultaneously support and oppose one another (Farjoun, 2010). Driven by a search for the interdependence between opposing elements, most paradox studies take a single perceived tension as a starting point and propose managerial approaches to accommodate this ‘problem’ (Farjoun, 2017).

These approaches include organizational responses to accept, confront, and transcend tensions (Lewis, 2000). Paradox studies formulate these responses to address salient tensions – the tensions that organizations and decision makers perceive. This focus on the epistemological realm is natural, since perceived tensions are characteristic of an empirical context. However, the systems attributes underlying tensions may remain latent (Bansal et al., 2018). Failure to recognize the underlying complexity hampers our ability to conceptualize and approach paradox. These limits could create repercussions and unintended consequences when managers use partial approaches to cope with paradoxes with a complex underpinning.

For instance, scholars have recently presented paradox theory as a means to address and tame wicked problems, which abound with tensions (Smith et al., 2017; Smith and Tracey,

2016). Wicked problems are complex challenges related to scarce environmental and societal resources, such as climate change or economic crises (Camillus, 2008; George et al., 2016). With their inherent complexity, wicked problems are “caught in causal webs of interlinking variables” (Reinecke and Ansari, 2016, p. 299), connected across multiple levels of analysis, and evolve over time (Ferraro et al., 2015; Rittel and Webber, 1973). Since their roots are tangled, such problems are hard to capture (Camillus, 2008). While scholars draw on paradox to find managerial approaches to cope with wicked problems (Slawinski and Bansal, 2015), the focus on the perceived tensions overlooks the complex systems that cause the tensions.

A few pioneering studies describe tensions as interwoven with other tensions and nested across space and time (Andriopoulos and Lewis, 2009; Jarzabkowski et al., 2013; Sheep et al., 2017). However, these studies do not necessarily address the underlying causes of the tensions, because they emphasize their empirical qualities – the tensions people within organizations perceive – and not the complex relationships that harbor latent tensions. This widespread research practice implies that if tensions are not perceived, they are not important. Paradoxes and their subsequent reactions are subject to what Bhaskar (1975) calls an *epistemic fallacy* – the confusion between ontology and epistemology.

Ontological questions differ from epistemological questions. Ontologically, the paradoxes related to wicked problems can be understood as manifested in systems where different elements within such a system interact and inevitably create tensions with other elements. Consequently, such tensions demand a different set of tools than those that paradox researchers offer. The paradox literature’s epistemological bias therefore results in a failure to conceptualize the complex realities in which paradoxes are rooted. We thus argue that there is value in understanding the ontology of the systems and their relationship to the perceived tensions, which we develop in the remainder of our *Point*.

SYSTEMS THEORY'S ONTOLOGY

Systems thinking is not new to the paradox literature, because “tensions appear inherent and ubiquitous in organizational life, arising from the interplay among complex, dynamic and ambiguous systems” (Lewis and Smith, 2014, p. 132). Systems theory originates from the natural sciences and introduces systems dynamics, complex adaptive systems, and general systems theory to social sciences (e.g., Ashby, 1956; Luhmann, 1995) and management studies (e.g., Anderson, 1999; Sterman, 2000). In addition, systems theory increasingly informs sustainability research (e.g., Bansal and Song, 2017; Schneider et al., 2017), which often investigates wicked problems, such as climate change and global warming. Most systems’ underlying assumption is that their elements exist independently of the observer, as is the case in the biophysical environment (Bhaskar, 1975).¹

We briefly describe three key properties of a system, specifically their interconnections, hierarchy, and emergence:

Interconnections. The systems perspective shifts the research focus from closed or controlled systems with limited elements to open systems with connections between a large, potentially undefinable, number of elements (Von Bertalanffy, 1972). The earth’s climate, for instance, has different elements, such as air pressure, humidity, and temperature, which are connected and determine the local weather (Bonan, 2015). These elements evolve by means of the same resources (e.g., solar exposure) and influence one another – their interconnections are manifested through processes (Kauffman, 1993).

Hierarchy. Systems comprise subsystems, which further nest in and can be connected to other subsystems (Kauffman, 1993; Simon, 1996). These subsystems perform specific functions with their own process dynamics (Anderson, 1999). Our planet comprises a number

¹ Bhaskar’s (1975) concept of critical realism informs this conception of systems: Ontologically, there are real mechanisms at play, which differ from their epistemological perception. In this sense, reality denotes an objectivity beyond what organizational actors perceive.

of subsystems, including the atmosphere, hydrosphere, cryosphere, biosphere, and pedosphere, which integrate to form the earth's climate (Bonan, 2015). However, merely analyzing single subsystems will not lead to an understanding of the earth's climate. For instance, extreme weather events do not, as such, signal climate change (Easterling et al., 2000). In other words, a system can only be understood in its totality (Holling, 2001).

Emergence. System elements reconfigure continuously and can ultimately form a relatively stable pattern, giving the various elements a limited range of positions relative to the others. Although the individual parts and the underlying mechanics are not always fully understood, the emergent system is observable (Bhaskar, 1975). A system's interconnections imply that a change in one system element can result in knock-on changes throughout the system (Stacey et al., 2000). The patterned connections between the system elements, which are sometimes tightly coupled, harbor dominant processes (Siggelkow, 2011). Dominant processes shape systems emergence by intensifying small changes (Goldstein, 1999), since a relatively dense set of interconnections surrounds a dominant system process (Plowman et al., 2007). Returning to our previous example, external forces (e.g., insolation intensity) and internal forces (e.g., human activity) influence the earth's climate. Since the industrialization age, human activity has emerged as a dominant process, leading to an increase in carbon dioxide in the atmosphere (Bonan, 2015). These changes are connected to and influence resources in other parts in the system, thus collectively leading to climate change.

Systems theory has the potential to advance our understanding of wicked problems and their underlying tensions. By applying systems theory, we can apprehend a complex phenomenon without having a clear, a priori understanding of its generative mechanisms. This echoes recent calls to "complexify" our theories to match complex realities (Tsoukas, 2017). Individual researchers perceiving the environment as highly complex can thereby close this "complexity differential" (Schneider et al., 2017), since environmental complexity depends on

the mental models and representations of the observer (Luhmann, 1995). We therefore carefully “complicate” paradox theory to better understand the tensions in complex systems.

A SYSTEMS PERSPECTIVE ON PARADOX

A systems perspective provides key insights into paradoxes embedded in open systems. In this section, we first argue that to capture a system’s ontology, researchers need to discriminate between the perceived tensions and their underlying features. We then describe how perceived, salient tensions can help uncover unperceived, latent tensions. Finally, we present two new approaches to apprehend the real-world complexity of paradoxes.

Discriminating between the Epistemological and Ontological

The paradox literature is inclined to blur tensions’ epistemological and ontological features, which reduces the perspective’s usefulness for addressing system problems. Smith and Lewis (2011) describe such tensions as both “system-inherent” (i.e., ontology) and “socially constructed” (i.e., epistemology). From this viewpoint, paradoxical tensions lie “dormant, unperceived, or ignored” in organizations until environmental factors and actors’ cognition render them salient (Smith and Lewis, 2011, p. 390).² In other words, many paradoxes have yet to be actualized.

In this blurring of the epistemological and ontological dimensions, there is a bias among researchers towards the epistemological. Paradox studies generally distinguish four types of tensions: belonging, learning, organizing, and performing (Lewis, 2000; Lüscher and Lewis, 2008; Smith and Lewis, 2011). Although Smith and Lewis (2011) acknowledge that system dynamics can cause these tensions, all four types focus on the individual or collective

² We agree with Smith and Lewis (2011) that tensions can be latent. While they argue that these tensions do not play a role until they are rendered salient through environmental dynamics or actors’ cognition, our perspective proposes a way to bring latent tensions to researcher’s attention.

perception of tensions. Even if their reality is the same, the perceptions may vary widely across different groups of organizational actors.³

The same applies to managerial approaches to paradox. Lewis (2000) discusses strategies to accept, confront, and transcend paradox. Smith and Lewis (2011) suggest that organizations constantly move between differentiation and integration strategies to successfully manage a tension. Lüscher and Lewis (2008) suggest that, rather than seeking to eliminate paradoxes, organizations should accept tensions to support ‘coping with’ and ‘working through’ paradox in order to generate creative outcomes.

While paradoxes relating to the epistemological domain can be accepted, confronted, or transcended, these strategies do not address their ontological features. The current approach formulates tensions in single-level, controlled systems. However, in the context of wicked system problems, multiple tensions span various levels of analysis (Ferraro et al., 2015), which are embedded in complex, open systems. This systemic embeddedness makes the blurring even more problematic. Tensions’ underlying ontological features cannot be simply ‘wished away’ – they require behavioral changes. Merely ‘accepting’ tensions associated with climate change is not an option for people physically experiencing the consequences of the extreme weather associated with a changing climate.

This multiplicity of tensions and paradoxes that accompanies the wicked problems within a system underscores the importance of discriminating the ontological from the epistemological. When organizational actors inform research, it could overlook tensions rooted in an underlying system. For instance, climate change involves numerous paradoxes, including those between short-term business needs and long-term societal needs (Slawinski and Bansal, 2015). Managers *perceive* intertemporal tensions and their businesses’ role in society, which

³ This is also consistent with a Luhmannian reading of systems (Seidl and Mormann, 2014): Complexity lies in the eye of the beholder. Individuals and organizations vary in their perception of the environment’s complexity depending on their own complexity (Schneider et al., 2017).

reflects their epistemological interpretation of climate change as a salient issue. However, businesses also face tensions and trade-off decisions linked to *systems* by having to decide how much carbon to emit and when – the ontological reality. Both the epistemological and ontological are related; real systems dynamics (e.g., the dynamics of biophysical carbon emissions) lead to perceived tensions (e.g., intertemporal tensions) and the perceived paradoxical tensions are often a reflection of the underlying systems dynamics. To manage these tensions jointly, businesses must not only manage their perception of time and their role in society, but must also understand biophysical carbon emissions' system dynamics. Merely *perceiving* the tension does not mean that the underlying real issue will be addressed.

A first important step towards a systems perspective is therefore to overcome this *epistemic fallacy* (Bhaskar, 1975), which starts with the realization that systems properties underlying a tension differ from the perception of that tension. While paradox thinking helps organizations perceive both sides of a tension to manage it successfully, this view is not sufficient for paradoxes embedded in systems. Addressing such paradoxes' ontological qualities effectively requires an understanding of the underlying system's full complexity. The ontology of systems therefore points to an opportunity to use systems-based analytical tools to reveal insights into epistemological understandings of tensions. If we are to reach the ideal of maintaining the earth's resources into perpetuity while assuring access to resources for everyone, it is important to avoid epistemic fallacies and to tackle the paradoxes related to the real world differently from those in the empirical world.

What the Epistemological Can Tell Us about the Ontological

Once we discriminate between the epistemological and ontological dimensions of tensions, we can use the perceived tensions (epistemology) as a gateway to understanding these tensions as embedded in a complex system (ontology) and vice versa. In this subsection, we

will describe how perceived tensions can reveal features of the system, why ignoring the underlying ontology and relying exclusively on perceived tensions can cause unintended consequences, and how perceptions can change by exploring the scale of the system's ontology.

First, there is a mutual relationship – the system's ontological features inform the perceived tensions. Systems theory tells us that dynamic processes render tensions salient. For instance, Palermo et al. (2017) found that, following the financial crisis, managers and regulators' attention shifted to firms' risk cultures. This shift provided the basis for debating the financial sector's goals, which relates to the ontological side of the crisis. Yet, instead of addressing this side, actors engaged in a discussion about opposing viewpoints of the means to achieve these ends. This discussion amplified the situation's complexity, drawing actors farther from the ontological issue. This example illustrates that while the perception of tensions can bring us closer to the underlying systems issue, researchers have to carefully select which of the perceived tensions are helpful to gain more insights into the system.

Second, perceived tensions can reveal a partial understanding of the underlying system dynamics. However, because the understanding is only partial, attempting to resolve the tensions can actually create more harm than good. For instance, businesses will often refer to the opportunity to create a win-win in dealing with climate change – by seeking manufacturing efficiencies, they can reduce their costs *and* reduce carbon emissions. Although this approach does address the tension in the short term, it may actually harm the environment and the organization more in the long term, because the increased efficiency could encourage organizations to manufacture more goods, leading to an increase, rather than decrease, in the total carbon emissions. Reducing the total amount of carbon emissions requires a systems approach that aligns business and society over the long term (Slawinski and Bansal, 2015). Managing the perceived tension within its spatiotemporal boundaries may not address the problem itself if the system properties are not understood.

Third, by recognizing that tensions are epistemological, the systems features come into sharper focus. Specifically, the scale of the system's spatiotemporal processes becomes salient in order to understand latent tensions (Bansal et al., 2018). Processes' spatial attributes include the geographical boundaries within which they occur (Swyngedouw, 2004), while temporal attributes refer to their variations over time (Zaheer et al., 1999). For instance, climate change has a global scale over long time scales, whereas chemical pollution has a regional scale and can be detected and tackled relatively quickly (Whiteman et al., 2013). We suggest that organizations can engage in two different epistemological processes to help address the tensions' underlying ontological qualities. Specifically, 'zooming out' requires organizations to take a more macro perspective, a higher system scale, to see a different set of relationships than found in a more micro perspective. On the other hand, 'zooming in' provides an understanding of the dominant processes that lead to the emergence of systems changes.⁴ By considering system properties at different scales, actors can gain insights into the latent ontological features of paradoxes which facilitates their empirical interpretation.

Two Approaches to Apprehend Paradoxes Grounded in Systems

Having outlined the differences and relationship between the ontological and epistemological, we now move to the question of how organizations can deal with the paradoxes related to systems' complexity. We argue that research needs to better identify tensions generated by systems, because the research strategies proposed may not be helpful, or even counterproductive and harmful, when endeavoring to manage ontologically grounded tensions. Conceptualizing the scale of such tensions reveals their system properties and renders latent

⁴ We borrow the terms 'zooming out' and 'zooming in' from Nicolini (2009). He uses these terms as research strategies to explore practices, and starts with 'zooming in' before 'zooming out.' While Nicolini's (2009) use and our use differ slightly, they share the common objective of tracing connections.

tensions salient for empirical interpretation. This perspective requires researchers to extend paradox theory's boundaries to more fully capture the world's complex realities.

A systems perspective offers insights into two aspects of perceived tensions: First, the interconnections and hierarchy in systems help conceptualize how a tension is nested across levels. Second, emergence in systems represents the underlying systems structure that helps interpret paradoxes. To help researchers capture these insights, we adapt Nicolini's (2009) research strategies to trail connections: 'zooming out – seeing new relationships' (hierarchy) and 'zooming in – uncovering the dominant tensions' (emergence). Zooming out reveals different underlying interconnections (Palermo et al., 2017). Zooming in then allows for making sense of the multiple interconnections by bringing "to the fore certain aspects while pushing others into the background" (Nicolini, 2009, p. 1402), thereby identifying the dominant processes that drive a system's emergence. Both strategies require acknowledging the systems scale, which describes the dominant interconnections between the systems elements. These approaches to tensions recognize that systems dynamics may be at the heart of perceived paradoxes, because people inherently intuit the connections between different systems.

Zooming out – Seeing new relationships. Researchers and organizations can elevate their level of analysis to overcome boundaries and address the ontological features underlying tensions. Systems have observable empirical qualities that can be discerned through different levels of analysis to reveal their scales (Cash et al., 2006). The paradox literature has found that tensions can be nested across different organizational levels (Andriopoulos and Lewis, 2009; Jarzabkowski et al., 2013; Lüscher and Lewis, 2008). Since a paradox is "subject to its temporal and spatial constraints" (Poole and Van de Ven, 1989, p. 565), temporal and spatial scales can be applied to explore the underlying hierarchy.

Paradoxes occur on different scales and reveal different logics on these scales. Bansal et al. (2018) use the example of predators and prey: On a regional scale, the relationship between

predators and prey is negative, as more predators usually mean *fewer* prey, and vice versa. On a more macro scale over a larger geographical space and longer timeframes, more predators mean *more* prey, because the underlying processes relate to the general resource availability, such as the ecosystem's health and the total amount of vegetation. This example suggests that observing a tension on a higher scale reveals a different set of connections. In terms of perceived tensions, this implies that, while individuals might experience tensions and face daily trade-off decisions, the underlying duality can be uncovered at a higher, more abstract level of analysis. While individuals perceive tensions, applying a paradox frame can help them cognitively grasp the opposing elements' relationship (Hahn et al., 2014). Tensions are thus understood when people elevate the level of analysis, and the new logic may help transcend the tension (Farjoun, 2010).

Inherently, paradox's *both/and* logic recognizes the importance of levels of analysis. For instance, when organizations need to manage their resources over a short timeframe and within a given unit, they have fewer options. Resource allocations across a short time or space often require trade-off decisions. However, one system may benefit from large resource endowments, while another system may experience resource scarcity. By elevating the level of analysis, the boundaries and the associated resource endowments are better understood. This can be applied to geographical spaces by including more actors or elements in the system and to timeframes by looking further into the future or past. Increasing the scale means more interconnections are made between the systems elements, and more patterns and opportunities are discerned.

Conceptualizing a tension's scale via a systems perspective provides the insight that paradoxes reflect connections between parts of a system, and when the levels of analysis are elevated, the initial tension can be transcended. The tension between business and society helps illuminate this point. Some scholars argue that resource distributions create tensions between businesses and society (Margolis and Walsh, 2003), because businesses must choose to either

distribute resources to their shareholders or to society. Business operates on a smaller scale than society and its processes tend to operate faster than those of society. Tensions between business and society at one level of analysis or timeframe can therefore be alleviated by elevating the scale, which allows the business system's nestedness to be seen as part of the larger system. Businesses that impoverish the society in which they operate will ultimately undermine their own future success. A longer timeframe reveals this relationship more fully, as well as the ways in which companies can satisfy both their business needs and society's needs (Slawinski and Bansal, 2015). Consequently, while business and society can be interpreted as a tension, observing the tension across systems reveals the hierarchy in which businesses are *embedded* in society.

While our approach suggests that a tension may be transcended when observed at a higher level of analysis, which represents a larger scale, the perceived tension is only eliminated when there are behavioral changes. Understanding a system's hierarchy by changing the level of analysis may change the perception of the tensions by revealing a different set of interconnections and, thereby, new options to help manage paradoxes. However, if scale is not considered, managing one tension at a level of analysis may simply reproduce the tension on a different level (Schad, 2017). Simply put, we argue that by *not* accepting the boundaries that our perception of tensions sets, we can transcend these boundaries in a quest for a more complex understanding of tensions and the approaches to cope with them.

Zooming in – Uncovering the dominant tension. Paradoxical tensions can be interwoven, can co-evolve, and mutually influence one another (Jarzabkowski et al., 2013; Sheep et al., 2017). Elevating the level of analysis (zooming out) brings the entire system into view and makes its boundaries empirically interpretable. While this first approach helps identify a larger set of interconnections, it does not provide managerial guidance if there are multiple interwoven tensions. Such tensions are based on systems dynamics within the same scale and

with actors sharing the same resources. A system's ontology tells us that there are multiple interconnected processes, but tends to harbor a dominant process that influences systems emergence (Goldstein, 1999; Siggelkow, 2011). By lowering the levels of analysis (zooming in), observers are better able to uncover the complex interactions and the dominant processes that shape changes in the system.

The paradox literature has identified multiple interwoven tensions as coevolving (Jarzabkowski et al., 2013) and co-constructed in the form of complex 'tensional knots' (Sheep et al., 2017). While these empirical studies on perceived tensions advance our understanding of paradoxes, they also have shortcomings, which system theory helps address. Systems on the same scale share the same resources (e.g. attentional, financial, natural, and time), which means they can be understood through their dominant process (Swyngedouw, 2004). For instance, in a study of the financial sector following the financial crisis, Palermo et al. (2017) found that businesses were experiencing tensions related to their risk culture. However, by elevating their level of analysis, businesses could bring their overall relationships into view, including the tensions at the individual, firm, and sector levels. Actors engaged in discussing multiple opposing tensions (Palermo et al., 2017), which increased the complexity of getting to the core and deviated their attention from the underlying issue. Yet, zooming into the perceived risks or tensions after the financial crisis reveals the elements of the system that led to the emergence of the financial crisis, specifically the overleveraged resources (Bansal et al., 2018). Consequently, the perceived issues need to be aligned with the dominant process's requirements.

While this example shows the value of identifying a dominant process, the dynamics related to a system's emergence can complicate the situation. A change to one part of the system can lead to changes in other parts (Stacey et al., 2000). For instance, firms often need to engage in collaboration to understand the complexity of wicked problems and increase the scale of their

impact (Bowen et al., 2018; Schneider et al., 2017). However, the temporal and spatial scale of such ‘coopetition’ must be considered when managing a dominant tension. While collaboration between rivals may decrease competition in the short term, it can lead to stronger competition in the long term (Ingram and Yue, 2008). Further, while collaboration is aimed at reducing costs due to the emergent synergies, the associated coordination costs may exceed the savings (Gulati et al., 2012). Changing a system implies reconfiguring the interconnections, which will impact the distribution of scarce resources. Conceptualizing emergence within systems is a potential approach to anticipate the unintended consequences of collaborative solutions.

While different paradoxes have often been treated as equally important, our perspective reveals that some tensions might be more important, since they channel key resources in an emerging system. Simply put, we argue that when systems emerge, there are dominant processes that generate perceived tensions. Since managers have limited resources to address paradoxes, they can manage these resources more efficiently by attempting to understand the dominant process that underlies the tension. The challenge lies in most managers starting with a perceived tension, which masks crucial system properties. An often invisible dominant systems process that hides behind short-term resource demands and contains latent tensions complicates the challenge even more. Applying both of our suggested approaches – zooming out and zooming in again – can help overcome this problem.

DISCUSSION AND FUTURE RESEARCH

Paradox research seeks to identify the interdependent nature of a persistent tension’s two elements, which explains why most paradox studies focus on leveraging salient tensions’ synergies. This research practice may overly simplify the complex realities of paradoxes and current approaches to paradox can therefore have unintended consequences, while

organizations perceive such tensions as urgent, as they tend to dominate the organizational context.

Our *Point* proposes a systems perspective on paradox to capture its complexity and to overcome paradox theory's current limitations. We discriminate between tensions in the ontological and epistemological realm, thus informing the empirical interpretation of system tensions that might otherwise remain latent. By capturing a system's complexity, we can better understand some of the perceived tensions and apprehend the underlying system issues. While we use wicked problems to illustrate our argument, our proposed systems perspective on paradox applies to many complex challenges that contemporary companies face and therefore extends paradox theory's boundaries and sharpens its conceptual core in several ways:

First, the current paradox literature agrees that tensions can be inherent in systems or socially constructed (Smith and Lewis, 2011). We extend prior research by explaining that discriminating the epistemological and the ontological nature of tensions plays a key role in addressing tensions in complex systems, such as wicked problems. Specifically, the perception of tensions (epistemology) differs from their underlying systems dynamics and complexity (ontology). Researchers and organizations should aim to understand when paradoxes are grounded in ontological phenomena that require a systems understanding. The underlying features of such tensions are subject to systems dynamics and can be important even if they are not perceived. Relying on a perceived tension risks overlooking the underlying system and, more seriously, escalating the tension. By discriminating between and working through perceived tensions and their ontological features, organizations can avoid unintended consequences.

Second, the literature's dominant logic of conceptualizing paradoxes as dualities (Farjoun, 2010; Smith and Lewis, 2011) has limited it to the two elements of a tension's interdependent nature. Our perspective suggests that such interdependence can be more

complex when rooted in systems. We provide important insights into how paradoxes are nested across levels of analysis and how multiple paradoxes are interwoven (Jarzabkowski et al., 2013; Sheep et al., 2017). Our *Point* suggests that systems dynamics can generate paradoxes, and that they are often linked to a dominant process within a system. Once organizations recognize this system dynamic, they can conceptualize and explore the interdependence between the tensions beyond duality. Our examples of wicked problems show that such tensions' interdependencies can be identified outside an organization's boundaries, whereas the environment's role has been largely absent from the paradox literature (Smith and Tracey, 2016).

Third, paradox research has provided little insight into how salient and latent tensions are related. While the literature has dealt with salient tensions, or how actors can render tensions salient (Knight and Paroutis, 2017), this *Point* shows that a salient tension is sometimes just the beginning of an analysis when dealing with systems dynamics. We extend the boundaries of paradox by going beyond reactive 'coping with' and 'working through' approaches. Instead, we suggest that using a systems perspective of paradox allows researchers to observe more. Our approaches to zooming out and zooming in shed much needed light on latent tensions and make them empirically interpretable for researchers. Recognizing a system's scales helps organizations proactively address latent paradoxes even before they occur, thus moving potentially closer to a solution to wicked problems.

Our proposed systems perspective on paradox opens avenues for future research. We position paradox as a promising way to gain insights into managing complexity, an issue increasingly attracting research attention (Dick et al., 2017). To capture complexity, Tsoukas (2017) calls for conjunctive rather than disjunctive theorizing, which is inherent in the both/and logic that paradox scholars apply. We take paradox's logic a step further by urging researchers to explore the underlying complexity – which they can do by 'zooming out' and 'zooming in' (Nicolini, 2009; Palermo et al., 2017). This way, we hope to apprehend the wicked problems

that dog us by providing an idea to close the ‘complexity differential’ between researchers and their environment (Luhmann, 1995; Schneider et al., 2017). We consider this is an exciting way forward.⁵

Studying paradoxes through a systems perspective reveals complexity, surprises, and unintended consequences. While it is challenging to capture such phenomena, qualitative comparative analysis (QCA) offers a promising method for studying them. Contrary to linear, causal analysis, QCA uses a set-theoretic, configurational approach (Fiss, 2007). This shifts the focus to studying causal complexity (Misangyi et al., 2017), which has the potential to identify how tensions can be interconnected and interact (Lewis and Smith, 2014), and provides a useful focus for studying dominant tensions.

Our perspective is especially useful for exploring tensions in the context of complex, uncertain environments. For instance, the stakeholder literature has started a lively discussion on value creation (Parmar et al., 2010), moving from the tensions between groups to seeking the synergies between them (Tantalo and Priem, 2016). Our perspective sheds more light on the stakeholders who are part of a value creation system and identifies the relationships that dominate such a system. Further, scholars have recently presented institutional complexity and paradox theory as complementary approaches (Smith and Tracey, 2016). Exploring paradoxes in institutional theory (Scherer et al., 2013; Tracey and Creed, 2017) by means of temporal and spatial scales can help identify why some logics dominate and provide insight into how to manage them. This can in turn shed light on whether institutional ambidexterity (Greenwood et al., 2011) can help manage systemic tensions.

⁵ A recent paper by Ahmadi et al. (2017) supports our optimism. Since complex environments imply a high degree of uncertainty, managers and researchers might experience anxiety. Yet, taking a psychological perspective on managerial behavior under high complexity, Ahmadi et al. (2017) find that managers tend to adopt an exploratory orientation.

CONCLUSION

The question this *Point* addresses is whether paradox theory is capable of capturing the complex realities that contemporary organizations face. We argue that the literature currently overlooks the difference between perceived tensions (epistemology) and their underlying systems (ontology). By introducing a systems perspective to paradox, we extend the literature's current scope to paradoxes rooted in complex systems. Our approaches of 'zooming out' and 'zooming in' uncover latent tensions and render them salient for empirical interpretation. Capturing the full complexity of a system is a starting point for addressing the underlying issues. We encourage researchers interested in wicked problems to apply and further extend paradox theory in their quest to provide solutions for the world's most pressing problems.

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