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MICROFOUNDATIONS OF ORGANIZATIONAL PARADOX: THE PROBLEM IS

HOW WE THINK ABOUT THE PROBLEM

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Competing tensions and demands pervade our work lives. Accumulating research examines organizational and leadership approaches to leveraging these tensions. But what about individuals within firms? Although early paradox theory built upon micro-level insights from psychology and philosophy to understand the nature and management of varied competing demands, corresponding empirical studies are rare, offering scarce insights into why some individuals thrive with tensions while others struggle. In response, we contribute to the microfoundations of organizational paradox with a theoretical model and robust measures that help unpack individuals' varied approaches to tensions. Following rigorous scale development in Study 1, including samples from the US, UK, Israel, and China, we test our model in a large firm in the US using quantitative and qualitative methods. We identify resource scarcity (i.e. limited time and funding) as a source of tensions. We also demonstrate that a paradox mindset – the extent to which one is accepting of and energized by tensions – can help individuals leverage them to improve in-role job performance and innovation. Our results highlight paradox mindset as a key to unlocking the potential of everyday tensions.

Keywords: paradox, mindset, contradiction, resources, time pressure, performance, innovation

> *Paradox has to be accepted, coped with and made sense of, in life, work, and in the community and among nations*. (Handy, 1994: 11-12)

Our organizational lives are awash in tensions. We work within a web of conflicting and persistent demands, interests and perspectives (Smith & Lewis, 2011). Engineers, for example, strive to address existing demands while enabling tomorrow's innovations. Doctors and nurses grapple with expectations to deliver care that is high-quality and low-cost. Artists feel torn between passionately expressing their ideas and securing profits. In general, employees experience pressure to emphasize individual and collective accomplishments (Keller, Loewenstein, & Yan, 2016; Smith & Berg, 1986), achieve performance and learning goals (Dobrow, Smith, & Posner, 2011), and demonstrate creativity and efficiency (Miron-Spektor, Gino, & Argote, 2011).

Tensions intensify under conditions of resource scarcity. Our increasingly fast-paced, global, and complex word intensifies the stress of limited temporal, human and financial resources and provokes ever-greater and more varied competing demands (Smith & Lewis, 2011). In a recent study, the Executive Board, a corporate research firm, noted an increased emphasis on limited resources as well as growing tensions across employees over the last five years (www.cebglobal.com/blogs). Similarly, a joint study by Oxford professors and the executive search firm Heidrick & Struggles (2015) reported that persistent competing demands now comprise the greatest challenges for executives today.

The rapidly expanding field of organizational paradox offers insights into the nature and management of these tensions (see Putnam, Fairhurst, & Banghart, 2016; Schad, Lewis, Raisch, & Smith, 2016). Research views such tensions as a double-edged sword, potentially sparking innovation and peak performance, but also spurring anxiety that can raise stress and counterproductive defenses (Lewis, 2000; Smith & Berg, 1986). Yet, to paraphrase Watzlawick

and his colleagues: *The problem is not the problem; the problem is the way we think about the problem* (Watzlawick, Weakland & Fisch, 1974).

Some people see tensions as dilemmas that require tradeoffs. For these individuals, attempts at resolution offer temporary reprieve, but the underlying tension is likely to remain and resurface again. In contrast, others accept and even embrace tensions as natural and persistent. They appreciate the interwoven nature of such competing demands. To them, tensions appear as opportunities, albeit challenging ones, that boost learning and agility. Employees who think in this way may develop comfort in their discomfort and learn to manage paradoxes.

Early paradox theorists, leveraging philosophy and psychology, proposed that the impact of tensions depends on an individual's approach (Bartunek, 1988; Schneider, 1999; Smith & Berg, 1986). They contended that individuals who view tensions as paradoxes rather than either/or dilemmas gain a deeper understanding of opposing elements and seek more integrative solutions. Accumulating empirical studies, however, have focused on investigating the nature of and responses to these tensions at the organizational level (Andriopoulos & Lewis, 2009; Lüscher & Lewis, 2008) and among senior leadership (Smith, 2014; Zhang, Waldman, Han, & Li, 2015). Although this work offers valued insights at the macro-level, we know little about individual variations among employees within the organization (Schad, et al., 2016). What conditions intensify the experience of tensions? What is the impact of tensions on one's workplace efforts, such as job performance? How do individuals' approaches affect their ability to cope with, or even benefit from, these tensions?

In response, we explore how individuals experience and respond to tensions, providing insight into the microfoundations of organizational paradox. Specifically, we identify resource scarcity (e.g., limited time and financial resources) as an external condition that intensifies an

individual's experience of tensions. Prior research emphasized the importance of recognizing

tensions for improving performance, innovation, and leadership (Hahn, Pinkse, Preuss, & Figge,

2014; Ingram, Lewis, Barton, & Gartner, 2014; Lewis, 2000; Lüscher & Lewis, 2008; Smith,

2014). Yet experiencing these tensions can also lead to frustration and defensiveness that can

have negative consequences on these same outcomes (Lewis, 2000; Vince & Broussince, 1996).

To address these mixed findings, we distinguish between experiencing tensions and one's

mindset in addressing these tensions. We posit paradox mindset as a key to unlocking the

positive potential of tensions.

A mindset is a framework or lens that helps to interpret experiences (Dweck, 2006) and

organize complex reality (Gupta & Govindarajan, 2002). Drawing on paradox theory (Smith &

Lewis, 2011; Rothenberg, 1979; Bartunek, 1988), we suggest that individuals who have a

paradox mindset tend to value, accept and feel comfortable with tensions. These individuals see

tensions as opportunities, confront them, and search for both/and strategies (Lewis, 2000). We

develop a theoretical model that identifies conditions that exacerbate the experience of tensions

(e.g., *resource scarcity*), and examines the role of paradox mindset in mitigating the effect of

these tensions on in-role job performance and innovation. Following rigorous scale development,

using samples across the US, the UK, Israel and China, we test our model in a large firm in the

US. Our research extends paradox theory, providing timely insights into individual variations in

experiences, and offers corresponding measures for future studies.

MICROFOUNDATIONS OF ORGANIZATIONAL PARADOX:
A THEORETICAL MODEL

Paradox theory deepens understandings of the varied nature, dynamics and outcomes of

organizational tensions. Tensions denote competing elements, such as contradictory demands,

goals, interests, and perspectives. Organizations host a wide variety of these tensions including

performing, learning and belonging tensions (Smith & Lewis, 2011). Even as scholars may

empirically explore a specific type of tension, as a meta-theory, paradox scholars often

generalize approaches across a broad range of tensions (Lewis & Smith, 2014). We follow this

more general approach, theorizing and exploring whether organizational actors lever a paradox

mindset to cope with a host of pervasive tensions.

To examine the microfoundations of organizational paradox, we build from early studies

of philosophy and psychology as well as more recent organizational research. Scholars from

Laozi to Kierkegaard to Jung have theorized the double-edged sword of tensions (Lewis, 2000).

On the positive side, tensions can fuel virtuous cycles that unleash creativity and enable

resilience and long-term sustainability. For example, Rothenberg (1979) found that geniuses

such as Mozart, Einstein, and Picasso harnessed tensions to spark their groundbreaking insights.

Similarly, Eisenhardt and Westcott (1988) noted how Toyota senior leaders juxtaposed

competing demands in order to provoke learning and inspire novel ideas (see also Osono,

Shimizu, Takeuchi, & Dorton, 2008). Yet studies also demonstrate how tensions can spur vicious

downward spirals. The experience of these tensions can threaten our sense of certainty and order,

challenge our egos, and provoke defensive responses that paralyze action or foster intractable

conflicts (Smith & Berg, 1986; Vince & Broussine, 1996).

To address this debate in the literature, we provide a theoretical model that identifies

when individuals experience tensions and how their approach to these tensions impacts job

performance. We suggest that situational factors, such as resource scarcity, juxtapose

contradictory demands, goals or perspectives and intensify individuals' recognition and

experience of tensions (Sharma & Good, 2013). We then introduce the construct of *paradox*

mindset as an approach to addressing tensions. Drawing from extant literature on organizational

paradox, we argue that whether individuals strive or struggle amidst these tensions depends on

the extent to which they have a paradox mindset. We develop these relationships further to

propose and then test a series of hypotheses.

Resource Scarcity and Job Performance

In most contemporary organizations, employees are encouraged to innovate – developing

and implementing novel approaches and creative ideas (Amabile, Conti, Coon, Lazency, &

Herron, 1996; Scott & Bruce, 1994; Van de Ven, 1986), and need to perform – meeting their

prescribed job demands and succeeding in their role (Janssen, 2001; Miron, Erez, & Naveh,

2004; Zhang & Bartol, 2010). Researchers have noted that these two aspects of job performance,

namely innovation and in-role job performance, can be contradictory (Bledow, Frese, Anderson,

Erez, & Farr, 2009). In-role job performance requires exploitation of existing knowledge and

skills to meet prescribed work role expectations. In contrast, innovation requires exploration of

new domains and development and realization of new solutions for organizational change

(Janssen, 2001). Research indicates that engagement in creative processes could, at some level,

have detrimental effects on in-role job performance (Zhang & Bartol, 2010), and that focusing on

routine work can impede innovation (Andriopoulos & Lewis, 2009).

Effectively achieving both in-role job performance and innovation depends on access to

resources. Resources can include both internal resources, such as employees' psychological

support, social advancement, intelligence, self-esteem, skills and motivation (Amabile et al.,

1996; Baer, 2012; Madjar et al., 2011), as well as external resources, such as time and financial

resources (Amabile, et al., 1996; Scott & Bruce, 1994). These external resources become

increasingly scarce when workloads and pressures expand to meet tight deadlines while reducing

costs. It is therefore important to understand what enables employees to be both innovative and effective when facing such limited resources.

Prior research on how time pressure and limited funding affect in-role job performance has yielded equivocal findings. Some studies find that when individuals experience resource deficiency they exert less effort and focus on retaining resources rather than performing their job (Levontin, Ein-Gar, & Lee, 2013). For example, research on auditing suggests that time pressure hinders performance and increases errors (Mcdaniel, 1990). In contrast, others note that time pressure can be activating and increase performance. For example, Janssen (2001) found that when perceived as fair, moderate levels of time pressure are associated with the highest levels of employee in-role job performance. Similarly, Andrews and Farris (1972) found that increased time pressure improved the performance of NASA scientists and engineers.

As with in-role job performance, the relationship between resource scarcity and innovation also surfaces inconsistent outcomes. Some studies demonstrate a negative relationship between limited resources and innovation (e.g., Madjar et al., 2011), while others document nonlinear (Baer & Oldham, 2006; Nohria & Gulati, 1996), not significant (Amabile et al., 1996; Scott & Bruce, 1994) and even positive relationships (Mehta & Zhu, 2015). For example, research suggests that limited time and funding can kill creativity, the initial phase in the innovation process. Creativity requires time to identify and define the problem, explore various new solutions, incubate, integrate unique and useful solutions, evaluate the ideas and develop reliable products and processes (Amabile et al., 1996, Madjar et al., 2011). Time pressure constrains cognitive processes, increases preference for low-risk solutions, and reduces the epistemic motivation that is critical for creativity (Bechtoldt, De Dreu, Nijstad & Chou, 2010). Experiencing time pressure reduces the chances that employees will invest the extra time

needed to deeply understand a problem, examine multiple alternative solutions (Amabile, et al., 2002) and implement a radical idea (Madjar et al., 2011).

Innovation requires financial resources for investing in the development of solutions that diverge from an existing trajectory (Nohria & Gulati, 1996; Scott & Bruce, 1994). When lacking slack resources, employees have been found less likely to engage in creativity and implement novel approaches (Baer, 2012; Madjar et al., 2011). Yet other studies suggest that resource scarcity can have positive consequences. At moderated levels, time pressure and scarce resources can inspire increased task engagement and innovation (Baer & Oldham, 2006; Janssen, 2001; Nohria & Gulati, 1996; Ohly, Sonnentag, & Pluntke, 2006). Scarce resources can help overcome functional fixedness (Mehta & Zhu, 2015) and fuel innovative efforts (Bledow, et al., 2009).

These findings demonstrate varied impacts of scarce resources on in-role job performance and innovation, raising questions about the mechanisms leading to these diverse outcomes. Drawing on paradox theory (Smith & Lewis, 2011), we offer an alternative explanation. Specifically, we propose that resource scarcity increases the likelihood that employees experience tensions. In turn, whether experiencing tensions improves or impedes innovation and in-role job performance depends on one's paradox mindset. This model reconciles the prior inconsistencies in the literature.

Resource Scarcity and Tensions

Resource scarcity spurs tension recognition (Smith & Lewis, 2011). When facing limited time and financial resources, employees must compare and contrast goals. Allocating resources towards achieving one goal reduces available resources for other goals (Kanfer & Ackerman, 1989). As a result, competing demands surface around multiple goals that otherwise may not necessarily trigger tensions, such as the tension between teaching and researching. With little

slack for mistakes and learning (Nohria & Gulati, 1996; Voss et al., 2008), employees feel torn, straining to address multiple demands to their full potential. In contrast, slack resources allow employees to explore alternatives even if they do not lead to tangible results in the short term (Bledow et al., 2009). Furthermore, limited time constrains one's ability to focus on each demand, accentuates the juggling among multiple demands (Kahneman, 1973) and sparks work-related tensions (Emsley, 2003). An abundance of time, on the other hand, allows employees to shift between goals, addressing each goal to its full potential (Sun & Frese, 2013).

Limited resources can also increase awareness of existing tensions (Smith & Lewis, 2011). For example, when facing the dual demands to learn new skills while maintaining high performance, employees with slack resources can allocate time for learning without inhibiting their performance and thus are less likely to be aware of the tension. Yet under time pressure they must engage both demands simultaneously, and are more likely to recognize the demands as an instance of tension (Smith, 2014). Building from these insights, we posit that individuals with scarce resources experience and recognize tensions more than their 'wealthier' counterparts.

Hypothesis 1: Resource scarcity (i.e., limited time and funding) is positively associated with individuals' experience of tensions.

Tensions and Job Outcomes: The Role of Paradox Mindset

Paradox mindset can leverage experienced tensions to achieve beneficial outcomes. A paradox mindset shapes the way we make sense of tensions (Bartunek, 1988; Lüscher & Lewis, 2008; Weick, 1995; Westenholz, 1993). As Wendt explained: "The wisdom extracted from organizational paradoxes can change how we think more than what we think" (1998: 361). Experiencing tensions can be threatening and lead to dysfunctional responses if individuals approach tensions as dilemmas, consistently seeking to mitigate their anxiety by resolving the

conflict and the discomfort these tensions elicit. To avoid this discomfort, individuals choose

between alternative options and then strive to maintain consistent commitment to that choice

(Festinger, 1962). However, such singular commitment to one option serves as a temporary,

defensive reaction, intensifying a tug-of-war between interdependent yet opposing demands

(Sundaramurthy & Lewis, 2003). Returning to the previous example, employees face ongoing

pressures to both perform – achieving set outcomes – and learn – developing new work skills

(Smith & Lewis, 2011). Pursuing learning goals can reduce efficiency and undermine short-term

performance (Bunderson & Sutcliffe, 2003). Emphasizing short-term performance goals,

however, contributes to quick successes, but cannot be sustained in the long run without

significant learning (Seijts & Latham, 2005).

Paradox mindset offers an alternative approach (Smith & Tushman, 2005). By adopting a

paradox mindset, individuals "shift their expectations from rationality and linearity to accept

paradoxes as persistent and unsolvable puzzles" (Smith & Lewis, 2011: 385). Individuals who

embrace tensions have a greater propensity to proactively confront them and become

comfortable with the disquiet they provoke (Rothenberg, 1979; Smith & Berg, 1986). Instead of

being threatened by tensions, they search for effective new ways to continuously manage them.

For instance, individuals with a paradox mindset may synthesize learning and performing goals

and flexibly maneuver between them (Miron-Spektor & Beenen, 2015).

Consider another example. Employees receive directions from their supervisors that may

seem contradictory and interdependent (e.g., "Strive to excel and be the best performer on your

team. Also, collaborate with your teammates and help them excel in their jobs"). If the

employees have a paradox mindset, they may approach these competing demands as

opportunities to succeed in their jobs. Accepting the tension enables them to acknowledge the

complex interplay between self-needs and other-needs, between competition and cooperation (Keller et al., 2016), to recognize how these two demands can enable one another, and to feel comfortable with the situation (Huy, 1999). Instead of avoiding or trying to eliminate the tension, they acknowledge potential benefits in engaging both demands. For example, they may find that giving to others can enhance their own success, and gain new skills and social resources that enable them to better support others (Grant, 2013). In contrast, an individual lacking a paradox mindset will tend to choose between cooperation and competition, or moderately engage both.

Related research about employee in-role job performance and innovation supports our hypothesis. Effectively coping with tensions requires both/and efforts and continuous, double-loop learning, as individuals reframe oppositions to *both* accentuate their vibrant differences *and* leverage their synergistic potential (Andriopoulos & Lewis, 2009; Bartunek, 1988). According to Schneider (1999: 208), successful people have the "capacity to confront constructive and expansive polarities, transform them, and use them productively" to increase performance and well-being. Rather than resisting or avoiding tensions, they accept, even value, such "as persistent and unsolvable puzzles" (Smith & Lewis, 2011: 385). This acceptance enables them to immerse themselves in tensions, question existing assumptions, and explore more effective responses (Lüscher & Lewis, 2008). Further, attempts to eliminate tensions can be emotionally depleting (Vince & Broussine, 1996). However, when these tensions are accepted and valued, individuals can gain energy from them and increase their overall available resources for performing their specified jobs (Kanfer & Ackerman, 1989). Similarly, research in psychology identifies the personal tendency to embrace contradictions as an important coping mechanism with life challenges (Lomranz & Benyamini, 2016).

Further, acceptance of tensions enables awareness of capabilities to fully capture ambiguous and complex configurations of reality, and can thus contribute to innovation. Instead of searching for consistency, individuals with a paradox mindset learn to live with tensions and pursue, scrutinize, and confront conflict to stimulate new understandings (Poole & Van de Ven, 1989). Doing so involves searching more broadly for possible solutions, rather than settling on suboptimal strategies. In this sense, a paradox mindset increases cognitive flexibility, or "the ease with which individuals are able to broaden the scope of their attentional span to attend to divergent perspectives but also to engage in a balanced consideration of those perspectives" (Rothman & Melwani, 2016: 13). A paradox mindset also contributes to complex thinking, or the capacity to differentiate and integrate opposing elements (Tetlock, Peterson, & Berry, 1993). Such complex thinking enables individuals to both set distinctions between elements and identify new linkages between elements that enable greater innovation (Smith & Tushman, 2005).

Based on this analysis, we suggest that when employees experience tensions those with a paradox mindset are more likely to approach tensions as opportunities, gaining energy as they search more broadly for integrative solutions, and thereby enabling superior in-role job performance and innovation. In contrast, those lacking a paradox mindset become preoccupied with trying to eliminate tensions, leaving fewer available resources for performing their jobs.

> *Hypothesis 2. Paradox mindset moderates the relationship between experiencing tensions and in-role job performance and innovation. When paradox mindset is high, experiencing tensions enhances in-role job performance and innovation, whereas when paradox mindset is low, experiencing tensions hinders these outcomes.*

We further suggest that a paradox mindset moderates the indirect relationship between resource scarcity and in-role-job performance and between resource scarcity and innovation. Drawing on our rationale for Hypotheses 1 and 2, we predict that for individuals with a high paradox mindset, resource scarcity will elicit tensions that in turn enhance performance outcomes. In contrast, for those with a low paradox mindset, more limited resources and the experience of tensions will hinder in-role job performance and innovation.

> *Hypothesis 3. Paradox mindset moderates the indirect effect of resource scarcity on in-role job performance and innovation through experiencing tensions. When paradox mindset is high (low), experiencing tensions mediates the positive (negative) relationship between resource scarcity and these outcomes.*

To examine our constructs and test our hypotheses empirically, we conducted two studies. In Study 1, we engaged in a scale development process for our experiencing tensions and paradox mindset constructs. In Study 2, we tested our theoretical model.

STUDY 1

Item Generation, Exploratory Factor Analysis and Item Reduction

Given the lack of validated measures that represented the concepts of experiencing tensions and paradox mindset, we engaged in a systematic scale development process that encompassed eight samples in four countries (the US, the UK, Israel and China). A summary of our eight-sample study is displayed in Table 1. In order to assess experiencing tensions and paradox mindset, we generated items deductively (Hinkin, 1995) from reviewing paradox theory

(Lewis, 2000; Smith & Lewis, 2011; Smith, 2014) as well as related scales (e.g., Choi, Koo, & Choi, 2007; Kruglanski, Webster, & Klem, 1993; Spencer-Rodgers, Srivastava, & Peng, 2001).

Insert Table 1 about here

Although existing constructs and scales share similar themes, none of them directly assess the experience of tensions and the propensity for having a paradox mindset. For example, concepts associated with ambiguity (Lorsch & Morse, 1974), consistency (Cialdini, Trost, & Newsom, 1995) and closure (Kruglanski, et al., 1993) are insufficient to explain how individuals experience and respond to tensions, because individuals may feel comfortable with ambiguous demands but uncomfortable with contradictory demands. Integrative complexity, which refers to a greater capacity and willingness to differentiate and integrate different perspectives (Tetlock et al., 1993), is also related to having a paradox mindset. However, individuals may cognitively differentiate and integrate different perspectives but feel uncomfortable when the perspectives appear to be contradictory. Finally, research on naïve dialecticism, building on insights from Eastern philosophy, addresses individual attitudes towards contradictions (Choi et al., 2007; Spencer-Rodgers, Williams, & Peng, 2010), but not whether individuals accept and feel comfortable with contradictions. Similarly, the attitude towards contradictions subdimension of holism focuses on tactics for managing tensions, such as compromising and seeking middle-ground (Choi et al, 2007), rather than confronting and embracing tensions.

Our deductive development approach helped us ensure content validity, as we created items that reflected our construct definitions (Nishii, 2012). We developed 29 items, and then checked content validity using a panel of experts. Similar to validated scales of related constructs, we developed items that can be applied at work as well as in other contexts (e.g., Cialdini et al., 1995; Spencer-Rodgers et al., 2010; Webster & Kruglanski, 1994). Our panel of

experts included four leading scholars familiar with methods of scale development as well as

paradox theory. This expert panel critiqued the instrument to ensure content validity, identify

unclear wording, and question double-barreled descriptions, as well as the factor structure and

comprehensiveness of the scales (Rubio, Berg-Weger, Tebb, Lee, & Rauch 2003). Inter-rater

agreement (*IRA* = .84), content validity index (*CVI* = .92) and the factorial validity index (*FVI* =

.93) among the four experts (Rubio et al., 2003) were all in acceptable ranges for the items.

Because of cross-cultural differences in approaches to paradox (Choi et al., 2007; Keller

et al., 2016; Spencer-Rodgers et al., 2010), we further developed the scale to ensure

generalizability across cultures. We refined our initial scales and confirmed our factor structure

with employees in an Israeli manufacturing plant in the high-tech industry (Table 1, Sample 1).

Prior to the administering of our questionnaire in Israel, three coders who were not informed

about the purposes of the study utilized a translating and back-translating process to translate the

items from English into Hebrew (Brislin, 1970). Exploratory and confirmatory factor analyses

allowed us to omit items that did not load significantly on any factor or that loaded highly on

more than one factor, leaving 16 items. The resulting two-factor solution represented 1)

experiencing tensions (7 items), and 2) paradox mindset (9 items) (see Appendix A for the scale

items). Together the two factors explained 54% of the variance. Confirmatory factor analysis of

the 16 items demonstrated that the two-factor structure exhibited good fit (x^2 [70] = 103.71, *TLI*

= .95, *CFI* = .97, *RMSEA* =.06) and had good reliability (experiencing tensions α = .89, paradox

mindset α = .87). The factor loading values were all above the recommended threshold of .49.

We tested the factor structure using participants from a university in China (Table 1,

Sample 2). To do so, we translated the items into Chinese using a rotating back-translating

process performed by three coders not informed about the purposes of the study (Brislin, 1970).

As with the Israeli sample, confirmatory factor analysis revealed the same two-factor structure (x^2 [92] = 116.25, *TLI* = .96, *CFI* = .97, *RMSEA* = .05) and the two dimensions demonstrated good reliability (experiencing tensions α = .91, paradox mindset α = .90). Confirmatory factor analyses in all samples confirmed these two distinct factors with good model fits and good factor loadings for the final items.

Scale Validation

We tested for discriminate and convergent validity of our scales on three samples of employees in the UK (Table 1, Sample 3), in China (Table 1, Sample 4) and in the US (Table 1, Sample 5) that represent various occupations (e.g., managers, nurses, programmers, social workers, and teachers). We used data from Prolific Academic in the UK, Amazon Mechanical Turk (MTurk) in the US, and Sojump in China, which adhere to psychometric standards associated with extant published research (Buhrmester, Kwang, & Gosling, 2011). To examine the validity of the experiencing tensions and paradox mindset scales, we included scales of other related constructs. We considered constructs more frequently associated with Western thinking, including tolerance for ambiguity (Lorsch & Morse, 1974), need for closure (Webster & Kruglanski, 1994), integrative complexity (Tetlock et al., 1993), and preference for consistency (Cialdini et al., 1995). We also considered constructs more often associated with Eastern thinking, including tolerance of contradictions (Spencer-Rodgers et al., 2001), attitude toward contradictions (Choi et al., 2007), and a self-rated version of the paradoxical leadership scale developed among Chinese participants (Zhang et al., 2015). In addition, we examined correlations with openness to experience from the Big 5 (Saucier, 1994). To further test for the distinctiveness of experiencing tensions and paradox mindset from these related constructs, we conducted CFAs involving our scales with the related ones and performed paired Chi-square

difference tests. In every such comparison, results indicated that the model fit was best when three separate factors emerged. Table 2 includes definitions of these constructs and discriminate and convergent validity tests.

Insert Table 2 about here

We further tested for criterion validity with two samples and constructs. Drawing on related research on tensions and job satisfaction (Rizzo, House, & Lirtzman, 1970), we expected employees experiencing greater tensions to be less satisfied with their jobs. Acceptance of contradictions, in contrast, has been found to increase well-being and life satisfaction (Lomranz & Benyamini, 2016). Thus, we expected employees with a high paradox mindset to report higher job satisfaction. Eighty employees in a large automobile services company in the US (Table 1, Sample 6) completed our instruments and reported their job satisfaction using three items adapted from Zhou and George (2001) (e.g., "All in all, I am satisfied with my job," $\alpha = .91$). Regression with job satisfaction as the dependent variable revealed that experiencing tensions reduced job satisfaction ($b = -.29$, *s.e.* $= .09$, $p < .01$). In contrast, employees with a higher paradox mindset were more satisfied with their job ($b = .33$, *s.e.* $=.13$, $p < .05$). Finally, prior research suggested that paradoxical thinking contributes to creativity (Miron-Spektor, et al., 2011; Rothenberg, 1979). To test for this possibility we collected data from 155 students in Israel (Table 1, Sample 7) who completed our instruments and then performed a common creativity task (Remote Association Test, Mednick, 1962). Results of regression analysis indicated that while experiencing tensions was not related to creativity ($b = .11$, *s.e.* $= .20$, *ns*), individuals with a higher paradox mindset were more creative ($b = .54$, *s.e.* $= .25$, $p < .05$).

Finally, to examine whether our items can be used to study different types of tensions, we tested whether an underlying higher-order construct accounts for our items and items measuring

specific types of tensions (Judge, Erez, Bono, & Thoresen, 2002). We developed items for performing, learning, and belonging tensions based on our qualitative analysis of examples of tensions that participants in Sample 3 described (Table 1, Samples 3), and the typology of Smith and Lewis (2011). Specifically, we generated nine items for measuring performing (α =.69), learning (α =.72), and belonging tensions (α =.75) (See Appendix A for items). Participants in Sample 8 completed our experiencing tensions scale (1 = "strongly disagree" to 7 = "strongly agree") and indicated the extent to which they experience performing, learning, and belonging tensions (1 = "never" to 5 = "always"). Confirmatory factor analyses revealed that a four-factor model with the experiencing tensions, performing, belonging, and learning tensions scales as separate factors significantly fit the data better than a single factor model (x^2 [90]= 102.36, *TLI* = .96, *CFI* = .97, *RMSEA* = .05), two-factor and three-factor models. As expected, these distinct factors also load on a second-order factor (x^2 [90] = 118.277, *TLI* = .94, *CFI* = .96, *RMSEA* = .05), indicating that they can be accounted for by the higher-order underlying construct (Judge et al., 2002). Together these findings demonstrate discriminate, convergent and criterion validity of our instruments, and the generalizability of our items to different types of tensions.

Discussion

In this initial study, we developed and validated scales for assessing experiencing tensions and paradox mindset. Using eight samples from the US, UK, Israel and China and from employees in various occupations, we confirmed the factor structure and reliability of our scales, and validated discriminate, convergent and criterion validity. Our analysis of different types of tensions revealed that people vary in whether they accept and feel comfortable with tensions.

Our scale validation processes revealed that paradox mindset is positively yet moderately correlated with tolerance for ambiguity, integrative complexity, tolerance for contradictions and

openness to experiences. Paradox mindset is also negatively correlated with need for closure. In

line with previous research (Lewis, 2000; Lomranz & Benyamini, 2016; Rothenberg, 1979),

individuals with a higher paradox mindset are more creative and satisfied with their jobs. This

scale contributes to continued scholarship on the microfoundations of paradox. By offering

scholars a tool for assessing paradox mindset, our scale enables future research to continue to

unpack the value and impact of such an approach.

STUDY 2

Sample and Procedure

We tested our model in a large consumer products company with products in departments

including electronic, industrial, pharmaceutical, medical, and fabric ($N = 135$, *Female* = 18%,

Mean age = 43.5, *SD age* = 7.68, *Mean tenure* = 13 years). Product specialists – employees

responsible for integrating technology and marketing – completed the research questionnaire in a

designated meeting with the research team. They reported the extent to which they experience

scarce resources, tensions and their paradox mindset. Using opened-ended questions, they also

gave specific examples of tensions that they experience at work. For ninety-one of the product

specialists, their direct supervisors evaluated their in-role job performance and innovation.

Measures

Unless otherwise indicated, all measures used a scale anchored at 1 ("strongly disagree")

and 7 ("strongly agree").

Resource scarcity. We measured resource scarcity using six items adapted from existing

measures ($\alpha = .79$, Amabile et al., 1996; Scott & Bruce, 1994). Specifically, three items

measured time pressure (e.g., "I feel a sense of time pressure in my work."), and three items

measured limited finances (e.g., "Usually, I can get the funding I need for my work." reversed coded, $\alpha = .82$). The second-order factor model showed better fit than the first-order model (χ^2 [8] = 15.497, *TLI* = .94, *CFI* = .98, *RMSEA* = .08). Thus, we averaged scores across the two dimensions to form a resource scarcity score.

Experiencing tensions and paradox mindset. Participants completed the 7-item scale for experiencing tensions ($\alpha = .88$) and the 9-item scale for paradox mindset ($\alpha = .80$). Confirmatory factor analysis revealed that a two-factor model, with experiencing tensions and paradox mindset as separate factors, fits the data better than a single-factor model (χ^2[83] = 116.29, *TLI* = .94, *CFI* = .96, *RMSEA* = .06.).

In-role job performance and innovation. Product specialists' supervisors evaluated their in-role job performance using four items from Janssen & Van Yperen's (2004) ($\alpha = .89$), including items such as "Meets all the performance requirements of the job." They evaluated their innovation, using four items developed by Janssen (2000) ($\alpha = .87$), with items such as "Transforming innovative ideas into useful applications." Confirmatory factor analysis revealed a two-factor model with separate factors for in-role job performance and innovation fits the data better than a single-factor model (χ^2 [12] = 30.054, *TLI* = .92, *CFI* = .96, *RMSEA* = .07).

Control variables. We controlled for factors that have been shown to affect in-role job performance and innovation (Miron et al., 2004; Zhang & Bartol, 2010). Specifically, we controlled for years of experience in the current position, age, gender and education (1 = Did not complete high school, 2 = High school/GED, 3 = Some college, 4 = Bachelor's degree, 5 = Master's degree, 6 = Advanced graduate work or PhD). None of these control variables affected innovation and in-role job performance or changed the relationship between our interest

variables and these outcomes. Thus, for brevity we report the analyses without these control variables.

To examine whether our model can be generalized across different types of tensions, we controlled for the type of tensions employees in our sample experienced. We asked product specialists: "*Please discuss several specific instances where you have experienced tensions in your job. Specifically, what tensions did you experience and what was the situation?*" Qualitative analysis by two authors revealed that participants described learning and performing tensions only (see Appendix B for examples). Thus, for each participant, two independent judges evaluated whether his or her described tensions reflected tensions of learning and/or performing (Kappa for learning = .79, Kappa for performing = .67; Viera & Garrett, 2005). We created two dummy variables for each type of described tension (1 = "learning", 0 = "other" and 1 = "performing", 0 = "other") and included these variables in our analyses.

Results and Discussion

We tested our hypotheses in different models, with in-role performance and innovation as the dependent variables. First, we tested the effect of resource scarcity on experiencing tensions (Hypotheses 1), and the interaction between experiencing tensions and paradox mindset on these outcomes (Hypotheses 2). Second, we used the PROCESS macro in SPSS for testing our moderated mediation hypotheses (Hypothesis 3) using model 14 (Hayes, 2013). We also tested alternative models and conducted robustness checks analyses.

Table 3 summarizes the descriptive statistics and correlations for our variables. We tested our hypotheses using regression models, while controlling for the type of experienced tension (whether learning and/or performing tensions). Supporting Hypothesis 1, individuals with scarce resources experienced higher levels of tensions (see Table 4). Supporting Hypothesis 2, paradox

mindset moderated the relationship between experiencing tensions and in-role performance. We interpreted the form of the interaction that appears in Figure 1a, using the method recommended by Aiken and West (1991), by plotting the simple slopes for the relationship between experiencing tensions and in-role job performance at the mean and at one standard deviation above and below the mean of paradox mindset. The results indicate that for employees with low paradox mindset, facing greater tensions was not associated with lower in-role job performance ($b = -.19$, *Boot s.e.* $= .12$, $p = .09$). However, for those with high paradox mindset, simple slopes indicated that experiencing tensions was positively associated with higher in-role job performance ($b = .29$, *Boot s.e.* $= .15$, $p = 05$). Probing the confidence region of the interaction with the Johnson-Neyman technique showed that experiencing tensions hindered in-role job performance at the critical paradox mindset value of 4.29 and below (8th percentile), and enhanced it at the critical value of 6.02 and above (82nd percentile).

We repeated these analyses with innovation as the dependent variable. The results, which are plotted in Figure 1b, indicate that for employees with low paradox mindset ($b = -.23$, *Boot s.e.* $= .13$, $p = .07$), experiencing greater tensions was not associated with lower innovation. Yet, for those with high paradox mindset, simple slopes indicated that experiencing tensions was positively associated with innovation ($b = .36$, *Boot s.e.* $= .17$, $p < .05$). Probing the confidence region of the interaction with the Johnson-Neyman technique showed that experiencing tensions hindered innovation at the critical paradox mindset value of 4.36 and below (9th percentile), and enhanced it at the critical value of 5.9 and above (80th percentile).

Insert Tables 3 and 4 and Figure 1 about here

We examined a full moderated mediation model using Model 14 in PROCESS (Hayes, 2013) to test Hypotheses 3, in which paradox mindset moderates the indirect effects of resource scarcity via tensions on in-role job performance. We used bootstrap procedures to construct bias-corrected confidence intervals based on 10,000 random samples with replacement from the full sample (Shrout & Bolger, 2002). In support of Hypothesis 3, we found that experiencing tensions mediated the indirect effect of resource scarcity on in-role job performance when paradox mindset was high ($b = .11$ *Boot s.e.* $= .08$ [.008, .384]) and when it was low ($b = -.07$, *Boot s.e.* $=.04$ [-.183, -.005]). Experiencing tensions mediated the indirect effect of resource scarcity on innovation when paradox mindset was high ($b = .13$, *Boot s.e.* $= .08$ [.022, .384]) but not when it was low ($b = -.08$, *Boot s.e.* $= .06$ [-.233, .010]). These results support our model, indicating that resource scarcity increases the experience of tensions, and that paradox mindset moderates the effect of experiencing tensions on in-role job performance and innovation. For employees with low paradox mindset, experiencing tensions from scarce resources hindered in-role job performance, whereas for those with high paradox mindset, experiencing tensions enhanced in-role job performance and innovation.

To examine the robustness of our empirical results, we first tested for possible alternative models. Prior research suggests that, under some conditions, resource scarcity can have an inverted U-shape relationship with innovation and in-role job performance (Janssen, 2001). To test for this possibility, we regressed innovation and in-role job performance on scarce resources and squared scarce resources while controlling for the type of tensions. We found no significant effects of squared scarce resources on experiencing tensions, innovation or in-role job performance. We also tested our model without controlling for the type of experienced tensions and found similar results.

Because of the study's cross-sectional nature, it is also plausible that the dependent variables examined in our models (in-role job performance and innovation) affected resource scarcity, creating a feedback loop. Potentially, high-performing and innovative employees have access to more resources and thus experience less tensions. We examined alternative models in which in-role job performance or innovation is the independent variable, experiencing tensions is the dependent variable, and resource scarcity is the mediator. Using Model 4 with PROCESS, we found no direct [-.152, .366] or indirect [-.212, .003] effects of in-role job performance on experiencing tensions through scarcity. A similar analysis with innovation as the independent variable revealed no direct effect [-.115, .333], yet there was a significant indirect effect of innovation on experiencing tensions through scarce resources [-.212, -.005]. This finding indicates that by innovating, individuals may increase their resources and thus experience lower levels of tensions. However, paradox mindset did not moderate the links between innovation and scarce resources and between scarce resources and experiencing tensions.

The findings of Study 2 support our moderated-mediation model, and indicate that the effect of scarce resources and experiencing tensions on performance outcomes depends on one's mindset. When approaching tensions as paradoxes, individuals can leverage resource scarcity to improve in-role job performance and innovation.

GENERAL DISCUSSION

Why do some individuals leverage tensions and competing demands to their benefit, while others do not? We found that when employees' mindsets encouraged them to value, accept and feel comfortable with contradictions, their experience of tensions contributed positively to their in-role job performance and innovation. However, experiencing tensions was detrimental for individuals with a low paradox mindset. We also found that scarce resources intensified and

surfaced tensions, and thus affected these performance outcomes indirectly. Taken together, our

studies help build the foundation for micro-level paradox research by theorizing constructs,

developing and validating scales, and testing key relationships.

Theoretical Contributions

Our primary contribution lies in theorizing and demonstrating paradox mindset as an

important mechanism through which employees can cope and even thrive with everyday

tensions. In our definition of paradox mindset, we extend prior research that mainly emphasizes

sensemaking and cognitive processes (Lüscher & Lewis., 2008; Smith & Tushman, 2005).

Integrating research on affective reactions to tensions (Bartunek, 1988; Vince & Broussine,

1996), our theory considers the extent to which individuals feel comfortable with and energized

by tensions. Integrating emotional aspects into our paradox mindset measure enabled us to detect

both positive and negative consequences of tensions for employees' performance and innovation.

Our research takes a step towards resolving a critical controversy about the effect of

paradoxes on two distinct performance outcomes. Prior studies emphasize the benefits of

tensions but also noted their challenges (Schad et al., 2016). In the face of such tensions, a

paradox mindset can fuel innovation and learning and promote the achievement of multiple

conflicting demands (Smith & Tushman, 2005). Recently, Zhang and colleagues (2015)

demonstrated how a leader's paradoxical behaviors can beneficially impact subordinates. Yet

others discuss the dysfunctional impact of tensions, as they can elicit paralyzing anxiety (Lewis,

2000; Vince & Broussine, 1996). We reconcile these seemingly incongruent findings by first

distinguishing between experiencing tensions and having a paradox mindset. We then examine

the joint impact of these constructs on distinct yet related job outcomes. Interestingly, we find

that merely experiencing tensions does not affect in-role job performance or innovation.

Depending on one's mindset, tensions can either enhance or hinder these outcomes. Moreover, our studies demonstrated the value of a paradox mindset across varied types of tensions, suggesting the generalizability of this approach. By introducing the concept of paradox mindset, and showing how this mindset modifies the effect of tensions, we gain finer-grained insights into the way individuals experience and cope with tensions.

Our research also helps reconcile mixed findings on the effect of resource scarcity. Both with innovation and performance as outcomes, prior findings are inconsistent, with some studies showing negative effects while others null or positive effects at moderate levels of scarcity (Baer & Oldham, 2006; Janssen, 2001; Nohria & Gulati, 1996). We integrate these findings with research on paradox (Smith & Lewis, 2011) to provide a new explanation for this relationship. Working under time pressure and limited funding conditions increased the likelihood of experiencing tensions, yet paradox mindset modified the indirect relationship between resource scarcity and the two job outcomes through tensions. As such, our findings extend work on resource scarcity, innovation and performance (Amabile, et al., 2002; Janssen, 2001; Scott & Bruce, 1994; Voss et al., 2008).

Limitations and Future Directions

Future research may improve on and extend the findings of the present study. First, although we examined alternative models and collected data from two sources, use of longitudinal or experimental design and additional data sources would provide more direct evidence of casualty and reduce the possibility of common method bias (Podsakoff, MacKenzie, & Podsakoff, 2012). Second, we based our in-role job performance and innovation measures on supervisors' evaluations, and we cannot claim to have controlled in our analyses for all related variables that can explain these outcomes. Future research might support the present findings

using multiple performance and innovation measures, including objective measures, and by considering other related constructs. Third, we tested our model with product specialists and identified limited time and finances as major sources of learning and performing tensions. Future research in other contexts can explore other types of tensions (e.g., organizing, and identity tensions, see Gotsi, Andriopoulos, Lewis & Ingram, 2010; Smith & Lewis, 2011) and reveal additional factors that trigger tension. Global work roles, for instance, are laden with tensions between stakeholder demands, and global and local mindsets (Waldman & Bowen, 2016). Finally, we developed and validated our instruments in four different cultures, and in two organizations, but tested our model with American participants of an international company. Given cultural differences in the way individuals approach paradoxes (Chen, 2002; Keller et al., 2016), future research should test the generalizability of our model across cultures.

We also encourage future research that examines more nuanced relationships between a paradox mindset and potentially supportive cognitive, behavioral and organizational factors. Such studies would not only enrich understandings of how a paradox mindset impacts in-role job performance and innovation, but also test other claims that a paradox mindset fosters ambidexterity and learning (Smith & Tushman, 2005), design thinking (Gaim & Wahlin, 2016), resilience and well-being (Lomranz & Benyamini, 2016). For instance, of rising interest is the effect of individual differences in the subjective experience of conflict. The way individuals react to task and interpersonal conflicts can affect their creativity (Paletz, Miron-Spektor, & Lin, 2014), satisfaction (Todorova, Bear, & Weingart, 2014), decision making (Savary et al., 2015) and overall performance (Jehn, Rispens, & Thatcher, 2010). Our insights and measures can apply to these and other streams of research that focus on different reactions to conflicts and tensions in organizational and team contexts. Considering individual variance in paradox mindset can also

help differentiate between positive and negative consequences of experiencing and expressing

ambivalence (Ashforth, Rogers, Pratt, & Pradies, 2014; Rothman & Melwani, 2016).

Finally, we hope this work motivates research that investigates factors that might

influence one's paradox mindset. For example, research on culture suggests that the Western and

East Asian approaches to paradox are distinct. Western approaches stress opposition and

conflicts, while Eastern approaches stress a 'middle way' that seeks harmony among opposing

views (Chen, 2002; Spencer-Rodgers et al., 2010). Endorsing these different approaches suggests

that East Asians are more likely to hold a paradox mindset than their Western counterparts

(Keller et al., 2016). From our research, this could imply that East Asians are thereby more likely

to be innovative and perform better when facing tensions. Yet other factors may mitigate this

cultural tendency. Coupled with a strong cultural emphasis on honoring hierarchy, efforts to

maintain harmony and avoid conflicts (Paletz et al., 2014) may lead to weak compromises or

abdicating to the more powerful person.

Another interesting question is whether individuals can develop a paradox mindset and

learn to apply it with experience and through training. Related research suggests that a paradox

mindset may have a neurological basis (Hannah, Balthazard, Waldman, Jennings, & Thatcher

2013), and can increase with age and challenging life experiences, as individuals learn to live

with tensions and see their long-term benefits (Lomranz & Benyamini, 2016). Intervention

studies that have used paradoxical inquiry methods suggest that managers can learn to change

their experience of and approaches to tensions (Lüscher & Lewis, 2008). Similarly, experimental

studies suggest that induced paradox mindsets (i.e., paradoxical frames) improve individual

creativity and ability to address competing task demands (Miron-Spektor et al., 2011).

Longitudinal studies could explore individual and contextual factors that may nurture or impede development of a paradox mindset.

Practical Implications

As our world becomes more complex, fast-paced and diverse, employees increasingly confront tensions. Leaders and employees alike seek strategies for addressing these tensions to unlock greater potential and to reduce frustration and demise. Our study offers insights into these strategies. First, we highlight the role of a paradox mindset in addressing tensions, emphasizing that recognizing tensions is not enough; effectively engaging tensions depends on a mindset that enables acceptance and comfort. As such, our construct highlights both the cognitive and the emotional elements of paradox mindset. As research suggests, managing conflict is not just a mental exercise, but depends on managing emotions as well.

Our paradox mindset scale offers leaders and practitioners opportunities for assessing their own approaches to tensions. While we do not address the potential for learning and developing a paradox mindset in our studies, other research suggests that experiences, coaching, and reframing aid development of alternative mindsets (Lüscher & Lewis, 2008; Miron-Spektor et al., 2011). Assessment and awareness provides a first step towards understanding the nature of a paradox mindset and its impact on job outcomes.

Conclusion

If contradictions and competing demands pervade the workplace, then effective employees must learn to gain comfort in their discomfort and effectively engage tensions. Our research fosters movement in that direction, contributing to the microfoundations of organizational paradox. We hope this work fuels additional investigations to uncover individual variations and approaches to tensions.

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TABLE 1

Characteristics of Samples Used for Scale Development and Validation, Study 1

Sample	Size	Participants country	% Female	Age (SD)	% Manager	Purpose	Related constructs measured
Sample 1	127	Employees Israel	20%	51 (7.68)	1.6%	Exploratory and confirmatory factor analysis	
Sample 2	106	Students China	53%	24 (3.99)	-	Confirmatory factor analysis	
Sample 3	158	Employees UK	50%	39 (10.36)	50%	Confirmatory factor analysis, discriminate and convergent validation	Need for closure, Tolerance of ambiguity, Integrative complexity, Need for consistency
Sample 4	300	Employees China	50%	32 (5.90)	-	Confirmatory factor analysis, discriminate and convergent validation	Dialectical self , Analytic-holistic, Paradoxical leadership
Sample 5	300	Employees US	41%	34 (11.38)	42%	Discriminate and convergent validation	Openness to experiences
Sample 6	80	Employees US	41%	48.29 (8.20)	-	Criterion validation	Job satisfaction
Sample 7	155	Students Israel	44%	24.7 (2.67)	-	Criterion validation	Creativity
Sample 8	97	Employees UK	44%	36.92 (10.39)	43%	Generalizability across different types of tensions	Performing, learning and belonging tensions

TABLE 2
Distinctive Validity, Related Constructs, Study 1

Related Construct	Definition	# items	# Sample	CFA Model comparisons for discriminate validation A= One factor B= Two factors C= Three factors					α	r with ET[a]	r with PM[a]
				χ2	DOF	TLI	CFI	RMSEA			
Experiencing Tensions (ET)	Experiencing competing elements (e.g., demands, goals, interests and perspectives).	7	1	14.031	8	.95	.99	.07	.90		
			2	10.148	8	.99	.99	.05	.97		
			3	8.896	8	.99	.99	.03	.87		
			4	20.36	8	.99	.99	.06	.89		
			5	19.66	8	.96	.99	.07	.92		
			6	25.26	8	.96	.98	.09	.87		
			7	11.84	8	.95	.99	.07	.87		
Paradox Mindset (PM)	A tendency to value, accept and feel comfortable with tensions.	9	1	23.96	20	.98	.99	.04	.87	.41**	
			2	29.283	20	.96	.98	.07	.89	.43**	
			3	18.72	20	.99	.99	.01	.88	.34**	
			4	21.27	20	.98	.99	.02	.87	.46**	
			5	43.67	20	.96	.98	.06	.83	.31**	
			6	41.45	20	.95	.97	.07	.91	.19	
			7	30.535	20	.93	.96	.07	.82	.36**	
Tolerance for Ambiguity (Lorsch and Morse, 1974)	A tendency to perceive ambiguous materials or situations as threatening.	7	3	(A) 944.84	210	.38	.48	.15	.74	.15	.38**
				(B) 459.28	208	.78	.82	.09			
				(C) 319.31	206	.90	.92	.06			
Preference for Consistency (Cialdini et al. 1995)	Dispositional preference for or against consistent responding.	18	3	(A) 1448.83	477	.62	.68	.11	.92	-.00	-.05
				(B) 957.89	475	.81	.84	.08			
				(C) 701.79	473	.91	.92	.05			

Related Construct	Definition	# items	# Sample	CFA Model Comparisons for discriminate validation A= One factor B= Two factors C= Three factors					α	r with ET[a]	r with PM[a]
				$\chi2$	DOF	TLI	CFI	RMSEA			
Integrative Complexity (Tetlock, 1990, Zhang et al., 2015)	Capacity and willingness to tolerate different points of view and generate linkages between points of view.	11	3	(A) 843.12 (B) 576.68 (C) 371.84	290 289 287	.64 .81 .94	.7 .84 .95	.11 .08 .04	.87	.15	.42**
Tolerance of Contradictions (Spencer-Rodgers et al., 2001).	Lay beliefs that the truth is always in the middle.	13	4	(A) 1106.29 (B) 611.42 (C) 462.82	221 220 217	.68 .86 .91	.76 .90 .94	.11 .07 .06	.77	.43**	.56**
Attitude towards Contradiction (Choi et a., 2007).	A tendency to pursue a compromised middle ground.	24	4	(A) 1783.18 (B) 1447.38. (C) 1288.63	677 676 672	.80 .87 .89	.84 .89 .92	.08 .07 .06	.59	.23**	.21**
Openness to Experiences (Saucier, 1994)	Intellectual curiosity, appreciation of unusual ideas, art, adventure and variety of experience.	6	5	(A) 806.28 (B) 348.26 (C) 343.26	205 203 201	.70 .92 .93	.78 .94 .95	.12 .07 .06	.83	.14*	.35**
Paradoxical Leadership (Zhang et al., 2014).	Seemingly competing yet interrelated behaviors to simultaneously and over time meet structural and follower demands.	22	4	(A) 1600.32 (B) 1298.54 (C) 905.55	595 594 591	.80 .86 .94	.82 .88 .95	.08 .06 .04	.93	.13*	.46**

[a] Correlation of the construct with experiencing tensions (ET) and with paradox mindset (PM); *p < .05 **p < .01

TABLE 3

Means, Standard Deviations, and Bivariate Correlations for the Research Variables, Study 2

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
1. Resource scarcity	4.27	0.86										
2. Experiencing tensions	4.93	1.08	.19*									
3. Paradox mindset	5.28	0.73	-.24**	.26**								
4. In-role job performance	5.95	0.91	-.19†	.02	.31**							
5. Innovation	5.08	1.04	-.24*	.03	.33**	.45**						
6. Age	43.48	7.68	.05	.13	.05	-.13	.03					
7. Gender[a]	0.18	0.38	.02	.02	.12	.24*	.00	-.19*				
8. Experience in position	5.11	4.95	-.21*	.12	.09	-.15	-.08	.41**	.00			
9. Education[b]	4.87	0.87	-.05	.03	.02	.08	-.03	-.29**	.31**	-.10		
10. Learning tensions	0.24	0.43	-.03	.04	.25**	.08	.06	.01	.10	.09	-.04	
11. Performing tensions	0.21	0.41	-.09	.10	.06	-.04	-.05	.03	.05	.19*	.01	-.04

n=135 $^†p = .10$ *$p < .05$ **$p < .01$
[a] Gender: 0 =male, 1 = female
[b] Education: 1 = Did not complete high school, 2 = High school/GED, 3 = Some college, 4 = Bachelor's degree, 5 = Master's degree, 6 = Advanced graduate work or PhD;

TABLE 4
Regression Results Testing Model

	Experiencing Tensions	In-role job Performance	In-role job Performance	Innovation	Innovation
	Est. (SE)	Est. (SE)	Est. (SE)	Est. (SE)	Est. (SE)
Predictor					
Resource scarcity	.25 (.11)*	-.13 (.13)	-.09 (.12)	-.21 (.15)	-.17 (.14)
Experiencing tensions (ET)		-.02 (.10)	.05 (.10)	-.02 (.12)	.06 (.11)
Paradox mindset (PM)		.36* (.15)	.33* (.15)	.47**(.18)	.43** (.16)
ET * PM			.32** (.11)		.39**(.13)
Control					
Learning tensions	.09 (.21)	-.04 (.24)	-.08 (.23)	-.18 (.27)	-.23 (.25)
Performing tensions	.28 (.23)	-.11 (.24)	-.04 (.23)	-.15 (.27)	-.08 (.26)
R^2	.05	.12	.19	15	.23
ΔR^2			.07*		.08*
F	2.09†	2.07†	3.11**	2.84*	3.97 **

n=135   †$p < .10$ *$p < .05$ **$p < .01$

FIGURE 1

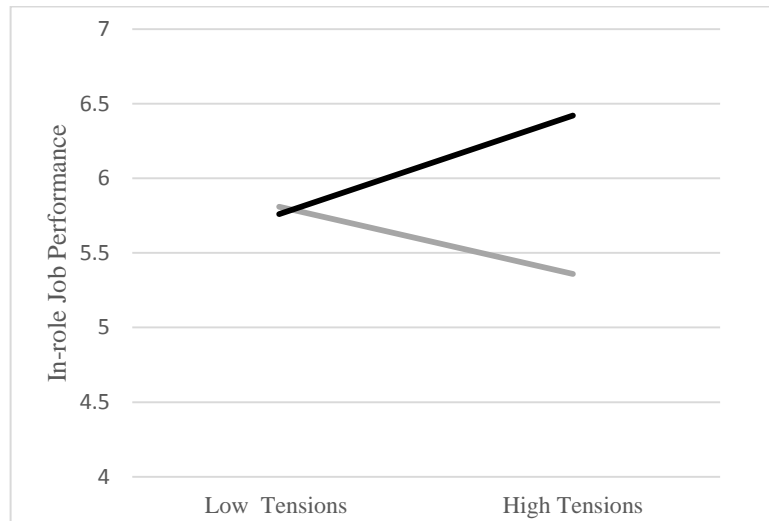**Effect of Experiencing Tensions and Paradox Mindset on Performance Outcomes**

Figure 1a. Effect of experiencing tensions and paradox mindset on in-role job performance
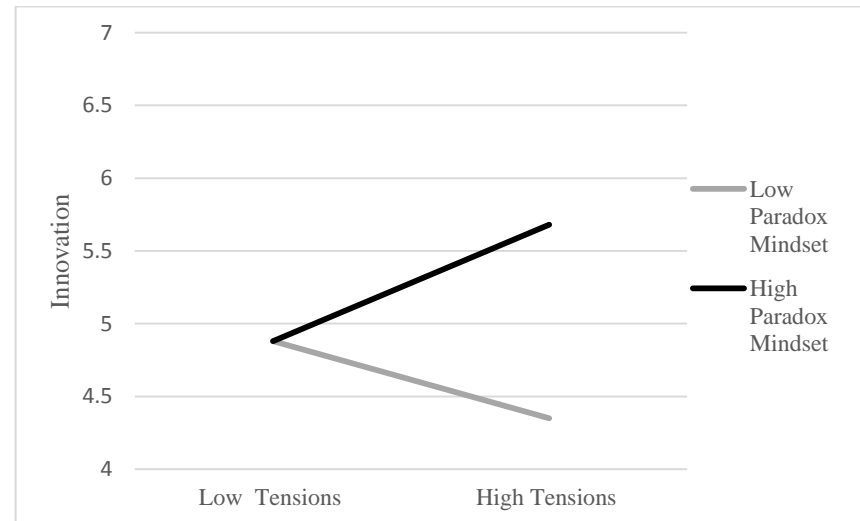
Figure 1b. Effect of experiencing tensions and paradox mindset on innovation

APPENDIX A

Experiencing Tensions, Paradox Mindset and Types of Tensions Scales

Think about your regular experience at work when you answer these questions.

Experiencing tensions
1. I often have competing demands that need to be addressed at the same time.
2. I sometimes hold two ideas in mind that seem contradictory when appearing together.
3. I often have goals that contradict each other.
4. I often have to meet contradictory requirements.
5. Usually when I examine a problem, the possible solutions seem contradictory.
6. I often need to decide between opposing alternatives.
7. My work is filled with tensions and contradictions

Paradox Mindset
1. When I consider conflicting perspectives, I gain a better understanding of an issue.
2. I am comfortable dealing with conflicting demands at the same time.
3. Accepting contradictions is essential for my success.
4. Tension between ideas energize me.
5. I enjoy it when I manage to pursue contradictory goals.
6. I often experience myself as simultaneously embracing conflicting demands.
7. I am comfortable working on tasks that contradict each other.
8. I feel uplifted when I realize that two opposites can be true.
9. I feel energized when I manage to address contradictory issues.

Types of tensions
In my work, I need to…
Performing tensions
1. … be flexible while also complying with the company's tight rules.
2. … generate new solutions to problems while avoiding mistakes.
3. … be original while also conforming to existing norms.
Learning tensions
1. … gain new skills while relying on my existing skills.
2. … develop new capabilities but also demonstrate my existing capabilities to others.
3. … learn and explore new opportunities while exploiting existing solutions.
Belonging tensions
1. … focus on my own needs while addressing the needs of others.
2. … complete my own tasks while helping my colleagues complete their tasks.
3. … compete and cooperate with others.

APPENDIX B
Types of Tensions Experienced by Employees, Study 2

Category	Specific types of tensions	Examples tensions described by employees
Learning tensions Tensions surfacing across time between building upon and destroying the past to create the future.	***Explore vs. exploit*** Developing new products and ideas vs. expanding existing products and ideas. ***Long term vs. short term*** Emphasizing efforts that impact the future or the present.	• Managing the demands of a large established mature business as well as being a [new] product leader can often lead to conflicting demands especially on resource. • Our business unit wanted to focus on key project but also has to continually review a stream of incoming ideas. It was felt that we must evaluate each of these new opportunities, because there could be "big idea" that might be even better than the ones we are actively working on. • Resourcing new projects. How to balance investing in smaller, higher probability of success vs. higher reward but riskier ventures given that many of the same people would work on them. • Improve product profitability, and invest in product development as well as other necessary technical work. The investments have a negative short to mid-term effect on product profitability, however not investing could result in loss of business.
Performing tensions Tensions between contradictory needs, interests, demands, outcome and requirements.	***Strategic needs vs. regulatory needs*** (legal, advocacy, etc.) Achieving organizational needs for revenue, while engaging government regulation, NGO activism, etc. ***Company needs vs. customer needs*** Addressing specialized customer needs while enabling more generalized products.	• When supporting a new product often the product is in process with numerous regulatory agency and being commercially released in other markets. Regulatory submissions are time sensitive with short deadlines for the responses to the agencies questions. At the same time hospitals, physicians, nurses, technicians and patients have urgent needs regarding the clinical application of the product. • In an NGO campaign you want to achieve two conflicting goals: 1) Keep the company out of the focus of attention and campaign 2) Convince key stakeholders that the company acts responsibly on the topic at hand. To reach the attention of media, customers or consumers one has to create some attention which - at the same time - will increase the risk of becoming the target of the campaign. • New Product Development team is tasked with creating a technology roadmap, ideally in partnership with marketing. However, marketing associate express that you cannot begin to create such a roadmap without first doing industry segment research to identify macro trends, i.e. product team thinking technology push, marketing thinking user need pull. • Building a world class product that delivers high margin, high unit sales, and high revenue can many times conflict. The accepted tradeoff generally falls to a high value solution that delivers strong margin dollars, but low unit sales based on price sensitivities.

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