Understanding the impact of power on workplace innovation

A network analysis approach

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Workplace creativity and innovation are essential to organizations' performance since introducing novel ideas facilitates the navigation of dynamic markets and prevents organizational obsolescence, allowing for adaption and renewal (Gong, Zhou, & Chang, 2013). Creativity is often seen as the first step of innovation (Baer, 2012; Perry-Smith & Mannucci, 2017) as this construct refers to the *generation* of novel and useful ideas such as proposing new work methods, products, or services (Amabile, 1996; Oldham & Cummings, 1996) while innovation also encompasses their *implementation* (Baer, Evans, Oldham, & Boasso, 2015; Van de Ven, 1986; Van Knippenberg, 2017).

Individuals in organizations rarely innovate completely independently from other employees: they innovate with others or are influenced by the social environment in which they are embedded (Perry-Smith & Mannucci, 2017; Van Knippenberg, 2017). One crucial characteristic of social relationships in the workplace is power, which refers to the ability to control or influence another's thoughts, feelings, or behaviors (Fiske, 1993; French & Raven, 1959). Power influences individuals' psychological states and behaviors (Cho & Keltner, 2020; Galinsky, Chou, Halevy, & Van Kleef, 2012; Guinote, 2017), some of which have a bearing on creativity and innovation (Acar, Tarakci, & van Knippenberg, 2019; Amabile, 1996; Weinstein, Hodgins, & Ryan, 2010; Zhou & Hoever, 2014). It is therefore not surprising that power has been linked to creativity and innovation (Duguid & Goncalo, 2015, Galinsky, Magee, Gruenfeld, Whitson, & Liljenquist, 2008; Gervais, Guinote, Allen, & Slabu, 2013; Hildreth & Anderson, 2016; Ibarra, 1993; Keum & See, 2017; Sligte, de Dreu, & Nijstad, 2011).

Yet, understanding the influence of power on creativity and innovation is complex for at least three reasons. First, power has different facets. Power can be *formal* (often called "position power") in the sense that individuals can exert control over another employee's thoughts, feelings, or behaviors because of their role in the organization, as is often the case in a supervisor-subordinate relationship. Power can also be approached as a *perception* individuals have of their control over another's thoughts, feelings, or behaviors. In relationships such as work relationships, perceived power may or may not align with formal power and these facets can have different psychological and behavioral consequences (Bombari, Mast, & Bachmann, 2017; Mast, 2010). Second, there are other social attributes in the workplace such as friendships or the level of connectivity with other employees that can interact with power to affect creativity and innovation. The effects of power may be constrained or amplified, for example, because employees rely on other social cues, beside power, to guide their behaviors (Mischel, 1977; Rhodes, Shulman, & McClaran, 2020) or because these other social ties enable employees to access additional creativity-relevant resources. Third, unlike routinized work, both psychological states and behaviors are central to creativity and innovation: employees tend to require positive and activating states to be able to produce novel ideas and these ideas often require significant effort to move from the generation to the implementation stage as

they involve uncertainty (Amabile, Barsade, Mueller, & Staw, 2005; Baas, De Dreu, & Nijstad, 2008).

Despite the pervasiveness of power and the importance of innovation, we do not know enough about how power influences creativity and innovation. Prior work examining the relationship between position power and creativity has almost exclusively focused on the individual-level where power affects one's psychological states, leading to higher-levels of creativity (Duguid & Goncalo, 2015, Study 4; Gervais et al., 2013; Hildreth & Anderson, 2016, Study 1B and 4; Sligte et al., 2011, Experiment 1). In the only study linking position power and joint creativity – i.e., the creativity achieved by at least two actors together – Hildreth and Anderson (2016) compared teams in which all members had either equally high or equally low position power, focused on behaviors (neglecting psychological states), and found that teams in which all members have high power engaged in negative social interactions diminishing their creativity. This means that we know nothing of the impact of formal power asymmetries – i.e., relationships where one partner has a higher formal rank than the other, which are very common in the workplace – on joint creativity and innovation. We also know very little about psychological states that explain how power affect these performance outcomes. In addition, most work examining the effect of power on creativity has relied on lab experiments (for a review see Guinote, 2017). While the insights gained from these experimental studies are highly valuable, it is important to examine the effects of power on creativity and innovation in the workplace as employees are embedded in informal social structures that have a bearing on these types of performance (Baer et al., 2015; Perry-Smith & Mannucci, 2017) and, thus, can constrain or amplify the effects of power.

This dissertation addresses these gaps in three essays that will be summarized in the following subsections. When referring to these three essays I will use a plural pronoun to acknowledge the contributions of my co-authors in this research. In a nutshell, the first two essays examine the relationship between position power and *joint* creativity. For joint creativity, we focused on the creativity of dyads because this unit of analysis can enhance our understanding of the social side of creativity as any pattern of social interactions can be broken down into exchanges between two people (Krasikova & LeBreton, 2012; Reis, 2007). At the same time, there are recent calls for more research examining the creativity of dyads, which is perceived as a highly underexplored unit of analysis with great potential for workplace creativity (Bellis & Verganti, 2020; McGrath, 2015; Nijstad, Diehl, & Stroebe, 2003; Rouse, 2020). Across the three essays, we used two different methodologies that we considered appropriate to answer our distinct research questions: laboratory experiment and social network analysis. The former was used to test some of our theoretical mechanisms while addressing causality concerns. The latter was used to test our hypotheses in three different organizations in The Netherlands. Social network analysis is a widely used technique to analyze social relationships between employees as it captures the social structure in which employees are embedded and the type of relationships (e.g., affective or instrumental) they sustain (Baer et al., 2015; Burt,

Kilduff, & Tasselli, 2013; Perry-Smith & Mannucci, 2017). Furthermore, the examination of the interplay between employees' social networks and power facets offers important contributions to the social network literature as I will elaborate in the following subsections. Therefore, our work contributes to three bodies of literature: the literature on workplace creativity and innovation, the literature on power, and the literature on social networks.

1.2 OVERVIEW AND CONTRIBUTION OF THE DISSERTATION

A key motivation for the research done in this dissertation was to advance our knowledge on when and how power influences workplace creativity and innovation. We did so in three essays where we examined the effects of different facets of power and informal social network structures on creativity and innovation. In the first essay (Chapter 2), we developed a more nuanced view of the relationship between position power and joint creativity by exploring the role of a behavioral (i.e., power struggles, which refer to competition for formal and informal control) and a psychological (i.e., autonomous motivation, which refers to engaging in a task with a full sense of willingness, volition, and choice) attribute of collaborations. In the second essay (Chapter 3), we focused on the relationship between formal power asymmetries and joint creativity in the workplace by examining the interplay between power asymmetry (i.e., a formal social structure where one has higher formal power than the other) and Simmelian friendship ties (i.e., a type of informal social structure where two friends have a friend in common) on joint creativity. In the third essay (Chapter 4), we extend our research to a later stage of the creative process and to other power facets by examining the interplay between a brokering network position (i.e., an open network structure where individuals are tied to disconnected individuals) and perceived power over others.

1.2.1 Chapter 2 – Position Power and Joint Creativity: The Interplay Between Position Power and Power Struggles Unlocks Creative Collaborations

In Chapter 2, we investigated the effect of position power on joint creativity. Even though creativity in the workplace is often a collective endeavor (van Knippenberg & Hoever, 2017) and that position power is a pervasive feature of social organization in the workplace (Diefenbach & Sillince, 2011) work on this relationship is scarce (for a notable exception see Hildreth & Anderson, 2016). The pattern that does emerge from combining findings about creativity at the individual-level (Duguid & Goncalo, 2015, Study 4; Gervais et al., 2013; Hildreth & Anderson, 2016, Study 1B and 4; Sligte et al., 2011, Experiment 1) with the only study on the consequences of position power for joint creativity (Hildreth & Anderson, 2016, Study 1A) is the following: position power shapes cognitive and affective processes that bring about higher levels of creativity at the individual level (Duguid & Goncalo, 2015, Study 4; Gervais et al., 2013; Hildreth & Anderson, 2016, Study 1B and 4; Sligte et al., 2011, Experiment 1); yet, when working together, individuals

with high position power experience struggles that hurt their joint creativity (Hildreth & Anderson, 2016, Study 1A).

In contrast to this negative depiction of the relationship between position power and joint creativity, we hypothesized that power struggles interact with position power to affect joint creativity via autonomous motivation, a key antecedent of creativity. Specifically, we argued that while power struggles reduce autonomous motivation and hurt the joint creativity in collaborations among two people with high position power (hereafter "high position power collaborations"), they may energize people in collaborations where both members have low position power (hereafter "low position power collaborations") and increase their autonomous motivation. In addition, we investigated whether high position power collaborations in which power struggles are either low or do not occur achieve higher levels of joint creativity than low position power collaborations.

We tested our hypotheses in a laboratory experiment in which position power was manipulated and participants worked in same-gender dyads on a creativity task that involved writing a creative (i.e., a *novel* and *useful*) business plan for the company they worked for in the scenario (88 dyads: Low position power collaborations: $n = 30$; Moderate position power collaborations: $n = 31$, High position power collaborations: $n = 27$). We video-recorded the dyads working on the creativity task in order to code the power struggles. We found that power struggles hurt (benefit) the joint creativity of high (vs low) position power collaborations and that this relationship between position power in dyads and joint creativity is explained by autonomous motivation. Furthermore, our robustness checks showed that at low levels of power struggles, high position power collaborations achieve higher levels of joint creativity than low position power collaborations via autonomous motivation. No significant difference was found when comparing moderate position power collaborations to low or high position power collaborations suggesting that the reported effects are uniquely rooted in the social interactions that occur within either low or high position power collaborations.

This essay advances our understanding of position power's effect on joint creativity by simultaneously assessing behavioral and motivational attributes featured in collaborations. We shed light on the functionality of power struggles for joint creativity, which contrasts with the commonly held thesis that power struggles uniformly decrease joint performance (Greer, Van Bunderen, & Yu, 2017; Hildreth & Anderson, 2016). In addition, we contribute to a growing body of research examining the creative performance of dyads (Bellis & Verganti, 2020; Fliaster & Schloderer, 2010; McGrath, 2015; Rouse, 2020), which, to the best of our knowledge, has not yet considered the effect of position power.

1.2.2 Chapter 3 – The Benefits of Power Asymmetry on Dyadic Creative Performance: The Moderating Effect of Simmelian Friendship Ties

In Chapter 3, we investigated the interplay between *formal* and *informal* social structures on joint creativity, namely, formal power asymmetry and Simmelian friendship ties. While both types of social structures co-exist in the workplace, when explaining creative performance most research has focused on one or the other (Carnabuci & Diószegi, 2015; Keum & See, 2017; Sosa, 2011; Tortoriello, McEvily, & Krackhardt, 2015). This is problematic because the interplay between formal and informal social structures may lead to unexpected outcomes given the influence each type of social structure has on actors' access to resources, affect, and behaviors (McEvily et al., 2014; Perry-Smith & Mannucci, 2017).

We theorized that power asymmetric dyads achieve higher joint creativity than power symmetric dyads given the positive impact that power asymmetry has on conflict resolution (Greer & van Kleef, 2010) and positive affect in dyadic social interactions (Tiedens & Fragale, 2003; Tiedens, Unzueta, & Young, 2007), two key antecedents of creativity (Isen et al., 1985; Taggar, 2002). Furthermore, we argued that Simmelian friendship ties, a communal social structure that supports conflict resolution and induces positive affect, reduce the difference in joint creativity between the two types of dyads. On the one hand, we expect that Simmelian friendship ties boost the creativity of power symmetric dyads as these dyads tend to face more collaborative challenges than power asymmetric ones. On the other hand, we expect that Simmelian friendship ties diminish the creativity of power asymmetric dyads as these dyads may face conflicting social cues coming from communal and hierarchical social arrangements. We found support for our hypotheses in two intraorganizational network studies conducted in a biopharmaceutical company (Study 1: n = 458 dyadic relationships) and a market research organization (Study 2: n = 650 dyadic relationships). We measured creativity with well-established scales (George & Zhou, 2001; Sosa, 2011) that captured the process of generating creative ideas as self-reported (Study 1) and peer-reported and supervisor-reported evaluations (Study 2). Additional analyses showed that the moderating effects of Simmelian friendship ties were robust after controlling for other moderators that can facilitate cooperation and positive affect (i.e., network closure, tie strength, solely friends in common, and Simmelian *instrumental* ties). Furthermore, none of these alternative moderators explained variance in the relationship between power asymmetry and joint creativity providing some support to the theoretical mechanisms of Simmelian friendship ties: simultaneous conflict resolution and positive affect. However, contrary to our expectations, Simmelian friendship ties were beneficial not only for power symmetric dyads but also for power asymmetric ones.

This study makes three contributions. First, our insights into how formal power and Simmelian friendship ties interact to shape dyadic creative performance answer a relatively recent call to integrate formal and informal social structures to explain performance in the workplace (Hunter, Bentzen, & Taug, 2020; Maoret et al., 2020; McEvily et al., 2014). Second, we provide further evidence that the social environment is a key predictor of differences in the

creative performance of dyads, which is a promising, yet highly underexplored unit of analysis for creativity research (Zhou & Hoever, 2014). Finally, we contribute to the literature exploring the effects power has on creativity, which has mainly focused on individual creativity (Gervais et al., 2013; Sligte et al., 2011) or has contrasted the effect power has on joint creativity of groups composed of individuals with the same high level of power (Hildreth & Anderson, 2016).

1.2.3 Chapter 4 – Power and Individual Innovation: When Do Brokers Act on Their Structural Advantage?

In chapter 4, we adopt a contingency approach and examine the impact on individual innovation of the interplay between focal actors' perceived power over alters (i.e., the level of power they perceive to have over the people to whom they are connected in the workplace) and brokering network positions (i.e., an open network structure where individuals are tied to disconnected individuals). We argue that employees perceiving high power over alters achieve higher levels of innovation in brokering network positions than in closed network positions due to the global and flexible information processing and disinhibited behaviors associated with power, which help brokers to process heterogeneous information and overcome the action problem (e.g., difficulties brokers face to mobilize unconnected contacts) associated with brokering network positions (Carnabuci & Diószegi, 2015). In addition, we argued that employees perceiving low power over alters achieve higher levels of innovation in closed network positions than brokering network positions. With their even and narrowed information processing (Guinote, 2007a, 2017) these individuals may generate creative ideas via a focused exploration of a few perspectives in closed networks (Nijstad, De Dreu, Rietzschel, & Baas, 2010) whereas in brokering network positions this way of processing information can lead to a cognitive overload (Stea & Pedersen, 2017; Zhou et al., 2009). In addition, the feelings of dependency and inhibited behaviors typical of individuals feeling low power over alters are more useful in closed networks as they trigger cooperation from alters toward the implementation of creative ideas.

We tested our theory at a training and consulting organization ($n = 67$) where supervisors rated how often their employees engaged in innovation (i.e., the generation and implementation of creative ideas). In line with our expectations, we found that employees perceiving higher power over alters achieved higher innovation in brokering network positions than employees in these positions who perceived lower power over alters. However, we did not find individual innovation to differ according to employees' power perceptions in closed network positions.

Our theory and findings contribute to the network and power literatures. First, showing that the effect of brokerage on individual innovation is contingent on perception of power over alters contributes to the growing literature taking a contingency view of brokerage (Carnabuci & Diószegi, 2015; Soda et al., 2019; Stea & Pedersen, 2017). Whereas brokerage and power are often seen as one and the same in this literature (Burt, 2005; Kwon, Rondi, Levin, De Massis, & Brass, 2020), our study shows that they can vary independently from each other. Second, our work also contributes to the literature examining the relationship between power and network

cognition by providing evidence that individuals' perception about alters is an important factor explaining individual performance critical to organizations. While existing research has studied the effects of power on the extent to which individuals accurately perceive social relations between members of a social network (Simpson, Markovsky, & Steketee, 2011) and on the recognition of brokerage opportunities (Landis, Kilduff, Menges, & Kilduff, 2018), we are the first to investigate how the perception of others in combination with current network positions explain employee performance. Finally, we contribute to the literature on power. Prior research has mostly focused on the effects of power on early stages of innovation via experiments (Galinsky et al., 2008; Gervais et al., 2013; Hildreth & Anderson, 2016; Sligte et al., 2011). By focusing on later stages of innovation and using rich field data that covers the social network employees are embedded within, we show that power is contingently relevant to innovation in the workplace.