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Generative work relationships as a source of direct and indirect learning from experiences of failure: Implications for innovation agility and product innovation

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ABSTRACT

Organizations often experience failures when managing complex innovation projects. While experiences of failure can often lead to frustration and create a downward spiral, they are also a vital source for organizations to develop new knowledge and enhance innovation. This, however, depends on their capacity to learn from these experiences. Research indicates that organizations do not learn all they can from failures. This study implemented a micro-relational perspective and examines whether and why generative work relationships help facilitate both direct and indirect learning from experiences of failure and how these learning modes influence the innovation of small organizations. Multi-source data from 63 software firms in the ICT sector show that generative work relationships facilitate both modes of learning from failures. However, only learning from direct experiences of failure facilitates innovation agility, whereas vicarious learning from failure enhances product innovation (patent) outcomes. The implications for a micro-relational view of organizational learning and innovation are discussed.

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1. Introduction

Learning is a vital process that underlies organizational innovation and outcomes (Brown and Duguid, 1991; Helfat and Raubitschek, 2000; Hsu and Fang, 2009). A large body of research has expanded on the myriad of elements that influence the rate at which firms learn, such as the proficiency of individual workers, the ability of firm members to leverage knowledge accumulated by others, and the capacity for coordinated activity within the organization (Reagans et al., 2005). In particular, scholars advocating a relational perspective toward learning have suggested that learning occurs through interactions between individuals and groups in which experiences, views and ideas are shared and built upon to create new knowledge (Gherardi et al., 1998; Elkjaer, 2003; Uzzi and Lancaster, 2003). As a socio-behavioral process, learning is a key enabler of positive change and adaptation to developing environments (Kozlowski and Ilgen, 2006; Kozlowski & Bell, 2007).

However, learning can take different modes and forms. Research has documented various learning processes such as learning from direct experiences (internal) and learning from indirect experiences (external) (see Argote, 2014; Bresman, 2010; Bruneel et al., 2010). Yet what is missing in this literature is a study of internal and external learning processes as regards *specific foci*, such as learning from direct experiences of failure or success and indirect experiences of failure or success. Here, we focused on learning from experiences of failure (also referred to as learning from mistakes) which is has attracted growing interest among management scholars in recent years (Baum and Dahlin, 2007; Baumard and Starbuck, 2005; Sitkin, 1992). This interest has led to useful observations about learning from failures as a key to the creation of new firm patterns (e.g., Bingham and Haleblian, 2012), more crisis-prepared (Carmeli and Schaubroeck, 2008) and reliable systems (Roux-Dufort and Metais, 1999; Weick and Sutcliffe, 2007), and innovation (Anderson et al., 2014). However, despite these increasing efforts to unravel learning from failure in organizations, research indicates that "…organizations are not learning all they can from their failures" (Tucker and Edmondson, 2003, p. 68) and many are also unable learn efficiently from previous incidents (Cooke and Rohleder, 2006), or need to develop different mechansims to be able to learn from failure (see Desai, 2016).

This study contributes to the learning literature by examining *both* direct and indirect learning from experiences of failure. Most studies have dealt with direct experiences of failure (e.g., Antonacopoulou and Sheaffer, 2014; Carmeli, 2007; Carmeli and Schaubroeck, 2008; Tucker and Edmondson, 2003); a few have examined vicarious learning from failure (Baum and Dahlin, 2007; Bledow et al., forthcoming; Kim and Miner, 2007). Following recent research (e.g., Aranda et al., forthcoming; Kim and Rhee, 2017), we examine both learning modes simultaneously but also lay the groundwork for further theoretical elaborations by providing one of the first explorations of the claim that different learning modes may have different performance implications. This is theoretically important as scholars noted that "learning

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from failure is perhaps not as straightforward as some analyses have assumed" (Antonacopoulou & Sheaffer (2014, p. 6). The emerging research on learning as a socio-behavioral process centers on the relational foundations of learning processes at work. By implementing this conceptualization we aim to shed light on the most vital micro-relational conditions that facilitate both the direct and indirect modes of learning from experiences of failure, and their influence on organizational innovation (as manifested by both process and product innovation outcomes). This study also expands on the Theory of Positive Work Relationships (Dutton and Ragins, 2007). We suggest that studying the power of generative workplace relationships, which we conceptualize as a micro-relational mechanism, can help better delineate their impact on the two modes of learning from failure – direct (internal) and indirect (vicarious) – thereby enhancing organizational innovation. In so doing, our work sheds light on the generative mechanisms that may account for learning processes and innovation in organizations, thus contributing to a processual theoretical approach to the study of change and innovation (Van de Ven et al., 1989; Van de Ven and Poole, 1990; Van de Ven and Poole, 2005). More specifically, the findings enrich our knowledge of the micro-foundations of learning capabilities and define the implications of different modes of learning from failures for agile innovation processes and innovative outcomes. Finally, we attempt to explain how positive (generative relationships) and negative (experiences of failure) elements can help reinforce change and adaptation and drive organizational innovation. The conceptual model and hypotheses are summarized in Fig. 1.

This paper is organized as follows. In the second section, we provide the theoretical background and develop the research hypotheses and their rationale. In the third and fourth sections, we describe the method and findings. In the final section, we discuss the findings and their implications for theory and practice, followed by the limitations and potential research avenues.

2. Theory and research hypotheses

2.1. Generative workplace relationships

This study explored micro-relational mechanisms by examining generative work relationships among organizational members (Dutton and Ragins, 2007). By generative we refer to a force that "propels and motivates actions" (Dutton and Workman, 2011, p. 402) as it allows for the creation of an *optimal space* in which new vistas are opened up and resources are expanded on and cultivated (Carlsen and Dutton, 2011). The term generativity was coined by Erikson (1963, 1982) as part of his life-span theory of personality development. He argued that after resolving adulthood-related issues, the individual can turn his or her attention to guiding the next generation. Generativity (and its opposite, stagnation) constitute Erikson's 7th developmental stage which corresponds to the timeframe when an individual can nurture the next generation. More recently, psychologists suggested that "generative acts may take the form of creating, maintaining, or offering that which has been created or maintained to a community" (McAdams et al., 1998, p. 8; see also McAdams et al., 1993).

Organizational scholars have shown increasing interest in applying generativity to the workplace (e.g., Kleysen and Street, 2001). Positive organizational theorists have suggested that work relationships can be generative in nature in that they can transform the ways in which organizations and their members behave and act (Dutton and Heaphy, 2003; Dutton and Ragins, 2007; Stephens et al., 2013). Here we examined generative workplace relationships characterized by "strips of experience (in work relationships) that bring a feeling of energy and aliveness to people and also have the potential to produce more enduring expansive and transformative consequences" (Carlsen and Dutton, 2011, p. 15). Hence generative workplace relationships provide a powerful psychological space in which members can see different possibilities in new positive ways (Bushe, 2010) through a fuller grasp of their surroundings (Dutton and Carlsen, 2011).

Based on recent research on executive teams (Carmeli et al., 2016), we define generativity as the extent to which the *work relationships* within an organization provide members "with the opportunity to generate, learn and seek new things" (p. 5). We stress workplace relationships and focus on what these relationships *enable* members to do and achieve (see Dutton and Heaphy, 2003). Our approach conceives workplace relationships as a force "propelling and motivating actions" (Carlsen and Dutton, 2011; Dutton and Workman, 2011).

Organizations that are hampered by their inability to achieve a temporary consensus between members (Cyert and March, 1963) are often unable to develop generative environments, even if the top management attempts to create an enabling and supportive context (e.g., Joseph and Ocasio, 2012). Nevertheless, pockets of generative environments can still exist within organizations and groups in which people form generative work relationships that allow them to reap their potential even in times of crisis (e.g., Flynn et al., 1998; Krupar, 2012).

One example of the difference between generativity and stagnation can be found in a recent study by Thatchenkery and Firbida (2013). They analyzed the cleanup and closing of the nuclear weapons facility at Rocky Flats, Colorado at the end of the Cold War, which took place ahead of schedule and was under budget. During the Cold War, the employees formed a motivated and highly skilled workforce that was proud of their work which contributed to the safety of the nation. Once production was terminated, they faced the depressing task of dismounting the facility where many had worked for their entire lifetimes. The dark

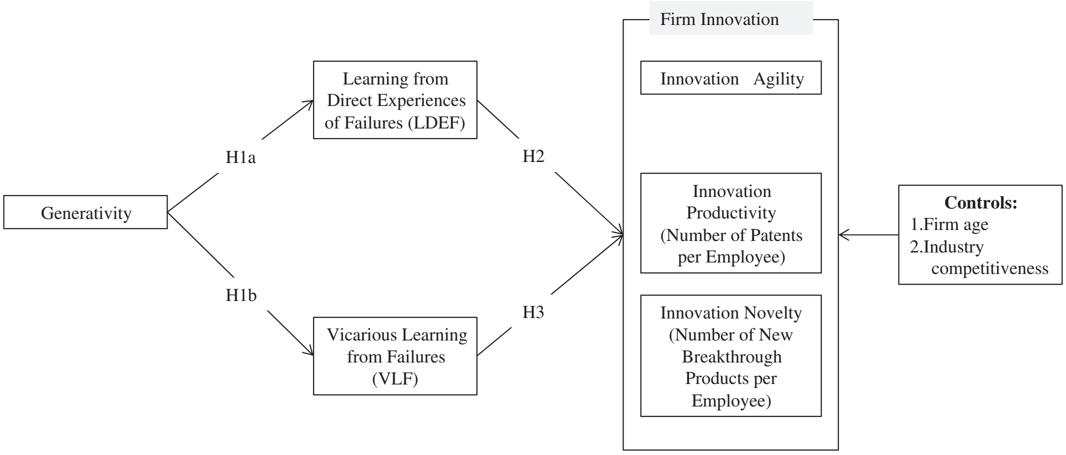
Firm Innovation
Learning from Direct Experiences of Failures (LDEF)
H1a
H2
Generativity
H1b
H3
Vicarious Learning from Failures (VLF)
Innovation Agility
Innovation Productivity (Number of Patents per Employee)
Innovation Novelty (Number of New Breakthrough Products per Employee)
Controls:
1.Firm age
2.Industry competitiveness

Fig. 1. The hypothesized relationships between generativity, modes of learning from failure, and firm innovation.

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