

# Resilience in Virtual Teams: Developing the Capacity to Bounce Back

**William Y. Degbey**

University of Turku, Turku School of Economics, Department of Marketing and International Business, 20014, Turku, Finland. E-mail: william.degbey@utu.fi;  
william.degbey@gmail.com

**Katja Einola**

Hanken School of Economics, Finland; and Lund University, Sweden. E-mail:  
katja.einola@hanken.fi; katja.einola@gmail.com

## Abstract

Resilience, or the capacity to bounce back from adversity strengthened and more resourceful, can be considered an important quality of virtual teams in the contemporary working world. A team is the basic organizational unit many modern firms are composed of—and, the virtual ones are those conducting teamwork over distance using a combination of telecommunications and information technologies to accomplish an organizational task. Yet, we know little about how these teams with members who rarely meet in person can build resilience. We develop further the notion of resilience from the traditional focus on significant adversity to also include mundane yet crucial events that can become key for building resilience in virtual teams. Our study focuses on team dynamics and builds on an experimental research setting using a longitudinal, qualitative and interpretative research design to examine five anatomically similar, well-performing virtually working teams over their life cycle. Our findings show that team members in two out of the five teams engaged in specific reflection and action mechanisms—self-reflective practices, regulation of emotional expression and engagement in concrete actions promoting team inclusion—that in turn helped these teams become more robust and prepared to face new adversities. Implications for practice and research are discussed.

**Keywords:** team resilience, virtual teams, sensemaking, conservation of resources, longitudinal study, experiment

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

## INTRODUCTION

Team-based work structures have increasingly become prevalent (e.g. Kozlowski & Bell, 2003; West, Patera & Carsten, 2009), and are progressively embedded in organizational structures as a key ingredient to organizational success (e.g. Martin & Bal, 2015). Contemporary teamwork is often project-based, asynchronous and conducted in a geographically and/or organizationally dispersed environment using a combination of telecommunications and information technologies to accomplish an organizational task (Gibbs & Boyraz, 2015; Jarvenpaa & Leidner, 1998; Maznevski & Chudoba, 2000; Townsend, DeMarie & Hendrickson, 1998; Webster & Wong, 2008). Moreover, many firms function today as matrixes or constellations of amorphous temporary teams (Burke & Morley, 2016), where people work in multiple teams simultaneously with competing demands to balance priorities (O’Leary, Mortensen & Wolley, 2011), and where traditional teams with people working on well-defined tasks side-by-side are no longer the norm. These current trends create a complex, confusing, ambiguous, and fluid work environment where teams will inevitably encounter adversities (King, Newman & Luthans, 2016). Team adversities may take shape in many forms, from chronic stressors (e.g. pressure to meet teamwork deadlines, collective fatigue and role overload) to acute shocks (e.g. technology failure during a virtual team meeting and an intense argument among team members) (Stoverinks, Kirkman, Mistry & Rosen, 2018). These adverse events excessively exert negative impact on team performance by breaking down key team processes (Sims & Salas,

2

Rights statement: This is the author’s version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

2007), leading to performance setbacks (Rauter, Weiss & Hoegl, 2018), and eventually causing high team failure rates (Ferrazzi, 2014; Gupta, Govindarajan & Wang, 2008).

A growing body of research on team resilience has started to highlight the phenomenon in which teams flourish in spite of adversity (Alliger, Cerasoli, Tannenbaum, & Vessey, 2015; Bennett, Aden, Broome, Mitchell & Rigdon, 2010; Hartmann, Weiss, Newman & Hoegl, 2019; King et al., 2016; Meneghel, Martinez & Salanova, 2016a; Stoverink et al., 2018). However, we still lack an understanding of *how* to build team resilience in virtual teams. Reading cues and building relations over digital means of communication is more challenging than in traditional face-to-face teams (e.g. Liao, 2017; Zigurs, 2003). For example, managing conflict and emotions can be particularly challenging in virtual teams (e.g. Jehn & Mannix, 2001; Ayoko, Konrad & Boyle, 2012). Therefore, understanding how team resilience is built in the virtual context can help the team withstand and overcome stressors, particularly when team members employ critical team level resources (Hobfoll, 1989, 2011; Stoverink et al., 2018) to make sense of adverse situations/events (Weick, 1993, 1995) and engage in concrete actions.

The current lack of understanding on how a virtual team can become resilient is partly due to the nascent stage of the construct of team resilience and the lack of consensus on its conceptualization (Kennedy, Landon & Maynard, 2016; Kreutzer, Cannon-Bowers & Lamb, 2017; Morgan, Fletcher & Sarkar, 2017), the little empirical evidence on team level resilience (Furniss et al., 2011; Meneghel et al., 2016a), the limited research into the processes that underlie or help *build* resilience in teams

(Carmeli, Friedman & Tishler, 2013; Sarkar & Fletcher, 2014), and above all, the limited focus of extant resilience research on *mundane yet crucial events* compared with the current dominant focus on significant adversities<sup>1</sup> (Kuntz, Näswall & Malinen, 2016).

For example, Alliger et al. (2015, p. 177) observe that “teams in all business sectors face challenges; while these are rarely catastrophic, they are often serious enough to impair performance and cohesion. Many teams can make it through an initial challenge or two, but only resilient teams can sustain performance and morale over time.” Therefore, team resilience, or the degree to which team members together are able to be robust and bounce back from set-backs, disagreements, negative emotions and other stressful situations leading to interpersonal conflict (Coutu, 2002; Fredrickson, 2001) may help teams perform better from both team task and social outcome perspectives—both needed for teams to be successful in the long run. In addition, scholars highlight that the popularity of the word “resilience” in common speech contributes to the conceptual confusion (e.g. Bonanno, Romero & Klein, 2015; Britt et al., 2016; Fogarty & Perera, 2016), and review of the broad literature on resilience by Meredith et al. (2011) found 104 definitions of the construct. According to Meredith et al. (2011) the definitions differed on the basis of whether they emphasized (a) basic abilities possessed by the individual (e.g. Masten & Narayan 2012; Windwood et al., 2013), (b) the ability to adapt to adverse events (e.g. Bonanno,

---

<sup>1</sup> By significant adversity, we refer to what Kuntz, Näswall and Malinen, 2016 describe as ‘adaptive resilience’ (e.g. major, unexpected, stressful, stretching and extreme events) rather than ‘mundane yet crucial events’ (see Alliger et al., 2015 for examples of common team challenges that require resilience)

Rights statement: This is the author’s version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

2004; Tedeschi & Kilmer, 2005), and (c) the presence of documentation demonstrating positive changes following adversity (e.g. Maguen et al., 2006; Matos et al., 2010). Building on this review and to partly resolve the definitional controversies, Britt et al. (2016) provided a useful distinction of the construct—*capacity* for resilience and the *demonstration* of resilience. In their commentary, Fogarty and Perera (2016, p. 425) noted that this distinction is important “in the sense that it should be possible to possess the capacity for resilience without necessarily being able to demonstrate it in all circumstances”.

Whilst the above studies provide a clearer characterization of resilience and suggest how resilience can be facilitated, their main recommendations are geared toward individuals and organizations (cf. Carmeli et al., 2013) and their responsiveness to *significant* adverse events. We argue that basing our understanding of resilience solely on the responsiveness to significant adversity limits the scope of the construct. Consistent with our argument, Kuntz et al. (2016) distinguish between *inherent resilience* that describes the development of resilience capability in situations of ‘business as usual’ and *adaptive resilience* that refers to effective responsiveness to instances of significant adversity (p. 458). They further emphasize that conceptualizing resilience “solely under the lens of positive response to significant adversity may bind us to a post-traumatic growth perspective (i.e. positive adaptation *contingent* on crisis exposure) and detract from the consideration of resilience as a capability that can be developed and enacted in both stable and crisis environments (Kuntz et al., 2016, p. 457).” Other scholars observe that resilience can be vital for almost any business team

Rights statement: This is the author’s version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

to maintain effectiveness and well-being, and identify some common team challenges that require resilience (Alliger et al., 2015). Therefore, it is equally important to be robust and bounce back from a myriad of factors, such as time pressure, ambiguity around tasks, roles and unclear team processes, competing priorities, interpersonal conflicts, inadequate work output by one or more team members, changing circumstances and other everyday dilemmas modern teams typically face that may trigger imbalances and threaten to push the team off track at any time (cf. Alliger et al., 2015; Einola & Alvesson, 2019). We take inspiration from the work of Kuntz et al.'s (2016) and Alliger et al.'s (2015) to advance a novel perspective particularly on virtual team resilience, as it offers the possibility for proactive resilience development through the focus on non-crisis environment thereby safeguarding both positive adaptation to significant adversity and continuous improvement in more everyday situations.

Against this background, we set out to empirically study *how do virtual teams become resilient?* We address this question through an integrated theoretical perspective of sensemaking (Weick, 1993, 1995), conservation of resources (COR) theory (Hobfoll, 1989, 2011) and team resilience research (Alliger et al., 2015; Hartmann et al., 2019; Meneghel et al., 2016a; Stoverink et al., 2018) to situate our phenomenon. In doing so, we employ a real-time, longitudinal, qualitative and interpretative research design (see Balogun & Johnson, 2005; Langley, 1999) to five anatomically similar teams considered well-performing with reference to their task outcomes, where they perform complex strategic business consultancy type of tasks in an experimental setting. Our focus is on studying how team members' resources and

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

reflective sensemaking, and decisions to act (or not) on subtle cues help build team resilience—and how the lack of resources and sensemaking constrain the development of such capability. Based on our findings, we make three key contributions to the resilience literature and practice. *First*, we identify specific mechanisms by which people in interaction can create team processes enabling or constraining team resilience. Results of our analysis show that over time, while some teams became resilient with sustainably strong results and with satisfied team members willing to keep on working together, others were close to breaking apart. We explain this in part with different coping mechanisms team members developed when reacting to mundane yet crucial events internal to the team, such as how the team dealt with some members lacking competence, being passive or unprepared, or performing below expected quality. The identification of specific resilience-building mechanisms through responsiveness to mundane events underscores the importance of, and answers the recent call for, the investigation of resilience-building factors that are connected to business as usual and that all employees may experience (Kuntz et al., 2016). *Second*, we develop a model that serves as an analytic tool for building resilience in virtual teams, and thus theoretically demonstrate a linkage between mundane events and resilience in virtual teams. In our empirical analysis we found how teams responding differently to mundane and, at first glance, rather insignificant events set them on tremendously diverging paths when it came to resilience building. *Third*, our novel methodological design addresses recent calls for more in-depth qualitative research (Stake, 1995; Stead et al., 2012) and multi-methodological approaches (Tarba et al., 2017) to allow new

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

insights to emerge and unpack complex human experiences.

Overall, our contributions add to an emerging perspective of resilience as a proactive process that develops beyond the traditional responsiveness to significant adversity or rare unexpected major events in a post facto manner (see also Fogarty & Perera, 2016). If managers and team members better understood what mechanisms and team processes facilitate or constrain team resilience, they would be in a better position to take action on the go as the team encounters everyday risky situations. Individual team members' capability and choice to act on mundane events can have a tremendous power in making virtual teams more or less resilient. The remainder of this work is structured into four sections. In the next section, we present a theoretical overview. Thereafter, we detail our methods. Next, we present findings and discussion of the study and, finally provide implications and conclusions.

## **AN OVERVIEW OF THEORY**

### **Team resilience**

There is no common definition about what the concept “resilience” is in the scholarly community. Academic research into resilience spans many contexts and has instigated interest in a variety of fields since its inception in child psychology some 40 years ago (Coutu 2002; Garmezy, 1991). Scholars from the field of psychology define resilience as “the ability to ‘bounce back’ from adversity” (Fredrickson, 2001), while those studying organizational behavior define resilience as the “positive psychological capacity to rebound, to ‘bounce back’ from adversity, uncertainty, conflict, failure, or even positive change, progress and increased responsibility” (Luthans, 2002, p. 702).

8

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220



In the management literature, resilience is defined as “the skill and the capacity to be robust under conditions of enormous stress and change” (Coutu, 2002, p. 52). When studied at the level of organizations, the proactive and dynamic nature of resilience is highlighted. Here, resilience is “the ability to dynamically reinvent business models and strategies as circumstances change, to continuously anticipate and adjust to changes that threaten their core earning power—and to change *before* the need becomes desperately obvious” (Hamel & Valikangas, 2003, p. 1).

The study of team resilience varies considerably depending on the context and disciplinary perspective. West et al. (2009, p. 253) suggest that team resilience serves to provide teams with the capacity to bounce back from failure, setbacks, conflicts, or any other threat a team may experience. Morgan et al. (2017) observe the protective nature of team resilience from the potentially harmful effects of stressors, owing to the fact that team members do not exist in isolation. While we lack a shared definition, there are some commonalities. The theme of *bouncing back* is recurring across the different streams of literature (see, e.g. Masten & Reed, 2002; West et al., 2009), and there tends to be some kind of *positive response* that occurs (e.g. through adaptation, competence, capacity or skill) to overcome an *exposure to adversity*.

Gathering a group of resilient individuals will not necessarily produce a resilient team (Alliger et al., 2015). Emphasizing the importance of team resilience, Bennett et al. (2010, p. 225) state that, “resilience may be viewed as much a social factor existing in teams as an individual trait.” Studies on resilience in community psychology and organizational behavior have also shown a shift away from individuals toward groups

and teams. For example, Brodsky and her colleagues (2011, p. 233) asserted that “a focus on the individual is not enough”, as individual and collective outcomes are intertwined. Therefore, resilience is best enhanced by jointly cultivating it at individual, social and organizational levels, with a great emphasis placed on the role of social support in such endeavors (Caza & Milton, 2012).

Team resilience has been studied mainly in the context of business and health/sports psychology. Morgan et al. (2013) investigated resilient characteristics in the field of sports psychology using focus groups consisting of 31 participants with five elite sports teams. Results of their study show that team resilience is a “dynamic, psychosocial process that protects a group of individuals from the potential negative effect of stressors they collectively encounter. It comprises of processes whereby team members use their individual and collective resources to positively adapt when experiencing adversity” (Morgan et al., 2013, p. 552). This suggests that team members often possess both individual and social resources through collective interactions, as an essential ingredient for demonstrating the capacity to positively adapt in adverse events. Similarly, team resilience has been associated with other psychosocial factors, e.g. caring relationships and effective teamwork developed via trust, cohesion, creativity, collective efficacy, and relational reserves (Blatt, 2009; Gittell, Cameron, Lim & Rivas, 2006; Norris et al., 2008). Based on a sample of 74 top management teams (TMTs), Carmeli et al. (2013) investigated whether and why relational connection between TMT members facilitates a higher level of engagement in strategic decision comprehensiveness and improves team resilience. Their findings indicate that TMTs

Rights statement: This is the author’s version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

who view team relationships as supportive in generating new ideas and seeking out new opportunities tend to be more resilient, in both their resilience–efficacious beliefs and resilience–adaptive capacity (Carmeli et al., 2013). This finding also serves to show that relationships can help cultivate, accumulate, and provide access to resources, including but not limited to emotionally-based ones, e.g., care and concern (Abbey, Abramis & Caplan, 1985), and thus can constitute a suitable basis for team resilience. Relatedly, Stephens et al. (2013) empirically examined how a specific aspect of relationships, i.e. the quality of emotional expression, is linked to resilience in individuals and teams. Their findings show that emotional carrying capacity (ECC)<sup>2</sup> is a relational mechanism that is positively related to team resilience, and thus helps shed more light on how emotional expression in relationships is a key explanatory mechanism for resilience in individuals and teams (see also Carmeli, Yitzhak-Halevy & Weisberg, 2009; Liu, Wang & Lü, 2013).

Further, West et al. (2009) investigated the emergence of team level positive psychological capacities (e.g. team resilience, team efficacy) and their linkage with team outcomes, and their results from 101 teams suggest that team resilience shows increasingly significant explanatory power of team outcomes (e.g. cohesion, cooperation, coordination, conflict and team satisfaction) after several team interactions. This finding further strengthens the assertion that resilience depends remarkably on the presence and quality of interpersonal relationships (e.g. Stephens et

---

<sup>2</sup> ECC is a concept adopted from Dutton and Heaphy (2003) to empirically test the quality of emotional expression. Stephens et al. (2013, p. 30) describe it as the “degree to which individuals can express more absolute emotion, express more positive and negative emotions, and do so constructively”.

Rights statement: This is the author’s version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

al., 2013).

Despite findings of recent multilevel research indicating a lack of theory-driven empirical resilience research (e.g. Hartmann et al., 2019), pioneering studies contributing to the psychological dimension of resilience have started to draw on a range of theoretical approaches to help us understand the development and outcomes of resilience. For example, using the COR theory (Hobfoll, 1989) and social cognitive theory (Bandura, 1986), Cooke, Wang and Bartram (2019) investigated the impact of supportive workplace on employee resilience, and found that supportive leadership and co-worker support positively influence employee resilience in a high-pressure performance environment. In addition, using the job demands-resources theory, Gabriel, Diefendorff and Erickson (2011) and Martinez-Corts, Demerouti, Bakker and Boz (2015) have investigated the role of resilience as a buffer against the negative influence of work demands. Both COR theory (Hobfoll, 1989) and job demands-resources theory (Demerouti, Bakker, Nachreiner & Schaufeli, 2001) emphasize a view of resilience as a resource that individuals draw upon to sustain their psychological wellbeing. Bandura's (1986) work on social cognitive theory suggests that environmental influences, individual behaviors and personal factors operate interactively (i.e. 'triadic reciprocity') to influence individuals' ultimate actions.

Further, pioneering research, such as the study of Meneghel et al. (2016b) employed the broaden-and-build theory (Fredrickson, 2001) to examine the role of team resilience. They found that collective experience of positive emotions, such as shared enthusiasm, optimism, or comfort enhances the individuals' access to relevant team

resources, which in turn facilitates a team's resilience (Meneghel et al., 2016b). The broaden-and-build theory (Fredrickson, 2001, p. 218) posit that "experiences of positive emotions broaden people's momentary thought-action repertoires, which in turn serves to build their enduring personal resources, ranging from physical and intellectual resources to social and psychological resources". These positive resources enable individuals to overcome adversity and foster resilience (Cohn, Fredrickson, Brown, Mikels & Conway, 2009). Furthermore, Tett and Guterman (2000) has employed trait-activation theory to better understand resilience in the workplace. According to the trait-activation theory (i.e. trait-situation relationship), the behavioral expression of a personality trait necessitates arousal of that trait by trait-relevant situational cues. Hence, situational cues, such as team contexts, may affect how resilience as a personal characteristic is associated with outcomes, such as work behaviors and attitudes. In a study using the theory of moral foundations along with its relationships theories of personality and values, Athota, Budhwar and Malik (2019) found a significant relationship regarding the influence of personality traits on resilience.

We build on the growing body of literature on team resilience and extend it to mundane yet crucial events in the context of virtual teams. In doing so, we specifically draw on an integrated theoretical perspective of sensemaking (Weick 1993, 1995) and the COR theory (Hobfoll, 1989) to advance research on team resilience (we discuss these two further in the next section). The theoretical and practical ascension of the concept of resilience in recent years is perhaps not surprising, as unexpected major

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

events and abrupt changes have become rife, coupled with consequential high levels of uncertainty and disruption globally (James, 2011). The events that demand individual, team and organizational resilience range from natural disasters that disrupt and threaten lives, economies and wellbeing (see e.g. Williams & Shepherd, 2016), and terrorisms that shock the public and paralyze financial markets to industrial accidents that bring ecological and economic effects (Linnenluecke, 2017; Tarba et al., 2017), to everyday occurrences, such as coping with a difficult work colleague (Coutu, 2002), or balancing the extremes of work demands with family life (Kossek & Perrigino, 2016).

The very nature of virtual fast-paced project work where people lack cues or do not know each other or each others' circumstances calls for fine-tuned sensitivity to the changing team environment and team inner dynamics, as well as sophisticated situational understanding. As we shall see later, members in a resilient team have the capability to question the most obvious and seemingly plausible explanations to common problems in teamwork like someone not participating fully in conversations or being late with a deliverable. This is because resilient teams engage in sensemaking once they detect adversity and a setback occurs, making seamless efforts to determine what is happening and what needs to be done (Weick, Sutcliffe & Obstfeld, 2005). Indeed, achieving this capacity for resilience necessitates advanced individual and collective sensemaking skills (cf. Thomas, Clark & Gioia, 1993), as well as the critical role of resources (i.e. reservoirs of resilient resources that equip the team to persist or adapt the course of action) (Hobfoll, 1989; Stoverinks et al., 2018).

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

## Sensemaking, Conservation of Resources and Team Resilience

In this study, we integrate sensemaking (Weick, 1993, 1995) and COR (Hobfoll, 1989) theoretical lenses to position our phenomenon on team resilience in virtual teams.

### *Sensemaking*

Weick (1979, 1995) proposed an ontological turn from studying organizations to studying organizing to show that organizations—or in our study, teams—are always in the making, evolving and being renewed carrying in themselves the possibility of change. *Sensemaking* captures reality as an ongoing accomplishment that takes form when people make sense of the situations in which they find themselves. According to Weick (1995), sensemaking is more of a perspective than a unified theoretical framework, which incorporates seven social psychological attributes to understand the process in which people make sense of ambiguous situations. While stressing the interconnectedness of the seven properties of sensemaking<sup>3</sup>, Weick (1995) acknowledges that one or another property may be more dominant depending on the event at hand. Sensemaking is a social process directed at creating order from confusion and chaos (Weick, 1995), and provides a basis to enable a group of individuals that is thrown together to form a team to create and maintain the necessary task and social processes required for the team to function (Einola & Alvesson, 2019).

*Enactment* is one of the seven social psychological properties of sensemaking, and relates to how organizations create the environments that both enable and constrain

---

<sup>3</sup> Weick (1995) originally identified all together seven properties of sensemaking: (i) grounded in identity construction; (ii) retrospective; (iii) enactive of sensible environments; (iv) social; (v) ongoing; (vi) determined by plausibility rather than accuracy and; (vii) focused on and by extracted cues.

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

them (Weick, 1988). Central to the logic that sensemaking is the result of people enacting sensible environments is the notion that there is not some kind of monolithic, singular, fixed environment that exists detached from and external to people (Weick, 1995, p. 31). When organizational members encounter moments of ambiguity or uncertainty, they seek to clarify what is going on by *extracting and interpreting cues* from their environment, using these as the basis for a *plausible* account that provides order to help make sense of what has occurred (Maitlis & Christianson, 2014; Maitlis & Sonenshein, 2010; Weick 1988; 1995). These sensemaking processes in turn not only change the challenges with which an individual, team, or organization contends, but also the lenses and sets of practices through which they grapple with them (Maitlis & Christianson, 2014).

Using the case of Mann Gulch fire disaster of 1949 and insights from his seven social psychological properties of sensemaking, Weick (1993) developed a taxonomy of four sources of organizational resilience (i.e. improvisation and bricolage, virtual role systems, the attitude of wisdom, and respectful interaction). Weick (1993) described the Mann Gulch event as one that exhibited a range of interlocking routines, or “habituated action patterns that bring the same people together around the same activities in the same time and places” (Westley, 1990, p. 339). Hence, Weick’s four organizational resources form a theoretically driven foundation from which to derive analogous team level resources (we will touch briefly on some of these four team level resources under COR theory). In line with our study, prior research builds on, and extends Weick’s (1993) four sources of organizational resilience to team resilience

Rights statement: This is the author’s version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220



Accepted Article

literature using COR theory (e.g. Stoverinks et al., 2018). Stoverinks et al. (2018) argue that these team level resources (i.e. team potency, mental models of teamwork, team capacity to improvise, and team psychological safety) are different from Weick's organizational level ones, due to the heightened interdependency that exists among members of teams and the resulting much tighter interlocking routines relative to members of organizations.

### *Conservation of resources*

Conservation of resources (COR) theory explicates the critical importance of resources in driving human behavior (Hobfoll, 1989). The basic principle of COR theory is that individuals strive to obtain, retain, foster, and protect those things they centrally value (Hobfoll, 2011), and thus describing them to possess "resilient" qualities (Pereira, Temouri & Patel, 2019). This means that resilient individuals employ key "resources in order to conduct the regulation of the self, their operation of social relations, and how they organize, behave, and fit into the greater context of organizations and culture itself" (Hobfoll, 2011, p. 117). A central assumption of the COR theory is that even when stress is not taking place, "people are motivated and directed biologically, socially, cognitively and culturally to shepherd their resources to obtain, retain and protect their resource reservoirs" (Chen, Westman & Hobfoll, 2015, p. 97). Three fundamental principles underlie the COR theory (Hobfoll, 1989; 2001). *The first principle* underscores the primacy of resource loss, describing it to be exceedingly more prominent than resource gain. *The second principle* is resource investment, emphasizing that individuals must invest resources to protect against such resource loss,

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

Accepted Article

and simultaneously recover from losses by gaining such “resilient” resources. A related effect of the second principle is that “those with greater resources are less vulnerable to resource loss and more capable of orchestrating resource gain. Conversely, those with fewer resources are more vulnerable to resource loss and less capable of resource gain” (Hobfoll, 2011, p.117). *Third*, resource gain increases in prominence when resource loss has been high or enduring. Although “COR theory places the greatest weight on resource loss, this principle asserts a key role of resource gain in the resilience process” (Chen et al., 2015, p. 97).

Despite COR theory has almost solely investigated resources at the individual level, recent research has extended it to teams (e.g. Chen et al., 2015; Stoverinks et al., 2018) using the crossover model (Westman, 2001). According to this model, resources crossover from one person to another as individuals do not function in a vacuum, but interact and engage in interpersonal exchanges in social groupings. Scholars suggest that crossover effects take place in resilient teams, because team members regularly interact and observe each other’s resilient actions, cognitions, and affect, which in turn influences one’s own resilient actions, cognitions, and affect (Stoverinks et al., 2018). Moreover, individuals’ repeated interactions and observed behaviors, cognitions, and affect facilitate shared, resilient team resources. Using Weick’s (1993) taxonomy of four sources of organizational resilience, Stoverinks et al. (2018) identified four analogous team level resources: team potency, mental models of teamwork, team capacity to improvise, and team psychological safety (see Stoverinks et al., 2018 for an in-depth discussion on the four team-level resources). For example, team mental model

Accepted Article

of *teamwork* describes team members' knowledge of roles, responsibilities, and interaction patterns and familiarity with one another's knowledge, skills, and preferences (Stoverinks et al., 2018), and analogous to Weick (1993) mental representations of members' respective task roles or virtual role system. This mental representation can contribute to team resilience by improving a team's capacity to coordinate interdependent actions in adverse situations (Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000). According to Weick (1993), this mental representation is crucial in situations of adversity because formal roles can collapse in chaos.

Another example of a team level resource is team psychological safety, which represents a shared belief that a team is safe to take interpersonal risks (Edmondson, 1999), and akin to what Weick (1993) described in his taxonomy as respectful interaction. Weick (1993) highlighted that making sense of adverse situations is central to the notion of respectful interaction. Sensemaking necessitates respectfully voicing thoughts and ideas without retribution and can provide a better understanding of current difficulty while simultaneously generating the path for more response alternatives. Carmeli et al. (2013, p. 149) noted that in a psychologically safe team, when adversity hits, "concerns that may lead members to become defensive and less inclined to discuss major issues openly" are decreased. Stoeverinks et al. (2018, p. 20) added that team psychological safety "creates accurate and shared understanding of a situation by allowing members to socially construct reality through sharing meanings and perspectives, so they crossover and converge at the team level".

In the face of adversity, team members may *express negative emotions*, which narrow their focus (Kelly & Barsade, 2001) and eventually decrease the range of responses they can consider. Due to their team level resource, such as team psychological safety (e.g. team positive emotion), resilient team members can energize one another's confidence by offering encouragement and emotional support, which neutralizes this narrowing of focus (Edmondson, 1999). In light of this, Morgan, Fletcher, and Sarkar (2015) underscore the promotion of positive emotions as an important developmental antecedent of team resilience over time. Further, in line with sensemaking and COR theory, scholars suggest that the capacity for teams to grow more resilient after an adversity requires *reflection* and learning from the adverse situation in order to make changes to team structures and processes (e.g. Alliger et al., 2015). In this regard, *self-reflection* can facilitate the development of team resilience by helping a team member to actively identify and search for alternative causes of adverse situations in the present (e.g. Loughran, 1996; Schön, 1983), as well as helping to read cues and plan for concrete actions in the future and following through (e.g. Killian & Todnem, 1991). A team member's *self-reflection* can generate a crossover effect as a positive team level resource as team members frequently interact and observe each other's resilient actions, cognitions, and affect. In this study we propose that, when it comes to building resilient teams, what matters more than critical and rare events potentially leading to apocalyptic outcomes, is how team members marshal team resources and make sense of rather common and mundane events internal to the team as the team goes about performing its tasks. This is not to say that critical external

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

Accepted Article

events and how a team reacts to these do not matter. What we simply suggest is to direct discussion towards how important mundane events can be and how team members can greatly influence whether their team becomes resilient or not by building capacity to capture and react to these in real-time. Our approach here is consistent with the works of Alliger et al. (2015) and Kuntz et al. (2016) and complementary to the traditional notion of resilience that focuses on exposure to significant adversity. Our perspective to resilience provides the team and its members with more internal resources upon which to draw on when problems arise (see Hobfoll, 1989; Shin, Taylor, & Seo, 2012), and to help prevent and minimize the impact of more significant adversities. For example, Cornum, Mathews and Seligman (2011) noted that the United States Army has enacted a program on resilience that offers training prior to anticipated challenges (e.g. soldiers' deployment) with the aim to not only reduce incidence of disorders among deployed soldiers but also help them conserve more internal resources to draw on to boost their experience of, and performance on the job (Mills, Fleck & Kozikowski, 2013).

## METHODS

Our study is based on a real time, longitudinal approach (see Balogun & Johnson, 2005) following process philosophy, which aims to understand the organizational becoming (Tsoukas & Chia, 2002) or how and why events evolve over time to understand them in depth (Langley, 1999). We use an experimental multi-method qualitative design (cf. Balogun, Huff & Johnson, 2003) in what we call a 'designed reality' type of setting. One initial methodological point of reference is self-ethnography (Alvesson, 2003) as

21

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

an approach to study settings that the researcher is highly familiar with and has direct access to. Here, the researcher does not engage in participant observation like in traditional ethnography, but is more an observing participant who as part of his or her daily activity also studies the setting the focal activity is embedded in (Einola & Alvesson, 2019). In our study, one of the authors was part of the team of instructors of an advanced master's level international course on business strategy that made a real time close-up study of participants possible. The course itself was based on a simulated consulting company context, in which the role of facilitators is kept to a minimum and participants, portrayed as 'teams of consultants', compete for a valued prize by proposing a series of solutions or 'pitches' to complex problems in the context of international business. The other methodological reference we follow is the interpretive sensemaking tradition to case studies (c.f. Stake, 1995; Welch et al., 2010) seeking understanding of human experience rather than generating law-like cause and effect explanations as in the case of positivist epistemology (Einola & Alvesson, 2019).

Over two cohorts (fall 2014 and 2015), we observed 46 virtual project teams with members in four countries form and evolve over time. Teams had an average of five participants (this fluctuated somewhat over time due to attrition). However, the five teams included in this study did not experience any loss of members. The course participants were between the ages of 22 and 45 representing over twenty different nationalities. The task each team was collectively responsible for was to perform consecutive simulated business cases framed as 'pitches' to win consulting assignments on international strategy. These pitches had to be delivered in video format as seven-

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

minute clips (Einola, 2017). The cases were of increasing level of difficulty and they required a varying degree of creativity and research. Delivery lead times were either tight or very tight—between one and two weeks, which induced a significant amount of external stress on the team that was intensified over time. The changes in task type, difficulty level and lead-times came as unexpected external resilience-challenging changes to the teams and often caused turmoil and chaos as members struggled to organize themselves to cope with them. These changes in the environment created a productive platform for both practicing being a virtual team member and studying how the teams coped with all the challenges they faced.

All teams received the same tasks at the moment when the “clock started ticking” to facilitate between-case comparisons. The teams were given minimal instructions and full freedom to organize the team and its activities; the only formal requirement being that the business cases had to be sent out by the deadline in video format the duration of which had to be close to seven minutes. Team performance was assessed in terms of quality of the business cases, or ‘the pitches’ the team produced as jointly assessed by the course facilitators based on set criteria communicated to the teams ahead of time. The teams’ life span was approximately three months. Table 1 below summarizes sources of data used and their purpose in this study.

Table 1: Sources, level, and purpose of empirical data for the study

**[Please insert Table 1 about here]**

For this present study, we chose five teams for which we had rich quality

23

Rights statement: This is the author’s version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

empirical material, and with relatively good task performance and with no overt conflict the facilitators were aware of—the type of teams we expected would be successful and also show high degrees of resilience (see Table 2). The teams are named after key performers and our anchor informants in each team. This does not mean they held a formal leadership role—the teams were free to organize themselves any way they wanted. Some chose a leader, most did not—this decision did not have major detectable impact on resilience building. Instead, the way individuals reacted or not to events was more decisive.

Table 2: Team composition and task outcomes

**[Please insert Table 2 about here]**

This type of approach is not unproblematic. We acknowledge that using student samples has been criticized as lacking generalizability to the employees and organizational phenomena that matter to research (e.g. Gordon, Slade & Schmitt, 1986; Gordon & Wall, 2008). However, student teams are common in research on virtual teams that per se are hard to study. Gibbs, Sivunen & Boyraz (2017) report that 36% of published studies in virtual teams were based on student sample. Bello and colleagues (2009) defend the use of advanced students in research topics such as ours involving “fundamental” processes, structures and outcomes, which are concerned with the basic characteristics of human nature that are relatively independent of context and life experiences. Our social experiment allowed us to create a homogenous task environment and team membership composition for many teams to facilitate

24

Rights statement: This is the author’s version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220



comparisons and focus on team dynamics—conditions that would be impossible to achieve in an organizational setting. We propose that our findings offer what Feldman and Orlikowski (2011) refer to as theoretical generalizations “that can travel” to other contexts.

To analyze our research material we followed, hermeneutical interpretation (c.f. Alvesson & Sköldböck, 2009; Ricoeur, 1976) and engaged in what Locke, Feldman and Golden-Biddle (2015) refer to as live coding. This is considered to be procedurally different from the widely used method of what Locke et al. categorize as inert coding (c.f. Gioia, Corley & Hamilton, 2012) that plays down the importance of the context and easily constitutes what Potter and Wetherell (1987) call *analytic blinders*, preventing the researcher from seeing alternative relationships and dynamic processual developments in the research material as codes are ‘boxed in’ and separated from the phenomenon. In live coding researchers engage in validation and discovery as mutually constituted rather than independent approaches to research so no artificial conceptual walls are built between validation and discovery, data and interpretation (see also Glaser & Strauss, 1967). The activity of live coding aims at validated discovery and is organic in that coding, codes, the coder and data shape each other and are interdependent and inseparable. The process is dynamic and alters the list of codes and their meaning, and seeks to use codes to encompass both orderliness and messiness, definiteness and tentativeness, singularity and multiplicity, independence and interdependence (Einola, 2017; Locke et al., 2015). As an example, let’s take the initial code of ‘freeriding’ some participants frequently mentioned, a common problem in

Rights statement: This is the author’s version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

Accepted Article

teamwork acknowledged by both scholars and practitioners. In a number of teams, lack of active participation by some was interpreted as ‘freeriding’ by those who thought were being more responsible or hardworking. When reading the narratives of the ‘delinquents’, making further inquiries and following a number of indicators over time, however, it become apparent that there were many other possible explanations *in addition to freeriding*: lack of skills, insecurity, mismatched understandings of what was acceptable quality, poor instructions or genuine unawareness by some that their work input was perceived as insufficient by others (Einola & Alvesson 2019).

We used *narrative* and *iterative strategies* suitable for interpretative process studies like ours to theorize from our observations (cf. Langley, 1999). We applied systematic color coding, memoing, and wrote embryonic stories of first individuals and then teams around key events, based on our observations that we constantly developed as our understanding became more refined. Live follow-ups on teams and members and frequent discussions on the emerging findings within the team of instructors, and course participants allowed us to uncover how different, our at first sight similar, teams really were, and set us on a quest to better understand why.

## FINDINGS

We identified that some of our case teams were much less successful at establishing well-functioning team dynamics than others, despite all of them being able to perform their tasks on time to at least an acceptable quality level, and without the teams losing members or formally asking for involvement from instructors to mediate problems.

26

Rights statement: This is the author’s version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

When we observed the five teams more closely, we realized that only two teams of five, the best ones in terms of task output and social outcome comparatively, demonstrated having become resilient, or dynamically capable of adjusting to internal (i.e. a key member being absent, misunderstandings or major problems with technology) and external shocks (i.e. more challenging tasks or tightened deadlines towards the end of the experiment) (see Table 3).

Table 3: Team social outcomes and observed resilience at the end of team life

**[Please insert Table 3 about here]**

### **Mundane events as a trigger for sensemaking and resource investment**

What explained this difference? A more detailed analysis of our empirical data revealed that at the core of the difference were subtle individual and collective sensemaking processes (Weick, 1995) and ways team members responded to mundane, common events, such as *a team member being unprepared, lacking a key skill or appearing passive* (see Table 4 for examples) that had significant consequences on the team level. It seemed that individuals being self-reflective and reacting ‘right’ to these small yet significant events was critical for resilience building in these virtual teams and important for them to succeed, project after project, in a turbulent environment with changing tasks, lead times for delivery and continuous time pressure.

Table 4: Examples of teams processing mundane events

**[Please insert Table 4 about here]**

27

Rights statement: This is the author’s version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

In the case of *Ly's team*, the team was close to collapse towards the end as members externalized negative emotions (frustration and anger) openly or avoided each other altogether. In *Jana's team*, despite good initial intentions, the two remote members were not integrated to the team fully, which caused confusion, overwork for some and underwork for others, and hurt feelings. In *Nea's team*, the two senior members took on too much work that exhausted them over time and helped build hidden negative emotions that led to a dramatic decrease in the quality of the last task in particular. In all these teams the participation of some members was undermined thus the teams were not tapping on their full potential in terms of human resources.

*Aleksei's* and *Peter's teams* in particular were highly resilient – and also most successful when it comes to task performance, especially towards the end where most course participants struggled and started to get tired, which was then reflected on quality. No negative feelings accumulated and all the members realized the importance of everyone being fully included to the best of their ability. These teams were able to keep up with their excellent performance despite the fact that the tasks became more demanding and project delivery times shortened over time (i.e. the last two cases), while ensuring a good social atmosphere and high team cohesion.

### **Underlying resilience-building mechanisms**

We identified three specific underlying mechanisms that helped in the cultivation of team resilience over time, and the absence of which led to gradual team corrosion in particular when it comes to member satisfaction and team social outcomes, but also

28

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

Accepted Article

task performance over time: (i) *regulating and leveraging emotional expression* (e.g. ‘letting go’ or ‘speaking up’), (ii) *team inclusion practices* (e.g. training provision, flexibility, and adjustments to a member’s special needs, and early establishment of the ‘rules of the game’) and (iii) *self-reflective practices* (e.g. taking the decision to ‘step back’ to give more space to passive or shy members or to ‘step forward’, to build bridges between senior and junior members). More broadly, we describe these team resilience building mechanisms as being based on *reflective practices followed by action*, taking into account sensemaking and critical team level resources. We demonstrate these mechanisms with some examples.

#### *Regulating and leveraging emotional expression*

In *Ly’s team*, Ly openly and directly attributed perceived lack of competence to a lack of discipline and moral failures. This behavior was alienating to Frederic and Maria in particular who in turn did not acknowledge all the hard work Ly was doing and the stress she was under (she was also pregnant at the time). They learned to avoid speaking up and making mistakes in their efforts to stay away from confrontation and becoming a target. There was a similar pattern in *Jana’s team* in which her over eager and assertive style pushed some of the more reserved team members, like Anja, away, while the remote members Lorena and Elena, seeing value in Jana’s efforts, were confused with these dynamics. The team split into two with time; the remote members who were in the periphery and the focal members who formed the core of the team. In *Aleksei’s team*, while Caroline was not very happy with the situation of not everyone being prepared for a meeting, she decided not to let negative feelings accumulate and moved

29

Rights statement: This is the author’s version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

Accepted Article

on. Emil and Cui Yu, in response, openly admitted their shortcomings while praising both Caroline's work in particular and the team's flexibility in general. In contrast, Jana's and Ly's stressed behavior and what were thought of as personalized attacks brought their teams to a near collapse and the relations broke at times into open hostilities between some members.

#### *Team inclusion practices*

In *Nea's team*, Gina's initial failure to succeed in a task belonging to her field of expertise was swept under the carpet while most of the team stayed up late to solve the problem under tremendous pressure. These events were never openly discussed in the team. Gina felt embarrassed and her perception of herself as a 'lesser team member' became an enduring trait, weakening her team membership and level of contribution. In *Ly's team* another type of dynamics unfolded altogether as Ly publicly questioned Frederic's competence to be part of the team thus causing an open conflict between the two that further expanded to other team members who ended up taking sides. In contrast, in *Peter's team* the acceptance by the senior members that 'it is natural in any team that some are always more capable than others' helped build team resilience as training programs were created and no one's lack of skills (technical, subject matter or language) was ever pointed out as an individual level problem, but rather as a team challenge to be solved. In *Aleksei's team*, the whole team adjusted to Jia Li's struggles with spoken English and moved to a written communication platform online to integrate her into the team even though for the others, this meant more time consuming and cumbersome meetings. For them, Skype and chat would have been more convenient.

30

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

Jia Li was grateful as the others genuinely acknowledged her hard work and her motivation was sustained.

### *Self-reflective practices*

In *Jana's team*, the situation of a team member not being prepared was tackled by some members taking on the whole task without further reflection regarding possible alternative causes of the situation other than an easy and unreflective explanation such as 'laziness'. This type of persistent attitude and lack of in-depth sensemaking contributed to a weakened resilience of the team over time. In *Peter's team* the same situation was addressed very differently. Peter, not blaming anyone directly and considering other possible explanations than 'laziness', realized hostility would neither help the team nor be fair, subtly yet clearly communicated that everyone's contribution was both needed and valuable by postponing the meeting to the next day. This way, it was understood that not being prepared was an unacceptable work practice and that everyone's contributions, regardless of their level of seniority, was needed for the team to succeed. Further, in the same team, active participation of all members was constantly encouraged by measures such as the more active members stepping back, giving the others space and openly encouraging participation, thus making the team stronger and gradually developing a stronger team and thus a higher level of resilience.

## **DISCUSSION**

For improved virtual teamwork in particular and digital communication in general, paying attention to subtle cues is an important yet difficult task due to lack of face-to-

31

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

face interaction and poor understanding of team members' personal situations and the social contexts they are embedded in, especially when members are located in different places and their organizational affiliations vary. Paying attention to cues is especially challenging and particularly important when working under pressure, when the risk of failure is high and even small misunderstandings and misalignments are quick to build into a conflict or exclusion of some members. This is, however, the organizational reality people in many firms and industries face today.

The key question this study set out to address was *how do virtual teams become resilient?* In tackling this question, we drew on integrated theoretical perspective of sensemaking (Weick 1979, 1995), COR (Hobfoll, 1989, 2001, 2011), and team resilience literature (cf. Alliger et al., 2015; Morgan et al., 2013; West et al., 2009). As we have seen in our study, being perceived as rude and not as someone worried or stressed, or interpreting someone's struggles with language as a lack of capability and not as a hurdle to overcome, can lead to a vicious cycle and erosion of the team as such. Resilient teams capable of bouncing back from adversity, small and more significant, avoid such patterns—and reverse negative instances by proactive sensemaking and resource investment, reflective practices and suppression of spontaneous negative emotions, and ultimately taking actions to encourage member inclusion. Consistent with our integrated theoretical perspective, recent research on team resilience suggests that resilient teams can bounce back to their pre-adversity performance level and beyond by investing resources into resilience building team activities that can help minimize, manage, and mend adversity (Alliger et al., 2015). Additionally, and in line

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220



with our study, prior research emphasizes that resilient teams minimize the gravity of the adversity by preparing for adversity, engaging in its early detection, making sense of it, and selecting the most appropriate course of action to bounce back from it (Stoverinks et al., 2018). Therefore, we suggest that team members' proactive sensemaking of mundane events followed by reflection-action mechanisms (both by most influential and skilled contributors as well as other team members), ultimately helped some teams build resilience over time while others failed. Teams successful at gradually building resilience *from within* were then better prepared to buffer external shocks like increasing time pressure and more demanding tasks than the other teams in the experiment—a virtuous cycle of resilience build-up and sustained top performance (see Table 2). Figure 1 below shows our empirically derived model for resilience building in a virtual team.

**[Please insert Figure 1 about here]**

Figure 1: A model of team resilience in a virtual team

The model suggests that sensemaking as an individual and, when shared, as a collective resource can be an enabler for resilience building in teams executing complex tasks in a virtual environment. Influential team members' capability (or lack thereof) to capture and make sense of mundane events such as a team member being unprepared, lacking competence, or being passive in non-simplistic ways, self-reflecting to reach for deep causes of effects (rather than being satisfied with easy interpretations) followed

33

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

by adequate concrete actions, is key here. Such actions can be seen as regulating negative, or leveraging positive emotional expression (cf. Kahn, 2005; Stephens et al., 2013; Maitlis & Sonenshein, 2010; Maitlis, Vogus & Lawrence, 2013) and action explicitly taken to encourage team inclusion while avoiding team exclusion (cf. Hambrick, 1994). Consistent with our view on resilience building actions such as regulating and leveraging of emotional expression, Westphal and Bonanno (2007) emphasized not only the consideration of emotion regulation processes as a coping strategy for potentially aversive or challenging events, but also noted that such processes in turn may stimulate the expression of positive emotion and produce mutually satisfying interactions with other individuals (cf. Fredrickson, 2001).

The key link between sensemaking and action, here, is what we call reflective practices (see also Leitch & Day, 2000). With *reflection-in-action* we refer to a team member's willingness and capacity to actively identify and search for alternative causes for negative common events on-the-go and in the heat of action (see also Loughran, 1996; Schön, 1983). In our empirical data we could see this, for instance, in the way Peter acted to postpone a scheduled meeting due to some others not being prepared, thus signaling that not being prepared was *not* an accepted team behavior, and the need for everyone to be on board. With *reflection-for-action*, we refer to a team member's willingness and capacity to read cues and plan for concrete actions in the future and follow through (see also Killian & Todnem, 1991). We could see this, for instance, in Peter's decision to step back in a future meeting to give space to others, which then led to Jia Li becoming more active in the following meetings. In addition, it is important to

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

emphasize that both the reflective practices and action (as shown in Figure 1), identified as mechanisms for building resilience, are mutually reinforcing.

In modern turbulent environments, teams do not just become and remain cohesive, coordinated, well-performing, with satisfied members, and so on, automatically and *once and for all*. We suggest that a team capable of building resilience and bouncing back from common mishaps, large and small as the team travels its journey, is in a better position to reach positive outcomes, both team and individual level, than one lacking this capability. Here we concur with West et al. (2009) in that team resilience shows increasingly significant explanatory power of such team outcomes as cohesion, cooperation, coordination, conflict and team satisfaction, and with Abbey, Abramis and Caplan (1985) in that relationships can help cultivate, accumulate, and provide access to emotionally-based resources, e.g. care and concern and thus form a basis for team resilience. We partly agree with Stephens et al. (2013) and suggest that rather than resilience *depending* on the presence and quality of interpersonal relationships, both phenomena are intertwined. Resilience and good interpersonal relationships in a team reinforce one another. As Aleksei's and Peter's teams showed us, a team's capability to build and maintain resilience is a key element in members' satisfaction in their team life, and team's capability to successfully perform its tasks in the long run. Despite being well-performing (although less than Aleksei's and Peter's teams) from the outside, Nea's team was about to lose two key members, Jana's team had almost split into two and in Ly's team's social relations were

so infected that team members did not want to even meet in person for the team exit interview with the course facilitators.

## **IMPLICATIONS**

Here we summarize our key theoretical, methodological and practical implications and offer ideas for future scholarship.

### **Theoretical Implications**

*Expanding the study of team resilience to a new context.* Most research into team resilience has been on groups very different from virtually working teams encountered in today's knowledge-based industries and international contexts in particular (see, e.g., studies on sports teams: Kleinert et al., 2012; Morgan et al., 2013). This is a surprising omission given the difficulty the research community has had to find prescriptive models to 'make' virtually working teams more effective.

*A shift of focus from major external to mundane but crucial events within the team.* Extant resilience research tends to focus on unexpected, major, abrupt, and/or 'extreme' events (see, e.g. Fiksel, Polyviou, Croxton & Pettit, 2015; Gittell, Cameron, Lim & Rivas, 2006; Waldman, Carmeli & Halevi, 2011; Williams & Shepherd, 2016). A similar focus on major events such as those triggered by crisis and planned major change can be seen in much of the current sensemaking literature (Maitlis & Sonenshein 2010; Weick 1988). Expanding this view using an integrated perspective of sensemaking (1993, 1995) and COR theory (Hobfoll, 1989), this study shows that mundane yet crucial events can be equally important in providing insights into the required sensemaking and critical team level resource mechanisms for building

36

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

Accepted Article

resilience in virtual teams. In doing so, the team can ‘bounce back’ from continuous challenges in a constantly changing, fast-paced environment—the type of conditions many modern teams typically work in. In our study, we have shown how individual team members’ sensemaking capabilities and team level resources, and decisions to act based on mundane but crucial events in a situation of ‘business as usual’ (Alliger et al., 2015; Kuntz et al., 2016) can have a tremendous impact on whether their teams become resilient—or not. Moreover, our empirical study contributes to the team level application of COR theory—which has predominantly focused on the individual level of analysis—and thus answers recent calls for extending COR theory to team level resilience research (e.g. Hartmann et al., 2019).

*A resilience-building model for a virtually working team.* This contribution builds on the importance of understanding processes of resilience (Sutcliffe & Vogus, 2003) particularly in response to actions and interactions. Our analytic model provides an important step to better understand how to investigate team resilience strategies that facilitate both high task and social performance over time in virtual as well as other teams. It also complements similar existing frameworks applicable to research at the team level and to investigate team resilience strategies over time (see Alliger et al., 2015; Bonanno et al., 2015).

### **Methodological Implications**

Both scholarly studies and practitioner voices tell us that many if not most modern organizational teams struggle or underperform (cf. Hackman, 2002; 2009). Despite the enormous amount of studies on teams, we know surprisingly little about how effective

Rights statement: This is the author’s version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

teams are created, maintained and led (cf. Hoch & Kozlowski, 2014; Zaccaro, Rittman & Marks, 2001). Virtual teams are often researched in the light of how technology and virtual team environment, or else, cultural differences, obstruct or enable teamwork without coming to any clear conclusions (Gibbs & Boyraz, 2015; Stahl et al., 2010). In our study as well, the virtual environment and cultural differences were not what ultimately enabled or obstructed team performance, but rather what members were able to do with their resources and how they managed their social relations (cf. Hobfoll, 1989). Teaming aspects, team dynamics and, in general, how more or less successful teams form and what sets them apart from one another have hardly received any attention so far (Cronin et al., 2011). We suggest that a better understanding of what happens inside teams is crucial to understand how teams can become sustainably successful. For this, in-depth experimental studies like this one on how virtual teams build resilience from within are necessary.

### **Implications for Practice**

Virtual teams are often under risk of unmaking, underperforming or failing (e.g. Einola & Alvesson, 2019)—and for reasons that may totally escape unreflective team members or leaders not skilled at proactive sensemaking and aware of the importance of capturing subtle clues, and acting on them. Sustaining a high relational performance is as difficult as it is important for employee well-being, social relations and sustained task performance (cf. Alliger et al., 2015). To develop resilience by first learning to overcome mundane yet crucial events within the team to then be able to face more severe setbacks and external threats (i.e. a change in management, budget cuts, change

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

Accepted Article

in customer requirements, litigations, problems with supply chain, etc.) becomes a key team capability individual team members must help build (see Staw, Sandelands & Dutton, 1981). The practical difficulty here is to detect which cues need to be reacted on in the heat of daily work. In this study, we have discussed three common team occurrences—a member being unprepared, lacking competence or being seemingly passive—but there are more. Each team’s life evolves in its own idiosyncratic context. Hence, we are cautious about making prescriptions, but we urge practitioners seeking to understand the dynamic processes of a resilient team to become more sensitive to the seemingly trivial and mundane events around them.

Further, in line with prior research, team resilience is a dynamic, temporal process (e.g. Morgan et al., 2013), suggesting that practitioners can derive in-depth understanding of team resilience if they pay attention to processes triggered by mundane events at the team level which exert downward influence on individual team members to build up their capacity for team resilience. This implication is consistent with a recent critical review, suggesting that both individual and team resilience are interdependent and can mutually reinforce each other (Hartmann et al., 2019). For example, empirical findings from our study (i.e. *Peter’s team* in contrast to *Nea’s team*) reveal that a lack of competence—a mundane event—can trigger team processes such as training program and mentoring for individual team members (i.e. team inclusion practices) to build capacity for team resilience, which in turn can sustain organization level performance and morale over time. Additionally, this implication underlines how resource investment can help generate ‘gain spirals’ (Hobfoll, 2001) and positive

Accepted Article

resource crossover (Chen et al., 2015; Westman, 2001) for team resilience. Yet, we must be cautious, because individual level resilience may not be a panacea for team level resilience. Team level resilience requires distinct factors or collective characteristics peculiar to groups, e.g. social support, quality of emotional expression among team members, high quality relationships, (see Morgan et al., 2017), and these examples can be described as resources enhancing resilience (Chen et al, 2015; Hobfoll, 2011).

Furthermore, paying careful attention to leadership processes triggered by mundane events—e.g. an influential individual team member’s decision to ‘step back’ to give more space to passive members or ‘step forward’ to build bridges between senior and junior members (i.e. self-reflective practice), or an individual’s action to ‘let go’ or ‘speak up’ constructively (i.e. regulating and leveraging emotional expression)—can enhance practitioners understanding of how individual level processes exert upward influences at the team level and safeguard the development of team resilience from potentially harmful consequences of stressors (see Alliger et al., 2015; Chen et al., 2015), and with consequential impact for organizational level resilience (see Rodríguez-Sánchez & Vera Perea, 2015; Schriber, Bauer, & King, 2019). In short, while our study focuses on team dynamics to underscore how to build protective resources that buffer teams from potentially harmful effects (see Chen et al., 2015, Hobfoll, 1989, 2011), we also add from a multilevel perspective the applied implications of how these protective factors or resources can interplay at the team level with individual and organizational levels (see Hartmann et al., 2019), and thus partly



provide practical insight into unresolved questions on “how resilience can successfully be built across individual, group and organizational levels of analysis” (see Linnenluecke, 2017, p. 9).

### **Suggestions for Future Inquiry**

We note that our findings cannot be grossly generalized to other contexts due to our methodological approach based on the interpretive paradigm (Stake, 1995) and the explorative nature of our study. However, we have followed a large number of teams over their full life and studied *what people do* and how they act in these teams rather than trying to understand variables leading to team performance. Experimental studies like this one can provide both novel and useful insights about human behavior, i.e. how people build team resilience, rather than attempting to generate law-like cause and effect explanations. In our view, there are no reasons why our findings would not have a more general applicability and serve as an inspiration for future scholarship in this area. Hence, we recommend further studies on links between mundane events and team resilience in different contexts modern teams operate in. Additionally, due to the fluid nature of modern teams and what typically are continuously changing team and task environments, mundane yet crucial events relating to teamwork and workplace pressures may become more and more relevant to build capacity for resilience. Thus, while our study does not offer an exhaustive list of mundane events influencing teams, we suggest that future studies can expand on our exploratory research.

Our research focused on the very little understood aspect of team dynamics, sidelining the much-studied variables ‘cultural differences’ and the ‘virtual work

41

Rights statement: This is the author’s version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

Accepted Article

environment'. Similar approaches to ours could be used to put these aspects 'back' to better understand their influence on team dynamics and outcomes. We also noticed a strong relation between what could be characterized as team cohesion (Carless & de Paola, 2000), conflict (Jehn & Mannix, 2001) and team member satisfaction with their team life with resilience in our empirical material. However, each team seems to be an idiosyncratic and temporally sensitive unit when it comes to what is a suitable degree of cohesion (task or social), conflict (process, task or interpersonal) or strength of social ties for it to develop a strong capability for resilience—and good outcomes. One other area that might be of interest to future studies is the role of diversity, e.g. 'gender diversity' as well as other diversity attributes and their influence on virtual team resilience (cf. Bui, Chau, Degl'Innocenti, Leone, & Vicentini, 2019). This observation is an open invitation for other researchers to engage in future studies.

## CONCLUSIONS

Despite limiting factors embedded in the setting, such as reliance on technology for basic communication to be possible, members of virtual teams are actors, co-creating agents of their environment and the team as such, as well as the processes necessary for the accomplishment of the work they are assigned to do, independently of whether they choose to take explicit action or not at any given instance. Team resilience is, therefore, key to this context. We emphasize that the resilience building mechanisms identified in our study should be seen as a set of resources to teams (e.g. Chen et al., 2015) which, in line with Horne and Orr's (1998) arguments, suggest that individual resilience though may be influential does not necessarily guarantee resilience at the team level.

42

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

Indeed, findings reported here support Morgan et al.'s (2013, p. 558) claim that team resilience rests on "a dynamic, psychosocial process which protects a group of individuals from the potential negative effect of the stressors they collectively encounter" and indicate that this especially may be pertinent for teams seeking to thrive at the very top of their ranks in a virtual context. This also speaks to the importance of sensemaking (1993,1995) and critical team level resource investment (Hobfoll, 1989) to facilitate the dynamic, psychosocial process of sensemaking, and protect individual team members against resource loss from adversity-induced setback and offer gain-oriented resources that support team members to acquire further resources. We believe that this study offers novel insights for both theory development and managerial practice, and represents an important starting point for future research on resilience in virtual teams.

## References

- Alliger, G. M., Cerasoli, C. P., Tannenbaum, S. I., & Vessey, W. B. (2015). Team resilience. *Organizational Dynamics*, *44*, 176-184.
- Alvesson, M. (2003). Methodology for close up studies – struggling with closeness and closure. *Higher Education*, *46*, 167–193.
- Athota, V. S., Budhwar, P., & Malik, A. (2019). Influence of personality traits and moral values on employee well-being, resilience and performance: A cross-national study. *Applied Psychology: An International Review*, doi: 10.1111/apps.12198
- Ayoko, O. B., Konrad, A. M., & Boyle, M. V. (2012). Online work: Managing conflict and emotions for performance in virtual teams. *European Management Journal*, *30*(2), 156-174.
- Balogun, J., & Johnson, G. (2005). From intended strategies to unintended outcomes: The impact of change recipient sensemaking. *Organization studies*, *26*(11), 1573-1601.

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

- Balogun, J., Huff, A. S., & Johnson, P. (2003). Three responses to the methodological challenges of studying strategizing. *Journal of Management Studies*, 40(1), 197-224.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Bansal, P. & Corley, K. (2011) The coming of age for qualitative research. Embracing the diversity of qualitative methods. *Academy of Management Journal*, 54, 233-237
- Bello, D., Leung, K., Radebaugh, L., Tung, R. L., & Van Witteloostuijn, A. (2009). From the editors: Student samples in international business research. *Journal of International Business Studies*, 40: 361-364. <https://doi.org/10.1057/jibs.2008.101>
- Bennett, J. B., Aden, C. A., Broome, K., Mitchell, K., & Rigdon, W. D. (2010). Team resilience for young restaurant workers: research-to-practice adaptation and assessment. *Journal of Occupational Health Psychology*, 15(3), 223–236.
- Blatt, R. (2009). Resilience in Entrepreneurial Teams: Developing the Capacity to Pull Through. *Frontiers of Entrepreneurship Research*, 29(11), 1–14.
- Bonanno, G.A., (2004). Loss, trauma, and human resilience: have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist*, 59(1), 20–28.
- Bonanno, G. A., Romero, S. A., & Klein, S. I. (2015). The temporal elements of psychological resilience: An integrative framework for the study of individuals, families, and communities. *Psychological Inquiry*, 26(2), 139-169.
- Bowers, C., Kreutzer, C., Cannon-Bowers, J., & Lamb, J. (2017). Team resilience as a second-order emergent state: A theoretical model and research directions. *Frontiers in Psychology*, 8, 1360.
- Britt, T. W., Shen, W., Sinclair, R. R., Grossman, M. R., & Klieger, D. M. (2016). How much do we really know about employee resilience?. *Industrial and Organizational Psychology*, 9(2), 378-404.
- Brodsky, A. E., Welsh, E., Carrillo, A., Talwar, G., Scheibler, J., & Butler, T. (2011). Between synergy and conflict: balancing the processes of organizational and individual resilience in an Afghan women's community. *American Journal of Community Psychology*, 47(3-4), 217-235.
- Bui, H., Chau, V. S., Degl'Innocenti, M., Leone, L., & Vicentini, F. (2019). The Resilient Organisation: A Meta-Analysis of the Effect of Communication on Team Diversity and Team Performance. *Applied Psychology: An International Review*, doi: 10.1111/ap p s .122 03
- Burke, C.M. and Morley, M.J., (2016). On temporary organizations: A review, synthesis and research agenda. *Human Relations*, 69(6), 1235-1258.
- Carless, S. A., & De Paola, C. (2000). The measurement of cohesion in work teams. *Small group research*, 31(1), 71-88.

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

- Carmeli, A., Friedman, Y., & Tishler, A. (2013). Cultivating a resilient top management team: The importance of relational connections and strategic decision comprehensiveness. *Safety Science*, *51*(1), 148-159.
- Carmeli, A., Yitzhak-Halevy, M. & Weisberg, J., (2009). The relationship between emotional intelligence and psychological wellbeing. *Journal of Managerial Psychology*, *24*(1), 66-78.
- Caza, B. B., & Milton, L. P. (2012). Resilience at work: Building capability in the face of adversity. In K. S. Cameron & G. M. Spreitzer (Eds.), *The Oxford handbook of positive organizational scholarship* (pp. 895–908). New York, NY: Oxford University Press.
- Chen, S., Westman, M., & Hobfoll, S. E. (2015). The commerce and crossover of resources: Resource conservation in the service of resilience. *Stress and Health*, *31*(2), 95-105.
- Cohn, M.A., Fredrickson, B.L., Brown, S.L., Mikels, J.A., & Conway, A.M. (2009) Happiness unpacked: Positive emotions increase life satisfaction by building resilience. *Emotion*, *9*(3), 361–368.
- Cooke, F. L., Wang, J., & Bartram, T. (2019). Can a Supportive Workplace Impact Employee Resilience in a High Pressure Performance Environment? An Investigation of the Chinese Banking Industry. *Applied Psychology: An International Review*, doi: 10.1111/apps.12184.
- Coutu, D. L. (2002). How resilience works. *Harvard Business Review*, *80*(5), 46-56.
- Cornum, R., Mathews, M., & Seligman, E. P. (2011). Comprehensive soldier fitness: Building resilience in a challenging institutional context. *American Psychologist*, *66*, 4–9.
- Cronin, M., Weingart, L. and Todorova, G. (2011) Dynamics in groups: are we there yet? *Academy of Management Annals*, *5*(1), 571-612.
- De Dreu, C. K., & Weingart, L. R. (2003). Task versus relationship conflict, team performance, and team member satisfaction: a meta-analysis. *Journal of Applied Psychology*, *88*(4), 741.
- Demerouti, E., Bakker, A.B., Nachreiner, F., & Schaufeli, W.B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, *86*(3), 499–512.
- Dutton, J. E., & Heaphy, E. D. (2003). The power of high-quality connections at work. In K. Cameron, J. E. Dutton & R. E. Quinn (Eds.), *Positive organizational scholarship* (pp. 263-278). San Francisco, CA: Berrett-Koehler.
- Dutton, J.E., Worline, M.C., Frost, P.J., & Lilius, J., (2006). Explaining compassion organizing. *Administrative Science Quarterly*, *51*, 59–96.
- Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, *44*(2), 350-383.
- Einola, K (2017) Making sense of successful global teams. Doctoral dissertation: Turku School of Economics. Available at: <http://urn.fi/URN:ISBN:978-951-29-6912-8>.
- Einola, K., & Alvesson, M. (2019). The making and unmaking of teams. *Human Relations*, 0018726718812130.

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

- Feldman, M. S., & Orlikowski, W. J. (2011). Theorizing practice and practicing theory. *Organization Science*, 22(5), 1240-1253.
- Fergus, S., & Zimmerman, M.A., (2005). Adolescent resilience: a framework for understanding healthy development in the face of risk. *Annual Review Public Health*, 26, 399-419.
- Ferrazzi, K. (2014). Managing Yourself Getting Virtual Teams Right. *Harvard Business Review*, 92, 120-123.
- Fiksel, J., Polyviou, M., Croxton, K.L. & Pettit, T.J. (2015). From risk to resilience: Learning to deal with disruption. *MIT Sloan Management Review*, 56, 79-86.
- Fletcher, D., & Sarkar, M. (2012). A grounded theory of psychological resilience in Olympic champions. *Psychology of Sport and Exercise*, 13, 669-678.
- Fogarty, G. J., & Perera, H. N. (2016). Resilience: distinct construct or conglomerate of existing traits?. *Industrial and Organizational Psychology*, 9, 422-429.
- Fredrickson, B.L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56(3), 218-226.
- Furniss, D., Back, J., Blandford, A., Hildebrandt, M., & Broberg, H. (2011). A resilience markers framework for small teams. *Reliability Engineering & System Safety*, 96(1), 2-10.
- Gabriel, A.S., Diefendorff, J.M., & Erickson, R.J. (2011). The relations of daily task accomplishment satisfaction with changes in affect: A multilevel study in nurses. *Journal of Applied Psychology*, 96(5), 1095-1104.
- Galli, N., & Vealey, R. (2008). Bouncing back from adversity: athletes' experiences of resilience. *The Sport Psychologist*, 22(3), 316-335.
- Garnezy, N. (1991). Resilience in children's adaptation to negative life events and stressed environments. *Pediatric annals*, 20(9), 459-466.
- Gibbs, J. L., Sivunen, A., & Boyraz, M. (2017). Investigating the impacts of team type and design on virtual team processes. *Human Resource Management Review*, 27(4), 590-603.
- Gibbs, J. L. & Boyraz, M. (2015). IHRM's Role in Managing Global Teams. *The Routledge Companion to International Human Resource Management*, New York: Routledge, 552-551.
- Gioia, D. A., Corley, K. G., & Hamilton, A. L. (2012). Seeking qualitative rigor in inductive research notes on the Gioia methodology. *Organizational Research Methods*, 16(1), 15-31.
- Gittell, J.H., Cameron, K., Lim, S. & Rivas, V. (2006). Relationships, layoffs, and organizational resilience: airline industry responses to September 11. *Journal of Applied Behavioral Science*, 42(3), 300-329.
- Glaser, B., & Strauss, A. (1967). *The discovery of grounded theory*. London: Weidenfeld and Nicholson, 24(25), 288-304.
- Gordon, M.E., Slade, L.A. & Schmitt, N. (1986). The "science of the sophomore" revisited: From conjecture to empiricism. *Academy of Management Review*, 11(1), 191-207.

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

- Gordon, A. M. & Wall, T.D. (2009). The Neglected Science and Art of Quasi-Experimentation: Why-to, When-to, and How-to Advice for Organizational Researchers. *Organizational Research Methods*, 12(4), 653-686.
- Gupta, A. K., Govindarajan, V. & Wang, H. (2008). *The quest for global dominance: Transforming global presence into global competitive advantage*. John Wiley & Sons.
- Hackman, J. R. (2002). *Leading teams: Setting the stage for great performances*. Harvard Business Press.
- Hackman, J. R. (2009). Why teams don't work. Interview by Diane Coutu. *Harvard Business Review*, 87(5), 98-105.
- Hambrick, D. C. (1994). Top management groups: A conceptual integration and reconsideration of the "team" label", In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior* (pp. 171-214). Greenwich, CT: JAI Press.
- Hamel, G., & Valikangas, L. (2003). The quest for resilience. *Harvard Business Review*, 81(9), 52-65.
- Hartmann, S., Weiss, M., Newman, A., & Hoegl, M. (2019). Resilience in the workplace: A multilevel review and synthesis. *Applied Psychology: An International Review*, doi: 10.1111/apps.12191.
- Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *American Psychologist*, 44(3), 513-524.
- Hobfoll, S. E. (2001). The influence of culture, community, and the nested-self in the stress process: Advancing Conservation of Resources theory. *Applied Psychology: An International Review*, 50(3), 337-370.
- Hobfoll, S.E. (2011), Conservation of resource caravans and engaged settings, *Journal of Occupational and Organizational Psychology*, 84 (1), 116-122.
- Hoch, J. E., & Kozlowski, S. W. (2014). Leading virtual teams: Hierarchical leadership, structural supports, and shared team leadership. *Journal of Applied Psychology*, 99(3), 390-403.
- Horne, J. F., & Orr, J. E. (1998). Assessing behaviors that create resilient organizations. *Employment Relations Today*, 24(4), 29-39.
- Jehn, K. A., & Mannix, E. A. (2001). The dynamic nature of conflict: A longitudinal study of intragroup conflict and group performance. *Academy of Management Journal*, 44(2), 238-251.
- James, K. (2011). The organizational science of disaster/terrorism prevention and response: Theory-building toward the future of the field. *Journal of Organizational Behavior*, 32(7), 1013-1032.
- Jarvenpaa, S. L., & Leidner, D. E. (1998). Communication and trust in global virtual teams. *Journal of Computer-Mediated Communication*, 3(4), JCMC346.
- Katzenbach, J. R. & Smith, D. K. (2005). The discipline of teams. *Harvard Business Review*, 83(7), 162-171.

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

- Kelly, J. R., & Barsade, S. G. (2001). Mood and emotions in small groups and work teams. *Organizational Behavior and Human Decision Processes*, 86(1), 99-130.
- Kennedy, D. M., Landon, L. B., & Maynard, M. T. (2016). Extending the conversation: Employee resilience at the team level. *Industrial and Organizational Psychology*, 9(2), 466-475.
- Kleinert, J., Ohlert, J., Carron, B., Eys, M., Feltz, D., Harwood, C., Linz, L., Seiler, R., & Sulprizio, M. (2012). Group dynamics in sports: an overview and recommendations on diagnostic and intervention. *The Sport Psychologist*, 26(3), 412-434.
- Kahn, W. A. (2005). *Holding fast: The struggle to create resilient caregiving organizations*. New York, NY: Brunner-Routledge.
- Killion, J., & Todnem, G. (1991). A process for personal theory building. *Educational Leadership*, 48(6), 14-16.
- King, D. D., Newman, A., & Luthans, F. (2016). Not if, but when we need resilience in the workplace. *Journal of Organizational Behavior*, 37(5), 782-786.
- Kossek, E. E., & Perrigino, M. B. (2016). Resilience: A review using a grounded integrated occupational approach. *The Academy of Management Annals*, 10(1), 729-797.
- Kozlowski, S. W., & Ilgen, D. R. (2006). Enhancing the effectiveness of work groups and teams. *Psychological Science in the Public Interest*, 7(3), 77-124.
- Kozlowski, S. J.W. & Bell, B. S. (2003). Work groups and teams in organizations. In W. C. Borman, D. R. Ilgen, & R. Klimoski (Eds.), *Comprehensive handbook of psychology* (Vol. 12, pp. 333–376). New York: Wiley.
- Kozlowski, S. W. J., Gully, S. M., Nason, E. R., & Smith, E. M. (1999). Developing adaptive teams: A theory of compilation and performance across levels and time. In D. R. Ilgen, & E. D. Pulakos (Eds.), *The changing nature of performance: Implications for staffing, motivation, and development* (pp. 240–292). San Francisco, CA: Jossey-Bass.
- Kuntz, J. R., Näswall, K., & Malinen, S. (2016). Resilient employees in resilient organizations: Flourishing beyond adversity. *Industrial and Organizational Psychology*, 9(2), 456-462.
- Lamb, D., & Cogan, N. (2016). Coping with work-related stressors and building resilience in mental health workers: A comparative focus group study using interpretative phenomenological analysis. *Journal of Occupational and Organizational Psychology*, 89(3), 474–492.
- Langley, A. (1999). Strategies for theorizing from process data. *Academy of Management Review*, 24(4), 691–710.
- Leitch, R., & Day, C. (2000). Action research and reflective practice: Towards a holistic view. *Educational Action Research*, 8(1), 179-193.
- Liao, C. (2017). Leadership in virtual teams: A multilevel perspective. *Human Resource Management Review*, 27(4), 648-659.
- Lilius, J.M., Worline, M.C., Dutton, J.E., Kanov, J.M., & Maitlis, S., (2011). Understanding compassion capability. *Human Relations*, 64(7), 873–899.

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220



- Linnenluecke, M. K. (2017). Resilience in business and management research: A review of influential publications and a research agenda. *International Journal of Management Reviews*, 19(1), 4–30.
- Liu, Y., Wang, Z. & Lü, W. (2013). Resilience and affect balance as mediators between trait emotional intelligence and life satisfaction. *Personality and Individual Differences*, 54(7), 850–855.
- Locke, K., Golden-Biddle, K. & Feldman, M. S. (2008). Perspective—making doubt generative: Rethinking the role of doubt in the research process. *Organization Science*, 19(6), 907–918.
- Loughran, J. J. (1996). *Developing Reflective Practice: learning about teaching and learning through modeling*. London: Falmer Press.
- Luthans, F. (2002). The need for and meaning of positive organizational behavior. *Journal of Organizational Behavior*, 23(6), 695–706.
- Maguen, S., Vogt, D. S., King, L. A., King, D. W., & Litz, B. T. (2006). Posttraumatic growth among Gulf War I veterans: The predictive role of deployment-related experiences and background characteristics. *Journal of Loss and Trauma*, 11(5), 373–388.
- Maitlis, S. & Christianson, M. (2014). Sensemaking in organizations: Taking stock and moving forward. *The Academy of Management Annals*, 8(1), 57–125.
- Maitlis, S., Vogus, T. J., & Lawrence, T. B. (2013). Sensemaking and emotion in organizations. *Organizational Psychology Review*, 3(3), 222–247.
- Maitlis, S. & Sonenshein, S. (2010). Sensemaking in crisis and change: Inspiration and insights from Weick (1988). *Journal of Management Studies*, 47(3), 551–580.
- Martin, A. & Bal, V. (2015). The State of Teams – A Research White Paper from Center for Creative Leadership. Retrieved May 2, 2017, from <https://www.ccl.org/wp-content/uploads/2015/04/StateOfTeams.pdf>
- Masten, A. S., & Narayan, A. J. (2012). Child development in the context of disaster, war, and terrorism: Pathways of risk and resilience. *Annual Review of Psychology*, 63, 227–257.
- Masten, A. S., & Reed, M. J. (2002). Resilience in development. In C. Snyder & S. Lopez (Eds.), *Handbook of positive psychology* (pp. 74–88). New York, NY: Oxford University Press.
- Mathieu, J. E., Heffner, T. S., Goodwin, G. F., Salas, E., & Cannon-Bowers, J. A. (2000). The influence of shared mental models on team process and performance. *Journal of Applied Psychology*, 85(2), 273.
- Matos, P. S., Neushotz, L. A., Griffin, M. T. Q., & Fitzpatrick, J. J. (2010). An exploratory study of resilience and job satisfaction among psychiatric nurses working in inpatient units. *International Journal of Mental Health Nursing*, 19(5), 307–312.
- Martinez-Corts, I., Demerouti, E., Bakker, A.B., & Boz, M. (2015). Spillover of interpersonal conflicts from work into nonwork: A daily diary study. *Journal of Occupational Health Psychology*, 20(3), 326–337.

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

- Maznevski, M. L. & Chudoba, K. M. (2000). Bridging space over time: Global virtual team dynamics and effectiveness. *Organization Science*, *11*(5), 473–492.
- Meneghel, I., Martínez, I. M., & Salanova, M. (2016a). Job-related antecedents of team resilience and improved team performance. *Personnel Review*, *45*(3), 505-522.
- Meneghel, I., Salanova, M., & Martínez, I.M. (2016b). Feeling good makes us stronger: How team resilience mediates the effect of positive emotions on team performance. *Journal of Happiness Studies*, *17*(1), 239–255.
- Mills, M. J., Fleck, C. R., & Kozikowski, A. (2013). Positive psychology at work: A conceptual review, state-of-practice assessment, and a look ahead. *The Journal of Positive Psychology*, *8*(2), 153-164.
- Morgan, P. B., Fletcher, D., & Sarkar, M. (2017). Recent developments in team resilience research in elite sport. *Current Opinion in Psychology*, *16*, 159-164.
- Morgan, P. B., Fletcher, D., & Sarkar, M. (2015). Understanding team resilience in the world's best athletes: A case study of a rugby union World Cup winning team. *Psychology of Sport and Exercise*, *16*, 91-100.
- Morgan, P. B., Fletcher, D., & Sarkar, M. (2013). Defining and characterizing team resilience in elite sport. *Psychology of Sport and Exercise*, *14*(4), 549-559.
- Norris, F. H., Stevens, S. P., Pfefferbaum, B., Wyche, K. F., & Pfefferbaum, R. L. (2008). Community resilience as a metaphor, set of capacities, and strategy for disaster readiness. *American Journal of Community Psychology*, *41*(1-2), 127-150.
- O'Leary, M. B., Mortensen, M. & Woolley, A. W. (2011). Multiple team membership: A theoretical model of its effects on productivity and learning for individuals and teams. *Academy of Management Review*, *36*(3), 461–478.
- Orlikowski, W.J. (1996). Improvising organizational transformation over time: A situated change perspective. *Information Systems Research*, *7*(1), 63-92.
- Potter, J. & Wetherell, M. (1987). *Discourse and social psychology. Beyond attitudes and behaviour*. London: Sage.
- Powley, E.H., (2009). Reclaiming resilience and safety: resilience activation in the critical period of crisis. *Human Relations*, *62*(9), 1289–1326.
- Rauter, S., Weiss, M., & Hoegl, M. (2018). Team learning from setbacks: A study in the context of start-up teams. *Journal of Organizational Behavior*, *39*(6), 783-795.
- Ricoeur, P. (1976). *Interpretation theory: Discourse and the surplus of meaning*. TCU press.
- Rodríguez-Sánchez, A. M., & Vera Perea, M. (2015). The secret of organisation success: a revision on organisational and team resilience. *International Journal of Emergency Services*, *4*(1), 27-36.
- Sarkar, M., & Fletcher, D. (2014). Psychological resilience in sport performers: a review of stressors and protective factors. *Journal of Sports Sciences*, *32*(15), 1419-1434.

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

- Schön, D. A. (1983). *The Reflective Practitioner*. New York: Basic Books.
- Schriber, S., Bauer, F., & King, D. R. (2019) Organisational Resilience in Acquisition Integration—Organisational Antecedents and Contingency Effects of Flexibility and Redundancy. *Applied Psychology: An International Review*, doi: 10.1111/apps.12199
- Sharma, S., & Sharma, S. K. (2016). Team resilience: scale development and validation: *Vision: The Journal of Business Perspective*, 20(1), 37-53.
- Shin, J., Taylor, M. S., & Seo, M. G. (2012). Resources for change: The relationships of organizational inducements and psychological resilience to employees' attitudes and behaviors toward organizational change. *Academy of Management Journal*, 55(3), 727-748.
- Sims, D. E., & Salas, E. (2007). When teams fail in organizations: What creates teamwork breakdowns? In J. Langan-Fox, C. L. Cooper, & R. J. Klimoski (Eds.), *Research companion to the dysfunctional workplace: Management challenges and symptoms*: 302-318. Northampton, MA: Elgar.
- Stake, R. E. (1995). *The art of case study research*. Sage.
- Staw, B.M., Sandelands, L.E. & Dutton, J.E. (1981). Threat rigidity effects in organizational behavior: a multilevel analysis. *Administrative Science Quarterly*, 26(4), 501–524.
- Stead, G. B., Perry, J. C., Munka, L. M., Bonnett, H. R., Shiban, A. P., & Care, E. (2012). Qualitative research in career development: Content analysis from 1990 to 2009. *International Journal for Educational and Vocational Guidance*, 12(2), 105-122.
- Stahl, G. K., Maznevski, M. L., Voigt, A. & Jonsen, K. (2010). Unraveling the effects of cultural diversity in teams: A meta-analysis of research on multicultural work groups. *Journal of International Business Studies*, 41(4), 690–709.
- Stephens, J. P., Heaphy, E. D., Carmeli, A., Spreitzer, G. M., & Dutton, J. E. (2013). Relationship quality and virtuousness: Emotional carrying capacity as a source of individual and team resilience. *The Journal of Applied Behavioral Science*, 49(1), 13-41.
- Stoverink, A. C., Kirkman, B. L., Mistry, S., & Rosen, B. (2018). Bouncing back together: Toward a theoretical model of work team resilience. *Academy of Management Review*, doi:10.5465/amr.2017.0005.
- Tarba, S. Y., Cooper, C. L., Ahammad, M. F., Khan, Z., & Rao-Nickolson, R. (2017). Special Issue—call for Papers: Resilience in organizations. *Applied Psychology: An International Review*, 66(1), 196-201.
- Tedeschi, R. G., & Kilmer, R. P. (2005). Assessing Strengths, Resilience, and Growth to Guide Clinical Interventions. *Professional Psychology: Research and Practice*, 36(3), 230-237.
- Tett, R. P., & Guterman, H. A. (2000). Situation trait relevance, trait expression, and cross-situational consistency: Testing a principle of trait activation. *Journal of Research in Personality*, 34(4), 397-423.

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

- Thomas, J. B., Clark, S. M., & Gioia, D. A. (1993). Strategic sensemaking and organizational performance: Linkages among scanning, interpretation, action, and outcomes. *Academy of Management Journal*, 36(2), 239–271.
- Townsend, A.M., DeMarie, S.M., & Hendrickson, A.R. (1998). Virtual teams: Technology and the workplace of the future. *Academy of Management Executive*, 12, 17-29.
- Tsoukas, H., & Chia, R. (2002). On organizational becoming: Rethinking organizational change. *Organization Science*, 13(5), 567-582.
- Tuckman, B. W. (1965). Developmental sequence in small groups. *Psychological bulletin*, 63(6), 384-399.
- Waldman, D. A., Carmeli, A., & Halevi, M. Y. (2011). Beyond the red tape: How victims of terrorism perceive and react to organizational responses to their suffering. *Journal of Organizational Behavior*, 32(7), 938-954.
- Webster, J. & Wong, W. K. P. (2008). Comparing traditional and virtual group forms: identity, communication and trust in naturally occurring project teams. *The International Journal of Human Resource Management*, 19(1), 41–62.
- Weick, K. (1969/1979). *The social psychology of organizing*. Reading, Addison-Wesley.
- Weick, K. E. (1988). Enacted sensemaking in crisis situations. *Journal of Management Studies*, 25(4), 305–317.
- Weick, K. E. 1993. The collapse of sensemaking in organizations: The Mann Gulch disaster. *Administrative Science Quarterly*, 38, 628-652.
- Weick, K. E. (1995). *Sensemaking in organizations*. Thousand Oaks, CA: Sage.
- Weick, K. E., Sutcliffe, K. M., & Obstfeld, D. (2005). Organizing and the process of sensemaking. *Organization Science*, 16(4), 409-421.
- Welch, C., Piekkari, R., Plakoyiannaki, E. & Paavilainen-Mäntymäki, E. (2010). Theorizing from case studies: Towards a pluralist future for international business research. *Journal of International Business Studies*, 42(5), 740-762.
- West, B. J., Patera, J. L., & Carsten, M. K. (2009). Team level positivity: investigating positive psychological capacities and team level outcomes. *Journal of Organizational Behavior*, 30(2), 249-267.
- Westley, F. R. (1990). Middle managers and strategy: Microdynamics of inclusion. *Strategic Management Journal*, 11(5), 337-351.
- Westman, M. (2001). Stress and strain crossover. *Human Relations*, 54, 557–591.
- Westphal, M., & Bonanno, G. A. (2007). Posttraumatic growth and resilience to trauma: Different sides of the same coin or different coins?. *Applied Psychology: An International Review*, 56(3), 417-427.
- Williams, T. A., & Shepherd, D. A. (2016). Building resilience or providing sustenance: Different paths of emergent ventures in the aftermath of the Haiti earthquake. *Academy of Management Journal*, 59(6), 2069-2102.

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

- Winwood, P. C., Colon, R., & McEwen, K. (2013). A practical measure of workplace resilience: Developing the resilience at work scale. *Journal of Occupational and Environmental Medicine*, *55*(10), 1205-1212.
- Zaccaro, S. J., Rittman, A. L., & Marks, M. A. (2001). Team leadership. *Leadership Quarterly*, *12*(4), 451-483.
- Zigurs, I. (2003). Leadership in Virtual Teams: Oxymoron or Opportunity?. *Organizational Dynamics*, *31*(4), 339–351.

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

Table 1: Sources, level, and purpose of empirical data for the study

| Source of empirical data   | Level           | Purpose  |
|--|-----------------|--|
| Seven-minute videos (six per team in 2014 and four per team in 2015)   | Team            | To assess team task performance.   |
| Reflective essays (six per participant in 2014 and four per participant in 2015)   | Individual      | To understand team internal dynamics.  |
| Final exams, essays (one per participant)  | Individual      | To gauge learning about working in teams.  |
| Team exit interviews (one per team, tape-recorded and transcribed)   | Team            | To gather additional information from teams and observe interaction between members. |
| Field observations (email correspondence, Facebook group, casual conversations, classroom interactions, and observations and targeted questions) | Individual/Team | To gather insider knowledge from team members and teams.                             |

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

Table 2: Team composition and task outcomes

| <b>Team name</b>      | <b>Cohort</b> | <b>Members<br/>(nationality/<br/>location)</b>   | <b>Task evaluation*</b> |
|-----------------------|---------------|--|-------------------------|
| <b>Ly's Team</b>      | 2014          | Ly (Vietnamese/focal site)<br>Frederic (French/focal site)<br>Maria (Finnish/focal site)<br>Anita (Latvian/ remote site)<br>Lena (German/remote site)          | 4-3-5-5-4-4             |
| <b>Peter's Team</b>   | 2014          | Peter (German, focal site)<br>Marc (Finnish, focal site)<br>Huy (Vietnamese, focal site)<br>Jia Li (Chinese, focal site)<br>Nila (Tadzik, remote site )        | 5-5-5-5-5-5             |
| <b>Nea's Team</b>     | 2014          | Nea (Finnish, focal site)<br>Sam (Finnish, focal site)<br>Yoshi (Japanese, focal site)<br>Gina (Nigerian, focal site)<br>Anna (Russian, remote site)           | 4-4-5-5-3-2             |
| <b>Aleksei's Team</b> | 2015          | Emil (Finnish, focal site)<br>Caroline (Dutch, focal site)<br>Cui (Chinese, focal site)<br>Alexis (Russian, remote site)<br>Ellen (Latvian, remote site)       | 4-5-5-5                 |
| <b>Jana's Team</b>    | 2015          | Jana (Rumanian, focal site)<br>Anja (Russian, focal site)<br>Harry (Finnish, focal site)<br>Elena (Latvian, remote site 1)<br>Lorena (Estonian, remote site 2) | 5-4-4-4                 |

\* The scale is between '0' and '5'. The 2014 cohort delivered six cases and the 2015 cohort four cases.

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

Table 3: Team social outcomes and observed resilience at the end of team life

| <b>Team name</b>      | <b>Team social outcomes</b>  | <b>Team resilience</b>   |
|-----------------------|--|--|
| <b>Ly's Team</b>      | Extreme dissatisfaction due to a serious interpersonal conflict between two team members       | Very low<br>(Team is about to break-up, the focal members refuse to meet each other face-to-face, the remote members are neutral)                                    |
| <b>Peter's Team</b>   | Extreme satisfaction with both work and member relations                                       | Very high<br>(Team members share a team identity and stand united against what they consider unreasonable demands from their leaders)                                |
| <b>Nea's Team</b>     | The more passive members are very satisfied, the more active are dissatisfied                  | Low<br>(Misalignment between team members: Nea and Yoshi are frustrated wanting the team to dissolve, Gina and Anna are satisfied, Sam is neutral)                   |
| <b>Aleksei's Team</b> | Extreme satisfaction   | Very high<br>(Members regret the team being dissolved)   |
| <b>Jana's Team</b>    | Satisfaction for the members in the focal site, confusion and seclusion for the remote members | Mixed: High for a sub-team only<br>(Jana, Harry and Anja, the focal members, form a strong team enthusiastic about working together, Lorena and Elena are sidelined) |

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220



Table 4: Examples of team member processing of mundane events

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

57

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

| Mundane event  | Examples of member reactions  | Underlying sensemaking and critical team level resources   | Consequences to the team  |
|--|---|--|---|
| A team member is unprepared  | <p><b>Jana's team:</b> Influential member (Jana) meets with her local colleague (Harry) and decides to do the remote members' part as they are late with task completion</p> <p><b>Aleksei's team:</b> A punctual member in charge of task coordination (Caroline) is disappointed when three members are not fully prepared for a meeting but decides to let go of her frustration. The online meeting is adjourned for 45 minutes to allow for these members to catch up</p>  | <p><b>No self-reflection.</b> 'Elena and Lorena (remote members) are lazy and irresponsible. Why could not they just follow agreements and instructions?'(Jana)</p> <p><b>Advanced self-reflection.</b> 'I am upset as I feel my time is not respected but things like this happen in teamwork—I let this pass' (Caroline)<br/>'I respect Caroline's efforts, in our team even bad behavior becomes positive' (Cui Yu)<br/>'Some of us were ill-prepared, time is tight, but in my team we can speak up... and take it from there' (Emil)</p>  | <p><b>Negative emotions—exclusion.</b> Jana is upset. Elena and Lorena are confused and feel excluded. A split between remote and local members forms</p> <p><b>Negative emotions become positive—inclusion.</b> The timely team member lets go of her frustration. The two ill-prepared members acknowledge the problem they caused and are grateful to the prepared member/team in general for being flexible. Mutual adjustment helps build the team</p>   |
| <p>A team member lacks competence in an expected technical skill</p> <p>A team member lacks competence in the team's shared language (English)</p> | <p><b>Nea's team:</b> Gina, the supposed IT expert in the team is not able to solve how to transfer the case to video format. The team spends six hours solving the problem. What happened is not discussed in the team</p> <p><b>Peter's team:</b> Junior members, Jia Li and Nila, lack basic technical skills and theoretical knowledge to execute teamwork. The senior members, Marc, Peter and Bao train and mentor them to lift up their competence level</p> <p><b>Ly's team:</b> Influential member (Ly) openly questions a colleague's (Frederic) legitimacy to be in the team due to what she considers his poor written English</p> <p><b>Aleksei's team:</b> Cui Yu has problems speaking English—working in writing is easier for her. The whole team agrees to shift the main team communication platform from Skype to Google Docs to accommodate Cui Yu</p> | <p><b>No self-reflection.</b> 'I failed my team. I am not as capable as I thought I was. IT is my background... how can I contribute if I am less good than the others?' (Gina)</p> <p><b>Advanced self-reflection.</b> 'With time, team efficacy goes up if everyone has the needed skills. Junior members' competence issues are a concern to the whole team' (Peter, Bao, Marc)</p> <p><b>No self-reflection.</b> 'Frederic is incompetent. Should he be in this team to begin with?' (Ly)</p> <p><b>Advanced self-reflection.</b> 'Cui Yu is making remarkable efforts and, has a good attitude and is learning quickly. Teamwork is harder for her than for the rest of us as she only recently arrived to Europe from China and has so much to learn'. (Cui Yu's team mates)</p> | <p><b>Negative emotions with no reassuring feedback from others—self-exclusion.</b> A member is embarrassed over failure to execute a task and becomes withdrawn</p> <p><b>Positive emotions—inclusion.</b> Team capability is strengthened thanks to senior members helping juniors step up their competence level</p> <p><b>Negative emotions—exclusion.</b> Friction and open conflict arises with open criticism and negative emotions. Team is weakened</p> <p><b>Positive emotions—inclusion.</b> The team as a whole being willing to sacrifice personal convenience for inclusion brings the members closer</p> |

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

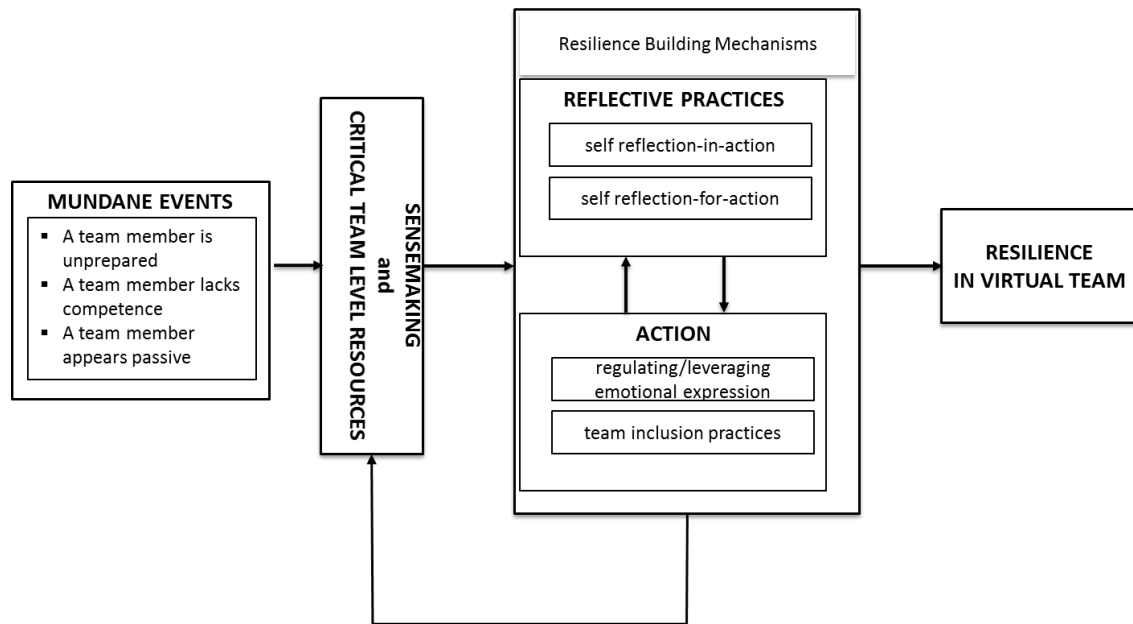
Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

|  |   |  |   |
|--|---|--|---|
| <p>A team member appears to be passive</p> | <p><b>Ly's team:</b> Ly gets impatient when others do not immediately answer her first message about how to kick-off work, and shortly sends another very direct push-message that annoys others</p> <p><b>Jana's team:</b> Jana posts questions on line regarding the case. Only Harry responds actively</p> <p><b>Peter's team:</b> Jia Li and Nila are passive in meetings and do not tend to speak up</p> | <p><b>No self-reflection.</b> 'There is no time to be wasted. The others are not taking this seriously—are they even in - or rather out?' (Ly)</p> <p>'Ly seems quite pushy and aggressive' (Frederic, Maria)</p> <p><b>No self-reflection.</b> 'The others are lazy and do nothing unless I push them and become bossy' (Jana)</p> <p><b>Advanced self-reflection.</b> 'I need to take a more passive role to give the others more space' (Peter)</p> | <p><b>Exclusion—negative emotions.</b> An assertive message is interpreted as rude, lack of response as unprofessional, and poor first impressions are made.</p> <p><b>Negative emotions.</b> Quick attribution of passiveness to laziness rather than insecurity or lack of direction causes friction</p> <p><b>Inclusion.</b> A senior member consciously taking a more passive role to give more space to the juniors and the juniors catching on brings the team together</p> |
|--|---|--|---|

Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220

Figure 1: A model of team resilience in a virtual team



Rights statement: This is the author's version of the article that has been accepted for publication in **Applied Psychology: An International Review** and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.

Please cite this article as: Degbey, W.Y. & Einola, K. (in press). Resilience in Virtual Teams: Developing the Capacity to Bounce Back, *Applied Psychology: An International Review*. doi: 10.1111/apps.12220