IT'S LIKE LOOKING IN A MIRROR, ONLY NOT: THE INFLUENCE OF ACQUIRER-TARGET SIMILARITY ON CORPORATE ACQUISITIONS

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ABSTRACT

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With the recent explosion of behavioral acquisition research, the collective knowledge in respect to acquisition behavior and outcomes has advanced tremendously. Despite these advancements, due to the rapid growth in this literature, various shortcomings have also developed. One such shortcoming is that the vast majority of this literature has examined acquisition influences emanating from the acquirer or the target but has rarely investigated the joint effects of these two entities. As such, in an attempt to contribute to the growing wealth of acquisition knowledge, the aim of this dissertation is to extend this research by examining how the degree of similarity between the acquirer and target can contribute to the outcomes of acquisition decisions. Specifically, this dissertation first investigates the implications for post-acquisition innovation due to pre-acquisition authority structure similarity, while also introducing and testing the arguments of Structural Adaptation Theory to the macro-organizational level and acquisition literature. Second, the influence of CEO regulatory fit between acquirer and target executives and the degree to which their respective orientations align with each manager's negotiation roles within an acquisition are argued to influence acquisition premium and market reactions. Collectively, these studies begin to illuminate the joint affects that acquirers and targets have on distinct acquisition outcomes.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

Over the last decade we have witnessed an eruption of behavioral acquisition research (Devers, Wuorinen, McNamara, Haleblian, Gee, & Kim, 2020), where a vast array of new constructs, methods, and findings have emerged to advance the collective knowledge that has been amassed on mergers and acquisitions (M&A). However, while we continue to push the boundaries of our knowledge, new questions continue to emerge from the existing research. The most relevant shortcoming that inspired this dissertation is that the extent behavioral acquisitions research has failed to account for interorganizational similarities or complementarities and the effects these considerations have on acquisition behavior and outcomes. Prior to the emergence of the behavioral offshoot of the acquisitions literature, studies had attempted to address the issue of acquisition fit or misfit. Specifically, that strategic and organizational fit between merging organizations was proposed to have an effect on post-acquisition performance (Jemison & Sitkin, 1986). Further examination of these propositions offered support for the strategic fit arguments (Shelton, 1988), but limited support for organizational fit (Datta, 1991). Despite these examinations, this area of the acquisitions literature is still exceedingly underexplored.

In an effort to contribute to the further examination of organizational fit between merging firms, this dissertation addresses two areas where the degree of similarity shared between the acquirer and target is expected to have distinct influences on the behaviors and outcomes of acquisitions. First, I focus on the authority structures within organizational management and how these pre-acquisition authority structures influence the effectiveness of firm innovation following the completion of an acquisition. Specifically, I draw from existing research at the firm level which has demonstrated that there are distinct stages within the innovation process and that the authority structures of organizations have a direct influence on the prioritization of certain stages

1

over others, which subsequently influence how firms innovate (Cardinal, 2001; Jansen, Van den Bosch, & Volberda, 2006; Keum & See, 2017). Taking this into account, I propose that firms establish a preferred method of innovation based on the authority structure of their organization and become accustomed to innovating in this way. As such, when firms merge or are acquired, if both firms share a similar authority structure, it is expected that they will have developed similar innovation capabilities and processes which are designed to succeed within a given authority structure, thus, they will have little trouble continuing to innovate in the manner in which they have become accustomed. However, if merging firms do not have similar authority structures, adjustments to their innovation efforts will be necessary, which, in turn, will likely hinder innovation productivity. I also propose that there are asymmetric adaptation effects (some adaptations are more difficult than others) which influence the innovation productivity of firms when adaptation is necessary, drawing off of structural adaptation theory (Hollenbeck, Ellis, Humphrey, Garza, and Ilgen, 2011).

Finally, in this chapter I also propose that different forms of knowledge commonality can differentially moderate the proposed relationships. Specifically, I propose that shared firm specific knowledge, as represented by the existence of a prior alliance between the acquirer and target can effectively begin to level the playing field, allowing dissimilarly structured firms to better adapt to one another following an acquisition. Alternatively, I propose that similar knowledge, such as technology domain similarity in their innovations, serves as a common knowledge base to link non-redundant information, but offers little to assuage the negative costs of dissimilar authority structures, increasing the effects similar authority structures has on innovation productivity.

In my second chapter I develop hypotheses and theory around the regulatory fit of both the acquiring and target CEOs. I propose that CEO regulatory fit between acquirer and target executives and the degree to which their respective orientations align with their negotiation roles within an acquisition will influence acquisition outcomes. Psychological examination of CEOs is relatively new to the acquisition literature, being limited to a small number of studies. One example is Gamache, McNamara, Mannor, and Johnson (2015) which examines the regulatory focus of acquiring managers and the influence these orientations have on acquisition behavior. The authors found that promotion orientation led to greater acquisition proclivity, while prevention orientation reduces acquisition proclivity. I aim to build from these findings by introducing logic for regulatory fit that has been demonstrated in the negotiation literature at the micro organizational level. Specifically, I propose the degree of fit managers experience with their role and with one another, based on their regulatory orientations will influence the terms, processes, and eventual outcomes of an acquisition. To examine this, I will investigate the interactive effects of acquiring and target CEO promotion and prevention orientations and their effects on acquisition premia and market reactions.

Taken together, my hope is that these two chapters will begin to shine light on an area of acquisitions research which has thus far been largely unaccounted for. These studies should serve as the basis for further research within the acquisitions literature from which to ascertain the full range of joint effects that the degree of acquirer and target similarity can have on acquisition behavior and outcomes. The remainder of this dissertation is organized as follows: first, I will explore the effects of acquirer and target authority structures in Chapter 1, titled The Effects of Authority Structure Similarity, Structural Adaptation, and Knowledge Commonality on Post-Acquisition Innovation. The second chapter will investigate the regulatory fit CEOs experience

in an acquisition, with the title of the chapter being It Takes Two to Make a Deal Go Right: CEO

Regulatory Fit Within Acquisitions.

REFERENCES

5

REFERENCES

Cardinal, L. B. (2001). Technological innovation in the pharmaceutical industry: The use of organizational control in managing research and development. *Organization science*, *12*(1), 19-36.

Datta, D. K. (1991). Organizational fit and acquisition performance: Effects of post-acquisition integration. *Strategic management journal*, *12*(4), 281-297.

Devers, C. E., Wuorinen, S., McNamara, G., Haleblian, J., Gee, I. H., & Kim, J. (2020). An integrative review of the emerging behavioral acquisition literature: Charting the next decade of research. *Academy of Management Annals*, *14*(2), 869-907.

Gamache, D. L., McNamara, G., Mannor, M. J., & Johnson, R. E. (2015). Motivated to acquire? The impact of CEO regulatory focus on firm acquisitions. *Academy of Management Journal*, *58*(4), 1261-1282.

Hollenbeck, J. R., Ellis, A. P., Humphrey, S. E., Garza, A. S., & Ilgen, D. R. (2011). Asymmetry in structural adaptation: The differential impact of centralizing versus decentralizing team decision-making structures. *Organizational Behavior and Human Decision Processes*, *114*(1), 64-74.

Jansen, J. J., Van Den Bosch, F. A., & Volberda, H. W. (2006). Exploratory innovation, exploitative innovation, and performance: Effects of organizational antecedents and environmental moderators. *Management science*, *52*(11), 1661-1674.

Jemison, D. B., & Sitkin, S. B. (1986). Corporate acquisitions: A process perspective. *Academy of management review*, *11*(1), 145-163.

Keum, D. D., & See, K. E. (2017). The influence of hierarchy on idea generation and selection in the innovation process. *Organization Science*, *28*(4), 653-669.

Shelton, L. M. (1988). Strategic business fits and corporate acquisition: Empirical evidence. *Strategic management journal*, *9*(3), 279-287.

CHAPTER 1

INTRODUCTION

Though risky, acquisitions represent an expeditious means to provide growth and extension to the scope and scale of corporations (Brouthers & Dikova, 2010). Furthermore, technology acquisitions (the acquisition of innovative firms from high-tech industries) can also provide an external path for firms looking to increase their innovative outputs without the need to devote considerable time and resources to developing innovative capabilities internally (Ahuja & Katila, 2001). As such, technology acquisitions provide an appealing option for firms looking to expand while increasing their innovative production simultaneously. Although acquisitions can provide these benefits faster than organic growth (Brouthers & Dikova, 2010), these strategic decisions are fraught with obstacles that can reduce the effectiveness, efficiency, and productivity of the combined entity if obstacles are not identified in due diligence and properly addressed or avoided from the onset (Graebner, Eisenhardt, & Roundy, 2010). These various obstacles contribute to the long line of evidence suggesting that, on average, acquisitions result in the erosion of value for acquirers (Haleblian, Devers, McNamara, Carpenter, & Davison, 2009). The risk involved in acquisitions are further enhanced in the case of technology acquisitions, as choices in the integration phase have been shown to have significant trade-off effects for the post-acquisition organization (Capron, 1999; Capron, Mitchell, & Swaminathan, 2001; Graebner, 2004; Puranam, Singh, & Zollo, 2003; Ranft & Lord, 2002). Despite these obstacles, the allure of technology acquisitions has been steadfast due to the benefits that can emerge from a successful execution.

Several empirical and qualitative studies have suggested that decisions taking place during the post-acquisition integration phase are some of the more tenuous, as poor management

7

of the integration of units or firm mismatch can significantly reduce their value. For instance, studies have identified the mismatch of firms in terms of culture (Chatterjee, Lubatkin, Schweiger, & Weber, 1992; Huang, Zhu, & Brass, 2017), strategic complementarity (Makri, Hitt, & Lane, 2010), and resource redundancies (Capron, 1999; Capron et al., 2001) as leading to a reduction in acquisition value. This is especially true for units that specialize in creative and innovative outputs (Graebner, Eisenhardt, & Roundy, 2010). However, in terms of technology acquisitions where innovation productivity is often a focal goal, an even more fundamental consideration has thus far gone without proper investigation. The authority structure of organizations, or the centralization of decision making authority, has been shown to exert great influence over innovation within organizations (Cardinal, 2001; Jansen, Van den Bosch, & Volberda, 2006; Keum & See, 2017).

The degree of authority structure centralization is simply how dispersed the decision-making authority is for the organization as a whole, or for specific functions within the organization (Hage & Aiken, 1967; Mansfield, 1973; Zannetos, 1965). For instance, a centralized authority structure would have decision making authority limited to a small number of individuals or a single individual. Alternatively, a decentralized authority structure disperses decision making authority amongst a wide set of individuals. Based on these definitions research on the influence of authority structures on the innovative output of firms has generated an inconsistent and complex set of conclusions. For instance, studies that have examined the relationship between authority centralization and innovation output have reported both positive relationships (Cardinal, 2001; Grover, Purvis, & Segars, 2007) and negative relationships (Germain, 1996; Jansen, Van den Bosch, & Volberda, 2006), however most studies have reported a non-significant relationship (Delaney, Jarley, & Fiorito, 1996; Liao, 2007; Nohria &

8

Gulati, 1996). One potential explanation for the disparity in these findings is whether the creative

employees and managers perceive their authority structure to be coercive or enabling in terms of

their innovative efforts. Working from this distinction, Keum and See (2017) extended the

investigation, helping to address this inconsistency. They proposed that authority structures of

organizations can heavily influence the effectiveness of distinct stages of the creative and

innovation processes. Specifically, they demonstrated that a hierarchical authority structure is

detrimental to idea generation but beneficial for idea selection; two distinct stages of the

innovation process. Keum and See (2017) points out an important aspect of innovation, in that

the decisions regarding authority structure of an organization may be more or less conducive to

successful outcomes in different stages of the innovation process, yet each can be equally

successful in producing innovations. As such, it is suspected that firms will generally develop

their innovative processes and efforts to reflect the authority structure that they operate under to

facilitate this success in specific stages of the innovation process.

Applying this insight to the context of technology acquisitions, it becomes apparent that

the examination of authority structure similarity between acquirers and targets is of interest.

Since it has been demonstrated that authority structure centralization has important

considerations for the processes by which firms innovate, if merging firms have dissimilar

authority structures, then it becomes likely that some sort of adaptation to an unfamiliar authority

structure will occur in order for the merging units to coexist and to enable the acquiring firm to

capture the anticipated value from the acquisition. This adaptation is expected to have

implications for the manner and efficiency by which the adapting firm innovates (Hollenbeck,

Ellis, Humphrey, Garza, & Ilgen, 2011). Thus, the question emerges: in technology acquisitions,

how does the similarity or dissimilarity in authority structures between merging organizations

impact the productivity of firm innovation in post-acquisition periods? Further, it is also of interest to examine whether adaptation from one authority structure to another is more or less conducive to future innovation than adaptation in the opposite direction.

To examine these questions, I draw on Structural Adaptation Theory (SAT), which has been developed at the team level of the organizational behavior literature to explain performance differences observed in teams transitioning from one type of structure to another. For instance, asymmetric adaptations have been observed in teams transitioning between different task allocation structures (Moon, Hollenbeck, Humphrey, Ilgen, West, Ellis, & Porter, 2004), reward structures (Johnson, Hollenbeck, Humphrey, Ilgen, Jundt, & Meyer, 2006), and authority structures (Hollenbeck et al., 2011). Specific to authority structure adaptations, Hollenbeck and colleagues (2011) found that transitions to alternative authority structures are detrimental to performance in general, however, transitioning from a decentralized to centralized authority structure is more detrimental than the inverse. Despite the insights gained from the examination of this theory, these studies look through a micro lens while investigating effects in laboratory settings or operational teams where there is significantly less risk and pressure on the subjects' decisions compared to macro-organizational decisions, which raises the question of whether these effects might also translate to macro-organizational outcomes. Specific to my study in the context of technology acquisitions, I examine how authority structure similarity or dissimilarity influences innovative outcomes following acquisitions. Thus, both the SAT and behavioral acquisition literatures benefit from the application of this theory at the macro level within the context of technology acquisitions.

I investigate all North American technology acquisitions from the year 2000 to 2015. I examine how the degree of similarity in organizational authority structures between the acquiring

and target organizations influences subsequent innovation productivity. I push this line of inquiry further, exploring moderating and boundary conditions of the invoked theory. First, I examine whether adaptation to a more centralized authority structure is more or less conducive to future innovation than adaptation to a less centralized authority structure; establishing whether asymmetric adaptation occurs at the macro-organizational level. Second, I investigate whether the degree of shared or similar knowledge commonality creates boundary conditions that moderate the hypothesized relationships. To explore these conditions, I estimate the moderating effects of the hypothesized relationship due to the existence of a prior alliance relationship between the acquirer and target, and the degree of technological domain overlap between the merging firms. The findings of my investigation provide mixed support for my formal hypotheses, however, the study still contributes to advancing our understanding of technology acquisitions.

First, this study contributes to research on technology acquisitions by demonstrating that the similarity of organizational authority structures between the acquiring and target firms is an important consideration for firms aiming to augment their innovative production. Prior research has demonstrated that disruptions or changes in the organizational environment can be detrimental to creativity (Amabile & Conti, 1999; Chua, 2013), which is a critical element of innovation (Amabile, 1988; Anderson, Potočnik, & Zhou, 2014). In the case of an acquisition, it is more likely that the creative processes will be subjected to disruption due to the changes occurring within the organization and necessary adaptations in order to integrate with another firm (Paruchari, Nerkar, & Hambrick, 2006).

This study also contributes to Structural Adaptation Theory by bringing the theory up to the macro-organizational level and testing it using archival data. Structural Adaptation Theory

has traditionally been applied and tested at the micro level, examining how individuals and teams adapt to experimental changes in their structural environment (Hollenbeck et al., 2011; Johnson et al., 2006; Moon et al., 2004). The presented study applies Structural Adaptation Theory at the macro level where the stakes are inherently higher, examining how entire organizational units adapt to a change in their authority structure after being acquired; and more importantly, how these adaptations affect the value of the acquisition for the acquirers. Further, Structural Adaptation Theory has predominantly been tested within a laboratory, and although laboratory testing is generalizable outside of the lab, extending this inquiry to macro-organizational contexts contributes to further strengthen the validity of the theory.

THEORY AND HYPOTHESES

Authority structure similarity

Technology acquisitions are a means by which organizations aim to improve their innovative output and processes. For example, research has suggested that technology acquisitions are pursued to improve the quality of innovation outcomes (Makri et al., 2010), knowledge acquisition (Ahuja & Katila, 2001), or for the acquisition of specific product technologies or innovation capabilities (Puranam et al., 2003; Ranft & Lord, 2002). Within this literature, there has been wide variation in terms of the effectiveness of technology acquisitions in addressing these needs. Puranam, Singh, and Zollo (2003) suggest that one potential explanation for this variation is that there are conflicting goals that have thus far gone unexamined, which often result in tradeoff scenarios. In their study, they highlight the conflicting goals of acquiring capabilities to establish long term benefits versus acquiring specific product technologies to facilitate a quick product market entry. However, this is just one set of

12

potentially conflicting goals that organizations must manage while making strategic acquisition decisions.

Another segment of the technology acquisition literature has examined the performance implications for the decision to and degree of integration that occurs following an acquisition. This issue, widely referred to as the integration-autonomy dilemma (Graebner, Eisenhardt, & Roundy, 2010), has produced a plethora of evidence suggesting that integration decisions play an integral role in determining the success of technology acquisitions. Studies have found that full integration holds the greatest potential for acquiring firms to reap the benefits of an acquisition, however, mismanagement of an integration can destroy value (Graebner, 2004; Larsson & Finkelstein, 1999). Graebner (2004) attributed these performance differences to a loss of knowledge resources and organizational momentum that occurs when target managers are not aligned in the acquisition. Further, identifying another tradeoff scenario, Ranft and Lord (2002) suggest that a major tradeoff in the integration-autonomy dilemma is that autonomy helps in the preservation of target firm tacit knowledge, however, it also inhibits the transferability of the technologies or capabilities that are based upon that knowledge. As such, organizations must decide what their ultimate goal is for technology acquisitions in order to facilitate the outcome they are looking for, making it exceedingly unlikely that a firm will be able to capture all facets of value within a technology acquisition.

These tradeoff decisions are relative to the authority structure of the organization as it is logical that firms will have integration preferences based upon their existing authority structure. For instance, firms that have prioritized a centralized authority structure within their organization should be naturally predisposed to pursue more complete integrations for the units they acquire through acquisitions in order to maintain their hierarchy of authority. Conversely, organizations

13

that prioritize decentralized authority structures may be less inclined to fully integrate acquired units, allowing for more autonomy of authority. Given these expected differences, it is important to consider whether there are integration decision implications based upon whether target units will be transitioning to a more or less centralized authority structure than they are accustomed to, following technology acquisitions.

Centralized authority structures condense decision-making authority into a smaller number of individuals whereas decentralized structures have more dispersed decision-making, lending authority to a wider group of decision makers over their respective areas (Hage & Aiken, 1967; Mansfield, 1973; Zannetos, 1965). This distinction has important implications for the innovation process as the organizational decision for how to delegate decision making power can influence the creative processes of innovation. For instance, it has been shown that different authority structures are more or less conducive to distinct stages of the innovation process. Knudsen and Levinthal (2007) proposed a perspective that focuses on distinct stages of the innovation process. Their study proposed that decentralized structures are beneficial for search processes whereas centralized structures are more beneficial for selection processes. Keum and See (2017) support this distinction in their two-part study using a survey sample in combination with a field study in the fashion industry, finding that centralization of authority was detrimental to idea generation processes, but beneficial for idea selection. Collectively, these studies demonstrate that different authority structures are linked to strategies that aim to facilitate success in distinct stages of the innovation process. However, as these are both critical stages of the innovation process, successful innovation output is not possible without each stage. Although firms may be better equipped to thrive in one stage versus the other, these differences are not expected to result in superior innovation productivity on their own, only that different firms

choose to leverage different structures and develop innovation processes that work best within those structures. Supporting this notion, it does not appear that either authority structure of organizations is more conducive to innovation productivity as prior research has demonstrated a slew of mixed or null results for the relationship between authority structure and innovation productivity (Cardinal, 2001; Delaney et al., 1996; Germain, 1996; Grover et al., 2007; Jansen et al., 2006; Liao, 2007; Nohria & Gulati, 1996).

As firms develop innovation processes to succeed within the authority structures they exist within, it is expected that firms and innovators become accustomed to innovating in a particular way and will struggle to maintain their level of productivity if asked to transition or adapt to an unfamiliar structure or process. Extending this logic to technology acquisitions, target firms may have difficulty adapting to an acquirer that utilizes an alternative authority structure to facilitate these goals. Thus, the argument is that technology firms looking to merge or acquire will be rewarded with superior innovation productivity if adaptation to a new structure is unnecessary. To aid in the explanation of difficulties that may emerge when adaptation is necessitated, I draw on Structural Adaptation Theory applied in the context of post-acquisition organizations.

At its core, Structural Adaptation Theory proposes that the adaptation to an alternative structure can have detrimental effects on performance outcomes. For example, this reduction in performance was found to occur due to several distinct organizational forms at the micro-organizational level, such as task allocation structures (Moon et al., 2004), reward structures (Johnson et al., 2006), and authority structures (Hollenbeck et al., 2011). Collectively, the findings of these studies point to a loss of efficiency and effectiveness when organizational members are pushed to adapt to unfamiliar organizational structures. Most relevant to the

15

inquiries of my study, Hollenbeck and colleagues (2011) demonstrated that individuals and teams performed best across time when they were subjected to a consistent authority structure that influenced the process by which they completed their tasks. However, when individuals and teams were required to complete the same tasks while adapting to an alternative authority structure not used in previous iterations, the overall task performance suffered.

As was demonstrated in individuals and teams, it is expected that structural adaptation at the macro-organizational level will also result in performance losses due to the procedural costs of the adaptation. Applying this logic to the context of technology acquisitions, authority structure adaptation is expected to erode anticipated and sought-after innovation benefits. This is likely to occur because firms develop distinct innovation processes that are designed to perform well in their given environment, however, when this environment changes, the innovation processes will no longer be optimally suited for success. As such, instances where it becomes necessary for a firm to adapt to a more or less centralized authority structure is also expected to alter the effectiveness of the processes (Hollenbeck et al., 2011) by which firms have become accustomed to innovating. For example, units that are accustomed to decentralized authority structures will be less effective at innovating under a centralized authority structure as these units will not be accustomed to catering their idea generation towards ideas more likely to be selected by the central innovation authority in their new parent organization. The pursuit of this adaptation will generally result in innovative units becoming less efficient as they will need to learn how to innovate under these new circumstances. Alternatively, units accustomed to centralized authority structures will be less effective at innovating under a more decentralized authority structure as they will be missing the structure that guided their innovation. Thus, rather than developing innovations more likely to be selected by a higher authority, these units will lose

16

efficiency due to a need to develop the capability of selecting promising innovation ideas to pursue on their own. In either case, because innovating units prescribe to processes designed to thrive within the authority structure they previously existed within, altering the authoritative environment results in a mismatch between the processes and capabilities of the unit and the demands of the new authority structure, resulting in the loss of productivity while firms learn to adapt. However, a structural match between a target and acquirer will be more conducive to capturing higher proportions of technological innovation value following an acquisition as target firms will already be accustomed to operating under similar authority structures, allowing units to avoid the costs of adapting their innovation processes to fit a new authority structure.

H1: Authority structure similarity will be positively related to post-acquisition innovation productivity in technology acquisitions.

Asymmetric adaptation

While adapting to a new structure is expected to reduce efficiency and effectiveness, there are some adaptations that are tougher to navigate than others. As exhibited in the structural adaptation literature, there is often asymmetric adaptability when transitioning between structures. One of the first studies to demonstrate this phenomenon in the teams literature was Moon and colleagues (2004), revealing that it was more difficult for team members to transition from a divisional structure to a functional structure than it was for team members to adapt from a functional structure to a divisional structure. Johnson and colleagues (2006) reinforced this notion, observing that it was more difficult for teams that had historically operated using a competitive reward structure to adjust to operating under a cooperative reward structure than vice versa. Finally, and most notable to the motivation of my study, asymmetric adaptability was once again demonstrated in authority structures, where decentralized teams struggled more to

17

adapt to centralized authority structures than centralized teams when asked to adapt to a decentralized structure (Hollenbeck et al., 2011).

Tying these studies and findings together is the underlying mechanism for why these asymmetric adaptations are expected to occur. Specifically, each of these asymmetric adaptations appear to be driven by the degree of coupling or coordination required by each type of structure and demanded when units are asked to adapt from one structure to another. In these studies, it is argued that there are structures that require a greater degree of coupling and coordination to be successful versus other structures which permit units or individuals to operate with more autonomy to be successful (Orton & Weick, 1990; Weick, 1976). Functional structures, cooperative reward structures, and centralized authority structures are those that demand greater levels of coordination in order to succeed (Hollenbeck et al., 2011; Johnson et al., 2006; Moon et al., 2004). Thus, it is more demanding when units are asked to adapt to structures that require greater degrees of coupling or coordination when they are adjusted to working with more autonomy compared to asking units to adapt to more autonomy.

In addition to the arguments for the degree of coordination as a mechanism explaining why and what direction asymmetric adaptation is expected to occur in, prior authority structure research, in the context of innovation, offers another potential mechanism that points in the same direction, supporting the coordination arguments. As Keum and See (2017) suggested, the attribution made by the employees to the authority structure, as either coercive or enabling, could determine the degree to which performance is eroded. Applying this logic to the case of technology acquisitions between firms with dissimilar authority structures, it is expected that target firms that have developed innovation processes under decentralized authority systems will be more likely to attribute coercion to their adaption to a more centralized structure due to the

reduction in independence (Keum & See, 2017; Lempiälä & Vanharanta, 2018). Alternatively, target firms that have developed innovative processes under centralized authority structures are more likely to feel enabled when adapting to a more decentralized authority structure due to an increasing level of independence. So, although units in both scenarios will need to develop new innovative processes, due to the creative nature of innovation, innovators should experience less production loss while gaining autonomy from moving to a more decentralized authority structure.

As creativity is the driving force that facilitates innovation, changes in the degree of creative freedom experienced by innovators plays a pivotal role in this relationship (Lempiälä & Vanharanta, 2018). As such, decentralized organizations, which have been shown to produce a wider breadth innovation stemming from a focus on idea generation (Leiponen & Helfat, 2011), may feel stifled when integrated within a centralized authority structure. This transition introduces increased levels of internal competition due to a focus on idea selection, a process which places more pressure on innovating units to provide justification for their projects and fit within the innovative schema that has developed within the acquiring organization (Argyres & Silverman, 2004). Alternatively, although centralized targets will also suffer the growing pains associated with adapting to a new authority structure, these pains may be less severe. While adapting to a decentralized authority structure, formerly centralized innovating units may experience a creative liberation but will need to develop idea selection capabilities of their own due to their decrease in oversight. At a more basic level, transitions to centralized authority structures place more restrictions on innovating units due to a reduced emphasis on idea generation and increased need for units to conform to the acquirer. However, transitions to decentralized authority structures are more liberating, but require the units to learn how to

prioritize and select high impact or promising ideas with little oversight. Therefore, in terms of innovative output, it is expected that transitioning to more centralized authority structures will be more detrimental to performance due to the introduction of structural restrictions which is likely to elicit feelings of coercion as opposed to feeling enabled to innovate.

> *H2: Of technology acquisitions between firms with dissimilar authority structures, deals where the targets are transitioning from a decentralized structure to a centralized structure will experience a greater reduction in innovation productivity than targets transitioning from a centralized structure to a decentralized structure.*

Prior alliances and technology domain overlap

In addition to asymmetric adaptation when the authority structures of merging firms are dissimilar, I also propose that prior alliances and technological domain overlap shared between merging firms will moderate the relationship between authority structure similarity and innovation productivity. Prior alliances can provide firm specific information (Porrini, 2004), serving to balance the scales for firms that acquire technology firms which innovate using alternative processes. The existence of a prior alliance between the acquirer and target gives each firm shared experiences from which to draw upon when preparing for post-acquisition actions and innovation. Meanwhile, technological domain overlap can provide merging firms with a common knowledge base from which they can access other knowledge within each firm (Choi & McNamara, 2018), which is expected to amplify the effects of authority structure similarity.

Prior alliances

One of the most influential sources of value erosion for firms that acquire dissimilar targets exists in a lack of understanding of their target. This is especially true in the case of

complex technological acquisitions where the most prominent sources of value are tacit knowledge (Nonaka, 1994) and the processes used to generate new innovations (Garud, Tuertshcer, Van de Ven, 2013). If acquirers are unsure or unaware of how the target firm derives its value, then the probability increases that decisions made for the integration of the target firm will destroy that value. Thus, it becomes critically important for firms that have different authority structures and have developed their innovation processes in different ways to have or collect information which may allow them to make better post acquisition decisions as a unified organization. Firm specific information between innovating firms provides context and understanding to merging firms, helping to render any structural differences less detrimental to post acquisition innovation efforts.

Information is critical to the success of any strategic decision but is especially critical in the case of acquisitions, where an immense portion of the acquiring firm's available capital is put to risk. As such, first-hand knowledge of the inner workings of a potential target could play a pivotal role in reversing any negative effects due to dissimilar authority structures as any firm-specific information or familiarity would allow acquirers to better plan for post-acquisition integration. For instance, prior research has suggested that acquiring firms may benefit from familiarity with the target firm by way of technological alliances or investment relationships prior to pursuing a technology acquisition (Graebner, Eisenhardt, & Roundy, 2010). This familiarity with the target unit can provide managers with specific knowledge regarding the target firm, leading managers to feel more confident that they will be able to capture the value in an acquisition. In fact, studies have demonstrated that the quality of relationships formed in prior alliances result in greater acquisition likelihood (Yang, Lin, & Peng, 2011) and that acquirers are more likely to finance the acquisition with cash as opposed to stock (Reuer & Raggazino, 2008);

which is a signal of a greater degree of confidence in the ability of the deal to be value creating (Devers, McNamara, Haleblian, & Yoder, 2013). As such, intimate familiarity with the target has been evidenced to manifest in managerial confidence in acquisitions emanating from firm specific knowledge.

Although managers may exhibit behavior that signals confidence in a deal due to familiarity, the critical component is that these shared experiences facilitate the anticipated performance benefits; in this case, allowing managers to successfully manage the acquisition and integration decisions for a dissimilarly structured innovating unit. Technology driven alliances generally require that acquirers have or gather intricate information regarding the processes by which the target firm innovates and what type of innovation knowledge is contained within the firm. Furthermore, having had shared experiences, each firm will have had the opportunity to develop a rapport and establish effective methods of communication (Agarwal, Croson, & Mahoney, 2010). This first-hand information from prior alliances gives firms an intimate understanding of one another and will enable acquirers to make the better integration decisions to establish a new normal for the target unit more quickly and without eliciting any feelings of coercion from the target. This notion has been demonstrated as Martin and Shalev (2017) found that target specific information allowed acquirers to significantly increase their acquisition efficiency. Additionally, a recent qualitative study which interviewed executives with extensive acquisition experience offered further support. The study reported that acquiring executives found that integrations and the ultimate performance of the new unit were substantially better when firms had intimate knowledge of the target organization, prioritized communication, and emphasized how to frame the deal when communicating with target employees versus target management to create a more inclusive environment (Wuorinen, Burgess, & Wright,

forthcoming). As such, firsthand experiences have demonstrated that tact and effective communication serves to assuage the concerns of target managers and employees while also facilitating smoother transitions and overcoming obstacles, leading to more successful outcomes.

Thus, merging firms with previously different authority structures will be better equipped to achieve superior innovation productivity when they have shared the experience of a prior alliance with one another. It is expected that having a prior alliance provides information that will aid merging firms in the post-acquisition period, serving to alleviate the complications that arise due to dissimilar authority structures. With the alleviation of these complications, the costs of adaptation are expected to be lessened for these firms.

> *H3: The relationship between authority structure dissimilarity and post-acquisition*
> *innovation productivity will be moderated by prior alliances, such that the relationship*
> *will be less negative for technology acquisitions where the acquirers and targets had a*
> *previous alliance.*

Technology domain overlap

Just as firms may have shared experiences to draw upon when considering and following through with a merger or acquisition, firms can also have similar experiences. In terms of innovation, some of the most valuable similar experiences can be innovating in similar technological domains. Developing innovations in similar technological domains can provide a basis for context and common understanding which can facilitate more effective innovation processes in the post-acquisition period. Specifically, developing competencies in common technological domains is expected to result in knowledge similarity between merging firms (Choi & McNamara, 2018), which allows innovating units to have a common technological area

from which to build upon. Furthermore, sharing similar knowledge in technological domains is not necessarily expected to represent redundant knowledge. For instance, although innovating units may share similar knowledge in some area, the ways in which they each applied that knowledge in a narrower technological area (Makri, Hitt, & Lane, 2010) or recombined it with other technological domains (Gruber, Harhoff, & Hoisl, 2013) will almost certainly be unique. These unique applications and recombination of knowledge provide the opportunity for innovating units to learn from one another and find novel ways to utilize their collective knowledge to develop new innovations.

Despite the advantages provided by sharing similar experiences via innovating in the same technological domains, these advantages provide the most benefits to firms that share similar authority structures and thus similar innovation processes. Having a common technological base from which to build subsequent innovation relies on the ability of these firms to leverage this advantage through their innovation processes. Because firms with similar authority structures tend to prioritize the same innovation stages and develop similar innovation processes, they will be better equipped following an acquisition to build off their similar experience to facilitate further innovations. Alternatively, firms with dissimilar authority structures and thus dissimilar innovation processes will still need to overcome their procedural differences and adapt to new structures before they are able to fully leverage the benefits conveyed from sharing similar innovation experiences. Therefore, the expectation is that the existence of knowledge commonality in the form of technology domain overlap will amplify the effect of authority structure similarity by providing benefits to the firms that have similar authority structures. While the same benefit is provided to firms with dissimilar authority

structures, these firms will be less capable of taking advantage of this form of knowledge commonality until they have adapted.

> *H4: The relationship between authority structure similarity and post-acquisition innovation productivity will be moderated by technology domain overlap, such that the relationship will be more positive for technology acquisitions where the acquirers and targets have a greater degree of technology domain overlap.*

METHODS

Sample

To test my hypotheses, I leverage a sample consisting of all majority technology acquisitions completed in North America from the year 2000 to 2015 between publicly traded firms. In order to qualify as a technology acquisition, the target firm must be classified as competing in an industry identified by a set of three-digit Standard Industry Classification codes used in prior research (Hecker, 1999; Yu et al., 2019) as seen in Table 1.1. Further, to be considered a majority acquisition, the acquiring firm must have acquired at least fifty percent stake in the target firm within the focal deal. All acquisition data was collected from ThomsonOne and firm and industry data from COMPUSTAT. Prior alliance data was collected from SDC Platinum and all patent data from PatentsView and Google Patents. Finally, new product introduction data was collected from RavenPack.

Table 1.1. High-Tech Industry SIC Identifications

SIC	Industry Name
281	Industrial Inorganic Chemicals
282	Plastics Materials and Synthetic Resins, Synthetic Rubber
283	Drugs
284	Soap, Detergents, and Cleaning Preparations; Perfumes, Cosmetics, and Other Toilet Preparations
285	Paints, Varnishes, Lacquers, Enamels, and Allied Products
286	Industrial Organic Chemicals
287	Agricultural Chemicals
289	Miscellaneous Chemical Products
291	Petroleum Refining
348	Ordnance and Accessories, except Vehicles and Guided Missiles
351	Engines and Turbines
353	Construction, Mining, and Materials Handling
355	Special Industry Machinery
356	General Industrial Machinery and Equipment
357	Computer and Office Equipment
361	Electric Transmission and Distribution Equipment
362	Electrical Industrial Apparatus
365	Household Audio and Video Equipment
366	Communications Equipment
367	Electronic Components and Accessories
371	Motor Vehicles and Motor Vehicle Equipment
372	Aircraft and Parts
376	Guided Missiles and Space Vehicles and Parts
381	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical Systems, Instruments, and Equipment
382	Laboratory Apparatus and Analytical, Optical, Measuring, and Controlling Instruments
384	Surgical, Medical, and Dental Instruments and Supplies
386	Photographic Equipment and Supplies
737	Computer Programming, Data Processing, and other Computer Related Services
871	Engineering, Architectural, and Surveying
873	Research, Development, and Testing Services
874	Management and Public Relations Services

Dependent variables

To assess the productivity of firm innovation, I examined two salient outcomes of the innovation process. First, following prior acquisition-innovation research, *patent productivity*

was measured as the count of all filed patents in the five years following each acquisition (Choi & McNamara, 2018; Kapoor & Lim, 2007). To collect this data, I began with PatentsView which utilizes a unique firm ID for each organization in their database, however, there are no other linking IDs available within this dataset, apart from known patent numbers. Thus, using known patent numbers linked to firms using an existing database (Kogan, Papanikolaou, Seru, & Stoffman, 2017), I identified as many PatentView unique firm identifiers as possible within my sample and collected patent data for these firms. For the firms in my sample where the PatentsView ID was not identified, patent data was manually collected from Google Patents using the advanced search function. When searching for patents manually within the Google Patents database, the search criteria was based on "US" patent office filings, the priority date of the filings, the company name as the assignee, and around the date of the focal acquisition. Both methods allow for the collection of patent data before and after the acquisition for the acquiring and target firms, as well as the primary Cooperative Patent Classification data.

Although not all patents translate into actual product or service offerings, nor internal process enhancements, they do signal the establishment of a technological novelty and the ownership of property rights for that technology by the patenting organization (Ahuja & Katila, 2001). The advantage of patents over observable new product introductions is that patents are less restrictive on the sample, will have greater variance, and can account for both product and process innovations. Patents are also superior to R&D expenses as these expenses do not measure actual innovation, but the amount of capital invested in the innovation process. Further, patents represent the most proximal innovation output stemming from technology focused acquisitions.

The second measure of post-acquisition innovation productivity was a more distal measure, representing innovation productivity that emerges later in the innovation process. *Commercialization productivity* was measured as the number of new product introductions (Zahra & Nielsen, 2002) in the five years following the completion of the focal acquisition. As alluded to in the justification for patents as a measure of innovation productivity, new product announcements does not account for any process innovations and inherently occurs later in the innovation process than do patents. However, one of the advantages of new product commercialization as a measure of innovation productivity is that rather than simply accounting for the creation of new knowledge, this measure accounts for the later stages of the innovation process and the capability firms have for translating that knowledge to product offerings. As such, the strength and nature of the relationship between firm authority structures and innovation productivity is not necessarily expected to be the same for patents and new product commercialization. Thus, examining the effects on each of these measures offers a more complete picture of the relationship than would examining one alone.

Independent variables

The primary line of inquiry in my study will revolve around the authority structure of organizations. Previous research at the micro level that has investigated the effects of authority structure has been primarily conducted in laboratories, where the authority structure experienced by the subjects has been controlled by the experimenters (Hollenbeck et al., 2011). At the macro level, prior research has leveraged direct access to employees to facilitate the measurement of authority structure using surveys (Cardinal, 2001; Jansen et al., 2006; Keum and See, 2018). However, as I am investigating historical acquisitions, meaning the target firm no longer exists, these measures are not feasible for the purposes of my study. Thus, I endeavor to develop a new

measure that can estimate the authority structure of organizations in an objective and historical manner. As inspiration for the selection of an appropriate measure, I referred to the survey items utilized by prior research to establish the degree of centralization of authority in an organization. For example, Jansen and colleagues (2006) use survey items to rate the degree to which subjects believe the following statements to be true; "*There can be little action taken here until a supervisor approves a decision,*" "*even small matters have to be referred to someone higher up for a final decision,*" and "*most decisions people make here have to have their supervisor's approval.*" In the case of Cardinal (2001), participants were asked to rate several items based on the degree to which the firm deferred decision making authority to R&D professionals. Naturally, these items establish whether there is a central, perhaps single, figure that makes the ultimate decision in terms of innovation. Thus, it is appropriate that establishing whether there is such a figure present in the top management team of an organization would be indicative of a centralized authority structure in terms of the innovation efforts.

As I am interested in the affect authority structure has on innovation outcomes, I first strove to identify whether firms have centralized authority structures specific to the management of innovation within the corporation. Using 10-k filings and annual reports[1], I analyzed the corporate management structure in the year preceding for each firm that was involved in an acquisition to determine whether there was a central figure in terms of innovation. 10-k filings require that firms report the five highest paid executives in their annual filing, however, it is often expected that innovation officers will not be among these five highest paid managers. However, annual reports often outline a greater number of executives and describes biographies,

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[1] As the focal interest is on corporate authority structures, it is important to note that in the case of target firms that are divested from a larger corporate parent, authority structure determinations are made based upon their ultimate parent organization in order to capture the authority conditions the target unit was accustomed to operating under.

roles, titles, and other identifying criteria, granting a greater likelihood of identifying whether

there is a central innovation officer on the top management team. Thus, to identify whether each

firm is centralized or decentralized in terms of their innovation authority structures, each firm's

10-k filing will be first examined, looking to identify whether the document makes mention of a

central innovation figure in the organization. If such an individual was not indicated, the next

step will be to look for the same criteria within the firm's annual report. For example, identifying

the presence of a single Chief Technology Officer, Chief Innovation Officer, or a similar

position[2] that operated at the corporate level would be indicative of a centralized authority

structure, specific to innovation. Further, to meet the criteria for a centralized authority structure,

there must have been only one central figure that oversaw the innovation efforts of the entire

organization. Thus, for example, if the corporation had many innovation managers at the

corporate level for different sets of organizational divisions, this would be coded as decentralized

authority structure. Last, if there was no identifiable innovation figure at the corporate level, this

too was coded as decentralized authority structure. Thus, the measure for *Acquirer(Target) CTO*

will be dichotomous and coded as one when there is a single, centralized authority figure for

innovation and zero for any other condition.

    In an effort to capture the structural authority of each organization in a more general

sense, I also test my hypotheses by determining structural authority in terms of whether each

organization reports a corporate unit as a distinct segment. Thus, I rely on data obtained from the

COMPUSTAT segments database, coding whether each firm reports a corporate unit in the year

prior to the focal acquisition. Reporting a corporate segment is not required in this database, thus

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[2] All corporate managers for each firm were analyzed in order to determine whether any served in a position indicating responsibility for innovation. If an executive's title or description included reference to corporate-wide innovation or research and development, they would be counted in this measure.

its presence does signal a certain degree of hierarchy within the organization, as well as a reflection of the degree to which the organization views the corporate office as a central resource area. Both circumstances can be attributed to a centralized authority structure. Thus, the absence of a reported corporate unit would be more representative of a decentralized authority structure. This is also a dichotomous measure of authority structure, where *acquirer(target) corporate segment* is coded one when there is a reported corporate segment in the COMPUSTAT segment data base in the year prior to the focal acquisition and zero when there is not.

As discussed, prior research on the authority structures of organizations has typically relied on survey data to identify the authority structure of the organization or at the micro level, been manipulated in laboratory studies. As such, there is no established unobtrusive measure for examining authority structure in organizations. Thus, it becomes necessary to seek additional confirmation for the measures that I have proposed. I randomly selected 50 acquiring firms (25 coded as centralized; 25 coded as decentralized) from my sample and conducted a more in-depth qualitative analysis of their authority structures. I examined company websites and company press releases to observe the prevalence of information that refers to organizational authority structure or evidence that signals the centrality of Chief Technology Officers within their company. On company websites, I explored the senior leadership profiles that often exist within the "about *company*" section of the website. On these pages, organizations often provide the names, headshots, titles, and short biographies of their top executives. Identifying consistency between the annual report and company website reporting of executives would be somewhat expected, however, this provides an important first step for confirming the existence of innovation officers on the top management team. As a follow-up, I also searched for innovation focused press releases in an effort to identify whether the CTOs were featured or provided

31

commentary on the innovation efforts of the organization. Typically, major press releases will feature commentary from the CEO accompanied by other relevant executive officers. Thus, I searched through five innovation focused press releases for each company selected with the goal of identifying any commentary provided by the CTO or equivalent position. Within the 25 firms selected to represent the centralized authority structures, I was able to identify 16 CTOs that provided commentary on the innovation efforts in my search. As for the sample representing decentralized authority structures, I identified none. This provided further confidence in this measure.

Moderator variables

Prior alliance is a dichotomous measure indicating whether the acquirer and target had a previous alliance within the last five years preceding the acquisition. Data was collected from SDC Platinum to identify whether the acquirer and target firm shared an alliance within five years prior to the focal acquisition. SDC Platinum only reports the date that an alliance begins without providing any information regarding the termination of an alliance. However, most alliances terminate within five years (Kogut, 1988; Yang, Lin, & Peng, 2011) thus, identifying the onset of an alliance between the acquirer and target firm within the last five years appears to be a good indicator of an alliance that provides recent and relevant information that could aid firms in an acquisition. If the acquirer and the target had a previous alliance, this measure was coded as one, whereas the absence of a prior alliance was coded as zero.

Following prior research, *technological domain overlap* was measured as the degree of overlap between the Cooperative Patent Classification (CPC) codes assigned to patents filed by both the acquirer and target (Choi & McNamara, 2018) over the five years preceding the acquisition. CPC codes are used to classify patents as a method to associate patents that represent

innovations in similar areas. Each code consists of one of nine sections as represented by a letter which begins each CPC. The following two digits represent the class within the section, which is a more specific area within each section. This is followed by another letter, representing the subclass, then a variant number of digits representing the main group followed by another variant number of digits representing the subgroup. As an example, take the CPC code that would classify fireworks, "F42B 4/00," where "F" represents the section for mechanical engineering, lighting, heating, weapons, and blasting. The code for the class, "42," represents all patents related to ammunition and blasting. The subclass, "B," represents patents for explosive charges used for blasting, fireworks, and ammunition. Finally, the main group "4/00" represents fireworks and pyrotechnic devices used to amuse, illuminate, or signal, while the subgroups contained within, "4/XX," would each represent different aspects of fireworks. This example demonstrates that when moving from the left of the CPC to the right, each new digit or letter is representative of an increasingly more fine-grained classification of the patent as it relates to other patents. As such, I leveraged the section, class, and subclass to establish technological domain overlap. In the example given, any patent that would be generally classified as explosive charges used for blasting, fireworks, and ammunition, "F42B," would be considered to have a degree of technological domain overlap.

Furthermore, each patent can have multiple CPC codes assigned to it. In an effort to simplify this measure and make it more representative of the foremost competencies of the patenting organization, I collected all primary CPC codes assigned to the patents of each acquiring and target firm filed in the five years preceding the acquisition date. I then took the total sum of acquirer and target patents to represent the total collective technological knowledge of the organizations. Further, each distinct firm had its patents categorized by section and class,

33

then summed to represent the degree of knowledge contained in each technological domain. As the goal was to capture technological domain overlap in the prominent sources of firm knowledge, I identified commonalities between the five most patented CPCs of the acquirer and target to establish the degree to which their technological domains overlap. I focused on only the five most patented CPCs because this measure is intended to capture the major focus of these innovating organizations where the majority of their innovation knowledge is created and kept, as opposed to accounting for one off innovations that do not contribute to the larger innovative mission of the organization. To calculate this measure, a ratio was created where the summed total of acquirer and target patents is the denominator and the number of patents represented by commonly prominent CPCs between each firm was the numerator. For example, if the acquirer and target collectively had 100 patents in the five years preceding the acquisition and of those 100 patents, 50 of them were filed under CPCs that represented the 5 most common technological domains for each firm, the technological domain overlap score would be 0.5, or 50 percent. As such, each technological domain overlap score will range from zero to one.

Control variables

In line with prior acquisition and innovation research, I also control for a number of variables which have been demonstrated to influence acquisition and innovation outcomes. At the firm level, performance of the organization is expected to influence the ability of firms to first, make an acquisition, and second, dedicate additional funding to facilitate innovation efforts. Thus, *firm performance* was measured using the average return on assets (Iyer & Miller, 2008) over the five-year period following the focal acquisition. For similar reasons, *firm size* was measured as the average sales over the five-year post-acquisition period. Further, additional acquisitions made during the five-year period following the focal acquisition will impact the

34

resources available to innovation efforts (Makri et al., 2010). Thus, I controlled for the *follow-on acquisitions* using a sum of the total value of acquisitions the acquirer undertakes over the five-year post acquisition period multiplied by the percent of that five-year period following each acquisition. For example, if the acquirer completes a follow-on acquisition two years following the focal acquisition that is valued at $100M, this measure would be calculated as 100*0.6 resulting is a value of 60.

At the industry level, to account for the rate of change and growth within each industry, I control for industry dynamism and industry munificence. Following prior research, these measures were created by regressing industry sales on a variable representing a five-year rolling window throughout my sample for each industry represented. Next, the reported standard error was divided by the average industry sales over the course of the appropriate five-year window to create the *industry dynamism* variable. To calculate *industry munificence* the regression coefficient was divided by the average industry sales over the course of the appropriate five-year window (Gamache & McNamara, 2019; McNamara, Vaaler, & Devers, 2003). Further, controlling for the degree of *industry concentration* among the firms within each industry, following prior research, I created a Herfindahl index based on the total sales of each firm within an industry (Geletkanycz & Boyd, 2011; Prince & Simon, 2009). I also included year dummy variables in order to capture any additional macroeconomic variance that may exist in my sample.

Specific to innovation, I control for the capital put towards innovation efforts using the average research and development (R&D) expenses over the course of the five years following the acquisition. To control for the rate at which acquirers and target were separately able to innovate prior to the focal acquisition, I also controlled for (*acquirer/target*) *prior innovation*

productivity by utilizing a five-year average of the number of patents filed prior to the focal

acquisition year by the acquiring firm and by the target firm (Choi & McNamara, 2018; Puranam

& Srikanth, 2007). Controlling for prior innovation productivity of each firm also allows the

examination to parse out productivity gains over and above prior innovation productivity,

signaling the effectiveness of a given acquisition based on the firms' structural match or

mismatch.

Estimation technique

Due to the nature of my dependent variable being a count measure, the most appropriate

analysis is a negative binomial regression (NBR) as innovation productivity is a non-negative

count variable that tends to exhibit over-dispersion. To account for non-independence of

observations for firms that make multiple acquisitions throughout the sample period, I also

cluster the standard errors by acquiring firm.

Robustness tests

In an effort to identify whether my analyses suffer from endogeneity due to omitted

variables, I also conducted an impact threshold for confounding variable (ITCV) test (Busenbark,

Yoon, Gamache, & Withers, in press). The result of an ITCV test reports the degree to which an

omitted variable would need to be correlated with the independent and dependent variable to

invalidate the hypothesized causal inferences. The ITCV test is also relative to the variables

observed in the model, thus, the resulting correlations will then be compared to the correlation

matrix for the variables used in my study. If no covariates in the correlation matrix achieves the

minimum correlation reported by the ITCV, the interpretation is that it is unlikely that there is a

variable that would meet the criteria estimated to invalidate the relationships and that the findings are not due to endogeneity from omitted variable bias.

RESULTS

The descriptive statistics and correlations are presented in Table 1.2. In an effort to reduce the concern for endogeneity due to omitted variable bias, I calculated the ITCV for each of the hypotheses and the varying methodologies. Across all the conditions, the ITCV test indicated that the lowest threshold required to invalidate the findings would need to be a variable that shares correlations with the outcome variable at a level 0.10 or greater and with the predictor variable at a level of -0.10 or lesser. Based on this criterion, there are no variables in my model that meet these conditions, suggesting that it is unlikely that there is an omitted variable bias in my sample. Further, in order to invalidate these findings, across all conditions an average of 45.67 percent of the estimate would have to be due to bias, which appears to be an unrealistic expectation from a potentially omitted variable in these models. Thus, I conclude that the ITCV analysis suggests that it is unlikely that my empirical results would be deemed invalid due to an omitted variable.

For Hypothesis 1, I argued that acquirer and target firm authority structure similarity would be positively related to post-acquisition innovation productivity. As described in the methodology of the study, authority structure was assessed based on the presence of a Chief Technology Officer as well as the reporting of a corporate segment in the organization. Further, the innovation productivity was assessed using patents as well as new product announcements. As such, there are four regression outputs and point estimate contrasts to assess each hypothesis. Model 3 of Table 1.3 reports the effects when examining patent productivity while using the

37

CTO measure of authority structure. The coefficient for this prediction is negative and non-significant (b = -0.29, p = 0.40).

Table 1.2. Descriptive Statistics and Correlations [a]

	Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12
1	Patent productivity	952.24	3065.9												
2	Commercialization productivity	20.81	42.81	0.16											
3	Prior alliance	0.02	0.13	0.03	0.02										
4	Technology domain overlap	0.15	0.27	0.23	0.05	0.04									
5	Firm performance	-0.08	0.81	0.05	0.06	0.02	0.02								
6	Firm size	13079	27805	0.54	0.27	0.09	0.12	0.08							
7	R&D expenses	666.72	1517.6	0.45	0.40	0.11	0.22	0.08	0.56						
8	Follow-on acquisitions	1799.1	4296.4	0.39	0.22	0.08	0.14	0.07	0.59	0.56					
9	Acquirer prior innovation productivity	1029.6	3696.2	0.87	0.05	0.05	0.21	0.04	0.54	0.39	0.51				
10	Target prior innovation productivity	45.49	401.00	0.21	-0.02	0.02	0.10	0.01	0.08	0.19	0.22	0.32			
11	Industry dynamism	0.02	0.02	-0.01	-0.05	-0.04	-0.04	0.03	-0.01	-0.10	-0.08	0.00	-0.00		
12	Industry munificence	0.06	0.09	-0.10	-0.06	0.03	-0.05	-0.06	-0.10	-0.05	-0.15	-0.10	-0.04	0.04	
13	Industry concentration	0.19	0.19	0.42	-0.00	-0.03	0.13	0.05	0.26	0.11	0.17	0.35	0.03	0.27	-0.08
14	Acquirer CTO	0.28	0.45	0.09	0.09	-0.03	0.12	-0.01	0.05	0.04	-0.03	0.05	-0.03	-0.06	-0.02
15	Acquirer corporate segment	0.21	0.40	-0.07	-0.05	0.03	-0.10	0.06	0.04	-0.00	0.07	-0.03	0.09	0.03	-0.02
16	Target CTO	0.29	0.46	-0.04	0.03	0.09	0.16	0.01	-0.02	0.11	0.05	-0.05	0.08	-0.08	0.06
17	Target corporate segment	0.13	0.33	-0.02	-0.07	-0.00	0.02	0.04	-0.01	-0.04	-0.09	-0.02	-0.01	0.06	0.02

	Variable	13	14	15	16
14	Acquirer CTO	0.03			
15	Acquirer corporate segment	-0.04	-0.07		
16	Target CTO	-0.05	0.07	-0.06	
17	Target corporate segment	0.06	-0.06	0.02	-0.14

[a] N = 540; the absolute values of correlation coefficients greater than 0.09 are significant at $p < 0.05$.

Table 1.3. Patent Productivity in Post-Technology Acquisition Firms (CTO) [a]

Variable	1	2	3	4
Firm performance	-0.02	-0.02	-0.02	-0.02
	(0.02)	(0.02)	(0.02)	(0.02)
Firm size	0.35***	0.35***	0.35***	0.35***
	(0.09)	(0.09)	(0.09)	(0.09)
R&D expenses	0.28*	0.20†	0.20†	0.17
	(0.11)	(0.11)	(0.11)	(0.11)
Follow-on acquisitions	-0.16*	-0.17*	-0.17*	-0.17*
	(0.08)	(0.07)	(0.07)	(0.07)
Acquirer prior innovation	2.09***	2.13***	2.13***	2.14***
productivity	(0.10)	(0.11)	(0.11)	(0.11)
Target prior innovation	0.60***	0.65***	0.64***	0.65***
productivity	(0.11)	(0.11)	(0.10)	(0.11)
Industry dynamism	-0.03	-0.03	-0.04	-0.04
	(0.08)	(0.08)	(0.08)	(0.08)
Industry munificence	-0.04	-0.03	-0.02	-0.02
	(0.07)	(0.07)	(0.07)	(0.07)
Industry concentration	0.03	0.03	0.04	0.04
	(0.08)	(0.08)	(0.08)	(0.08)
Prior alliance	-0.21	-0.24	-0.28	-0.26
	(0.64)	(0.66)	(0.65)	(0.69)
Technological domain overlap	-0.29***	-0.31***	-0.31***	-0.20*
	(0.08)	(0.08)	(0.08)	(0.09)
Target CTO		0.16	0.25	0.22
		(0.14)	(0.17)	(0.18)
Acquirer CTO		0.39**	0.48**	0.52**
		(0.13)	(0.17)	(0.16)
Acquirer CTO X Target CTO			-0.29	-0.18
			(0.35)	(0.36)
Acquirer CTO X Target CTO X				-0.13
Technological domain overlap				(0.26)
Constant	4.16***	4.03***	4.02***	4.01***
	(0.22)	(0.26)	(0.26)	(0.27)
N	541	540	540	540

[a] Robust standard errors in parentheses. Year dummy variables are included in both models but not reported in table.
†$p < 0.10$
*$p < 0.05$
**$p < 0.01$
***$p < 0.001$

Looking to the contrasts in Table 1.7 for a more fine-grained analysis, Model 1 also reveals that there are no significant differences between the centralized-centralized condition and the two dissimilar conditions. However, the decentralized-decentralized condition is significantly lower than the centralized-decentralized condition (contrast = -0.48, p = 0.004).

Table 1.4. NPA Productivity in Post-Technology Acquisition Firms (CTO) [a]

Variable	1	2	3	4
Firm performance	0.00	0.00	0.00	-0.00
	(0.02)	(0.02)	(0.03)	(0.03)
Firm size	0.19†	0.19†	0.19†	0.20†
	(0.11)	(0.11)	(0.11)	(0.11)
R&D expenses	0.45***	0.43***	0.42***	0.43***
	(0.12)	(0.12)	(0.12)	(0.11)
Follow-on acquisitions	0.14	0.14	0.14	0.14
	(0.10)	(0.10)	(0.10)	(0.10)
Acquirer prior innovation	0.17†	0.18*	0.18*	0.18*
productivity	(0.09)	(0.09)	(0.09)	(0.09)
Target prior innovation	-0.32***	-0.31**	-0.31**	-0.30**
productivity	(0.10)	(0.10)	(0.10)	(0.10)
Industry dynamism	0.14	0.13	0.12	0.12
	(0.09)	(0.10)	(0.09)	(0.09)
Industry munificence	-0.31***	-0.30***	-0.31***	-0.32***
	(0.08)	(0.08)	(0.08)	(0.08)
Industry concentration	-0.21†	-0.21†	-0.22*	-0.20†
	(0.11)	(0.11)	(0.11)	(0.11)
Prior alliance	0.41	0.46	0.50	0.47
	(0.40)	(0.41)	(0.41)	(0.41)
Technological domain overlap	0.15*	0.12	0.12	0.14
	(0.07)	(0.08)	(0.08)	(0.10)
Target CTO		0.07	-0.01	-0.03
		(0.12)	(0.16)	(0.16)
Acquirer CTO		0.16	0.09	0.10
		(0.16)	(0.18)	(0.17)
Acquirer CTO X Target CTO			0.24	0.24
			(0.22)	(0.24)
Acquirer CTO X Target CTO X				0.11
Technological domain overlap				(0.26)
Constant	3.25***	3.16***	3.17***	3.19***
	(0.21)	(0.21)	(0.21)	(0.20)
N	541	540	540	540

[a] Robust standard errors in parentheses. Year dummy variables are included in both models but not reported in table.
  †p < 0.10
  *p < 0.05
  **p < 0.01
  ***p < 0.001

Model 3 of Table 1.4 reports the effects when examining new product announcements while using the CTO measure of authority structure. The coefficient in this regression is positive and non-significant (b = 0.24, p = 0.29). Again, in Model 2 of Table 1.7 it is shown that this non-significant result is confirmed by the contrasts, with no significant differences in this model.

Table 1.5. Patent Productivity in Post-Technology Acquisition Firms (Segment) [a]

Variable	1	2	3	4
Firm performance	-0.02	-0.01	-0.01	-0.01
	(0.02)	(0.02)	(0.02)	(0.03)
Firm size	0.35***	0.39***	0.39***	0.41***
	(0.09)	(0.10)	(0.10)	(0.11)
R&D expenses	0.28*	0.30*	0.30*	0.28*
	(0.11)	(0.12)	(0.12)	(0.12)
Follow-on acquisitions	-0.16*	-0.23*	-0.23*	-0.23*
	(0.08)	(0.09)	(0.09)	(0.09)
Acquirer prior innovation productivity	2.09***	2.16***	2.16***	2.15***
	(0.10)	(0.11)	(0.11)	(0.11)
Target prior innovation productivity	0.60***	0.45***	0.45***	0.44***
	(0.11)	(0.12)	(0.12)	(0.11)
Industry dynamism	-0.03	-0.00	-0.01	-0.01
	(0.08)	(0.11)	(0.12)	(0.12)
Industry munificence	-0.04	-0.15	-0.15	-0.13
	(0.07)	(0.11)	(0.11)	(0.11)
Industry concentration	0.03	0.15†	0.15†	0.17†
	(0.08)	(0.09)	(0.09)	(0.09)
Prior alliance	-0.21	-0.02	-0.01	0.02
	(0.64)	(0.64)	(0.64)	(0.63)
Technological domain overlap	-0.29***	-0.24**	-0.24**	-0.28***
	(0.08)	(0.08)	(0.08)	(0.09)
Target corporate segment		-0.64**	-0.60**	-0.76**
		(0.21)	(0.23)	(0.25)
Acquirer corporate segment		-0.44*	-0.41†	-0.44*
		(0.21)	(0.22)	(0.22)
Acquirer corporate segment X Target corporate segment			-0.20	-0.02
			(0.58)	(0.57)
Acquirer corporate segment X Target corporate segment X Technological domain overlap				-0.71†
				(0.39)
Constant	4.16***	4.28***	4.28***	4.26***
	(0.22)	(0.27)	(0.27)	(0.27)
N	541	381	381	381

[a] Robust standard errors in parentheses. Year dummy variables are included in both models but not reported in table.

†p < 0.10
*p < 0.05
**p < 0.01
***p < 0.001

Model 3 of Table 1.5 reports the effects when examining patent productivity while using the corporate segment measure of authority structure. The coefficient for this prediction is negative and non-significant (b = -0.20, p = 0.72). Model 3 of Table 1.7 shows a somewhat more complicated set of results. Although the similarly centralized condition does not have any significant difference from the dissimilar conditions, the similarly decentralized condition is revealed to be marginally different from the centralized-decentralized condition (contrast = 0.41,

p = 0.061), while the contrast with the decentralized-centralized condition is negative and

significant (contrast = -0.60, p = 0.008).

Table 1.6. NPA Productivity in Post-Technology Acquisition Firms (Segment) [a]

Variable	1	2	3	4
Firm performance	0.00	0.01	0.01	0.01
	(0.03)	(0.03)	(0.03)	(0.03)
Firm size	0.19†	0.24†	0.23†	0.24*
	(0.11)	(0.13)	(0.12)	(0.12)
R&D expenses	0.45***	0.46***	0.47***	0.49***
	(0.12)	(0.14)	(0.14)	(0.13)
Follow-on acquisitions	0.14	0.14	0.13	0.11
	(0.10)	(0.10)	(0.10)	(0.11)
Acquirer prior innovation	0.17†	0.06	0.05	0.06
productivity	(0.09)	(0.11)	(0.11)	(0.11)
Target prior innovation	-0.32***	-0.37***	-0.37***	-0.36***
productivity	(0.10)	(0.11)	(0.10)	(0.11)
Industry dynamism	0.14	0.12	0.09	0.09
	(0.09)	(0.10)	(0.10)	(0.10)
Industry munificence	-0.31***	-0.35***	-0.36***	-0.34***
	(0.08)	(0.09)	(0.08)	(0.08)
Industry concentration	-0.21†	-0.16	-0.14	-0.13
	(0.11)	(0.12)	(0.12)	(0.12)
Prior alliance	0.41	0.48	0.46	0.63
	(0.40)	(0.51)	(0.50)	(0.50)
Technological domain overlap	0.15*	0.12	0.11	0.07
	(0.07)	(0.08)	(0.08)	(0.08)
Target corporate segment		0.02	0.21	0.09
		(0.22)	(0.25)	(0.24)
Acquirer corporate segment		-0.30	-0.18	-0.20
		(0.22)	(0.23)	(0.23)
Acquirer corporate segment X			-0.93†	-0.99*
Target corporate segment			(0.49)	(0.46)
Acquirer corporate segment X				-1.31***
Target corporate segment X				(0.39)
Technological domain overlap				
Constant	3.25***	3.34***	3.35***	3.31***
	(0.21)	(0.24)	(0.24)	(0.24)
N	541	381	381	381

[a] Robust standard errors in parentheses. Year dummy variables are included in both models but not reported in table.

$\dagger$p < 0.10
*p < 0.05
**p < 0.01
***p < 0.001

Last, Model 3 of Table 1.6 reports the effects when examining new product announcements

while using the corporate segment measure of authority structure. The coefficient for this

prediction is negative and marginally significant (b = -0.93, p = 0.06). Looking to Table 1.7 in

Model 4, the contrasts reveal that the similarly centralized condition is negative and significantly

different from the decentralized-centralized condition (contrast = -1.11, p = 0.018) which is opposite of the prediction, while no other contrasts between similar and dissimilar conditions reveal significant differences. These results, individually and collectively, fail to provide support for hypothesis 1.

Figure 1.1. Post-Acquisition Patent Productivity (CTO)
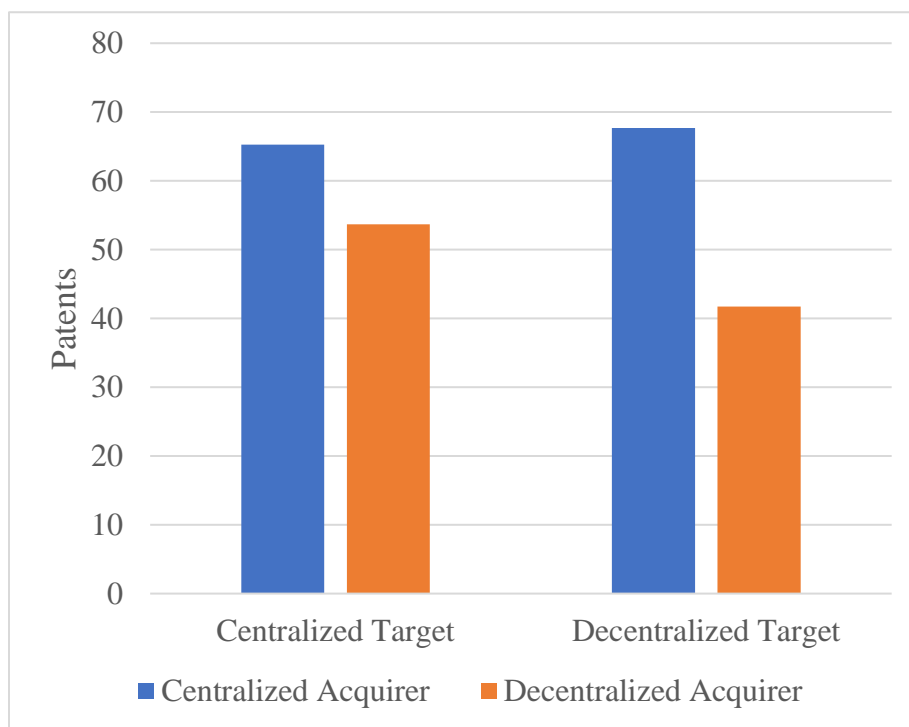
Figure 1.2. Post-Acquisition NPA Productivity (CTO)
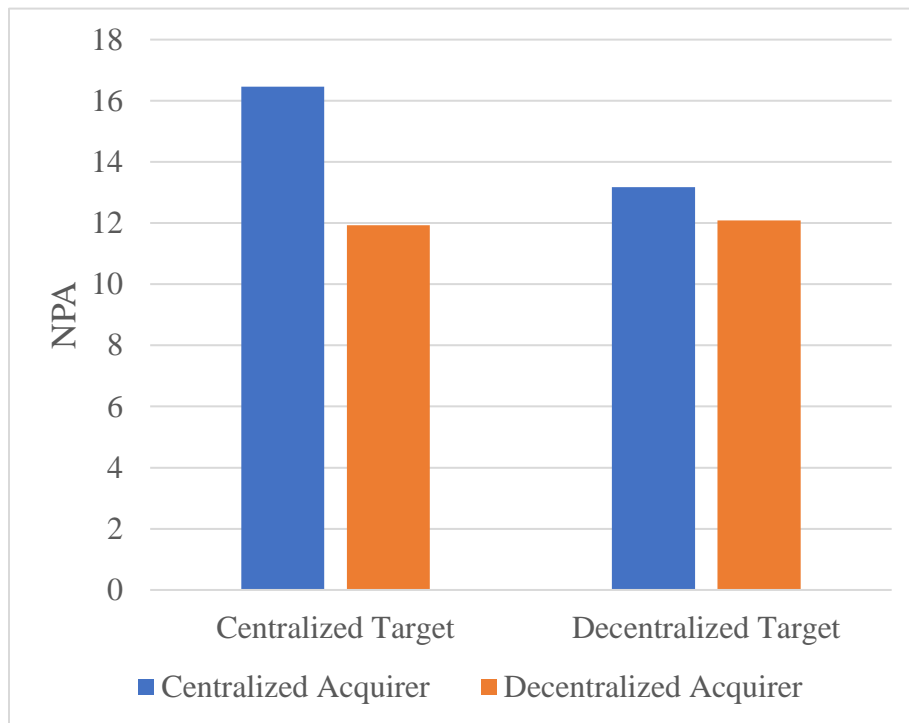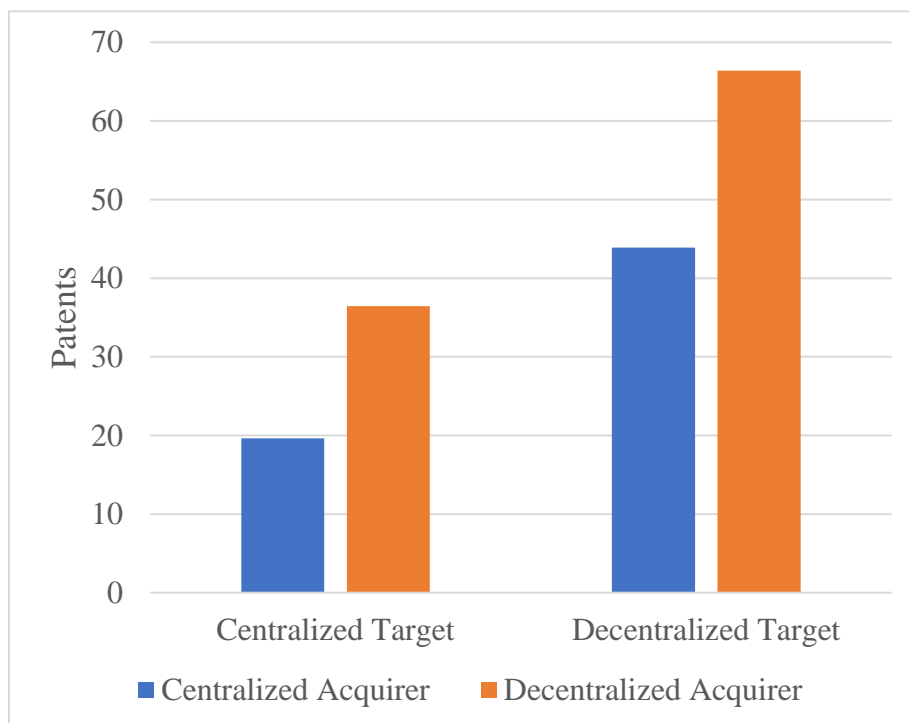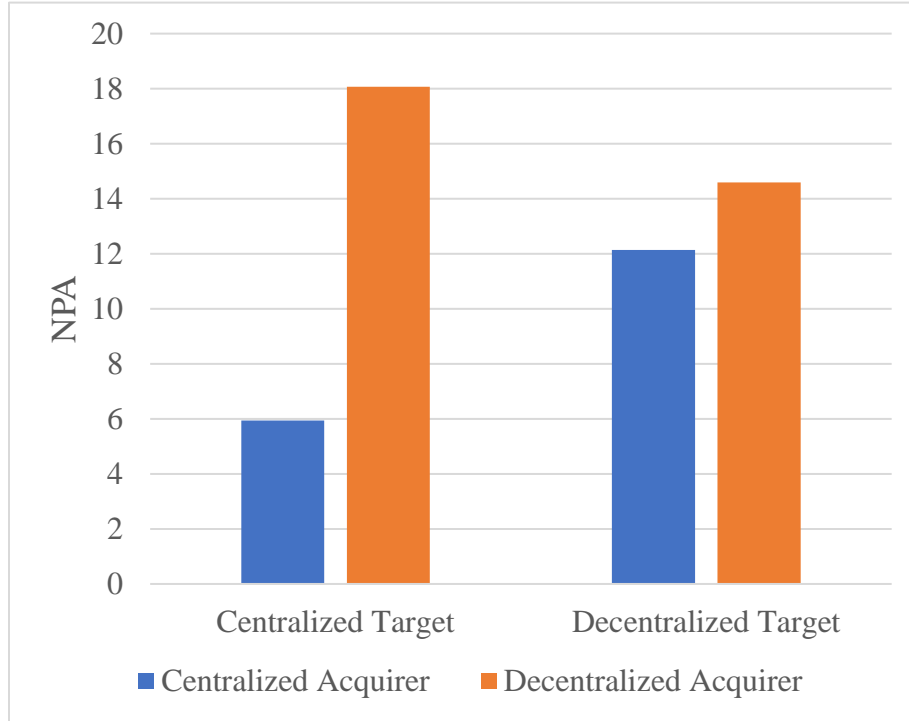

Figure 1.3. Post-Acquisition Patent Productivity (Segment)

Figure 1.4. Post-Acquisition NPA Productivity (Segment)

Table 1.7. Contrast in Innovation Productivity Post-Technology Acquisition [a]

Variable	Patents (CTO)	NPA (CTO)	Patents (Seg)	NPA(Seg)
Cent-Cent vs Dec-Dec	0.45[†]	0.31	-1.22[*]	-0.90[*]
	(0.24)	(0.20)	(0.52)	(0.44)
Cent-Dec vs Dec-Cent	0.23	0.10	-0.19	0.40
	(0.19)	(0.21)	(0.27)	(0.29)
Cent-Cent vs Cent-Dec	-0.04	0.22	-0.80	-0.71
	(0.29)	(0.17)	(0.53)	(0.44)
Cent-Cent vs Dec-Cent	0.20	0.32	-0.62	-1.11[*]
	(0.28)	(0.22)	(0.55)	(0.47)
Dec-Dec vs Cent-Dec	-0.48[**]	-0.09	0.41[†]	0.18
	(0.17)	(0.18)	(0.22)	(0.23)
Dec-Dec vs Dec-Cent	-0.25	0.01	-0.60[**]	0.21
	(0.17)	(0.16)	(0.23)	(0.25)

[a] Robust standard errors in parentheses.
  [†] $p < 0.10$
  [*] $p < 0.05$
  [**] $p < 0.01$
  [***] $p < 0.001$

Hypothesis 2 predicted that when comparing acquisitions between firms with dissimilar

authority structures, deals where the targets transition from a decentralized structure to a

centralized structure will experience a greater reduction in innovation productivity than targets transitioning from a centralized structure to a decentralized structure. When comparing the asymmetric conditions in Figure 1.1, which predicts patents based on the CTO measure of authority structure, the comparison as shown in Model 1 of Table 1.7 is non-significant (contrast = 0.23, p = 0.22). Figure 1.2 depicts the prediction of new product announcements based on the CTO measure of authority structure and reveals a non-significant pairwise comparison of the conditions in Model 2 of Table 1.7 (contrast = 0.10, p = 0.63). Figure 1.3 is the prediction of patents based on the corporate segment measure of authority structure and also demonstrates a non-significant pairwise comparison between the authority structure asymmetry groups as shown in Model 3 of Table 1.7 (contrast = 0.-19, p = 0.49). Last, Figure 1.4 is the prediction of new product announcements based on the corporate segment measure of authority structure, which is also non-significant in the differences between the asymmetric groups as revealed in Model 4 of Table 1.7 (contrast = 0.40, p = 0.17). Overall, the data suggests that there is no significant difference between the asymmetric authority structure acquisition conditions, failing to provide support for hypothesis 2.

In Hypothesis 3, I argued that the relationship between authority structure dissimilarity and post-acquisition innovation productivity would be moderated by prior alliances, such that the relationship would be less negative for acquisitions where the acquirers and targets had a previous alliance. Due to a lack of variance in prior alliance frequency, this hypothesis was not testable. Of the 540 acquisitions in the sample, only ten observations represented acquisitions where the acquirer and the target shared a previous alliance.

Finally, in Hypothesis 4 I argued that the relationship between authority structure similarity and post-acquisition innovation productivity would be moderated by technology

domain overlap, such that the relationship would be more positive for acquisitions where the acquirers and targets have a greater degree of technology domain overlap. Model 4 of Table 1.3 reveals that the coefficient is negative and non-significant (b = -0.13, p = 0.62). Model 4 of Table 1.4 reports that the coefficient in this regression is positive and non-significant (b = 0.11, p = 0.67). However, Model 4 of Table 1.5 shows that the coefficient for this prediction is negative and marginally significant (b = -0.71, p = 0.07) and Model 4 of Table 1.6 demonstrates that the effect for this prediction is negative and significant (b = -1.31, p = 0.00). Thus, these results fail to provide support for hypothesis 4.

SUPPLEMENTARY ANALYSIS

Despite the lack of support for these hypotheses, re-examining this question with empirical modifications may yet yield support for the primary argument. Control variables play an important role in empirical investigations, as the incorrect specification can lead to both type 1 and type 2 errors. Thus, including other deal characteristics that offer a more complete picture of the deal in question or accounting for additional factors that impact these relationships may aid in revealing whether there is indeed a relationship between authority structure similarity and innovation productivity.

As such, I conducted a simple supplementary analysis replacing some control variables in my proposed model. First, rather than controlling for the raw value of research and development provided for innovation, I replaced this variable with an intensity-based measure to account for how much R&D expenses were allocated based on the relative size of the organization in the first year of the merged organization. For example, a ten-million-dollar investment is much more meaningful for a 100-million-dollar organization compared to a billion-dollar organization. Second, I replaced the controls for each organization's individual prior innovation productivity

48

with a combined measure accounting for their collective patents over the last 5 years. I did this because every other measure in the model is based off the combined entity, thus, in an effort to align this control for prior innovation productivity, I combined the measures of the individual firms. Finally, I added in a dichotomous control variable to indicate whether the acquisition was diversifying or horizontal in nature. With these changes to the hypothesized models, I re-analyzed the proposed relationships. Further, I focused on the predictions that utilized the CTO measure of authority structure centralization as this was my primary measure of centralization and most closely aligned to my construct of interest. Similarly, I focused on the prediction of new product announcements as it encompasses the full innovation process coming to fruition in the form of introducing a new product to a firm's customers and stakeholders. Results of the supplemental analysis are reported in Table 1.8.

In terms of the first hypothesis, these changes produce a substantial change for this relationship. The coefficient for this prediction becomes positive and significant (b = 0.44, p = 0.048), offering evidence that authority structure similarity may in fact be beneficial for merging organizations aiming to increase their innovation productivity. Looking to the contrasts between points, it appears that the major driver of this relationship is the centralized-centralized condition, as it is marginally more productive than the centralized-decentralized condition (contrast = 0.32, p = 0.068) as well as the decentralized-centralized condition (contrast = 0.56, p = 0.014). However, the decentralized-decentralized condition is statistically indistinguishable from the dissimilar conditions.

Moving to the re-examination of the second hypothesis, there still does not appear to be a significant difference between the dissimilarity conditions (contrast = 0.24, p = 0.253). The changes described here in this supplemental analysis do not overcome the lack of variance in the

prior alliance inquiry and thus hypothesis 3 remains untestable. As for the re-examination of hypothesis 4 that predicts the moderation of the primary relationship by technology domain overlap, this too remains unsupported (b = 0.04, p = 0.89).

Table 1.8. NPA Productivity in Post-Technology Acquisition Firms (CTO) [a]

Variable	1	2	3	4
Firm performance	0.01	0.01	0.01	0.01
	(0.03)	(0.03)	(0.03)	(0.03)
Firm size	0.42***	0.38***	0.38***	0.39***
	(0.11)	(0.10)	(0.10)	(0.10)
R&D intensity	0.08	0.05	0.04	0.04
	(0.09)	(0.09)	(0.08)	(0.09)
Follow-on acquisitions	0.26*	0.26*	0.26**	0.26*
	(0.10)	(0.10)	(0.10)	(0.10)
Diversifying acquisition	-0.34*	-0.35*	-0.33*	-0.34*
	(0.15)	(0.15)	(0.15)	(0.15)
Prior innovation productivity	0.21*	0.23*	0.23**	0.23**
	(0.09)	(0.09)	(0.09)	(0.09)
Industry dynamism	0.06	0.04	0.04	0.03
	(0.08)	(0.09)	(0.09)	(0.09)
Industry munificence	-0.26***	-0.26***	-0.27***	-0.28***
	(0.07)	(0.07)	(0.08)	(0.07)
Industry concentration	-0.11	-0.13	-0.14	-0.12
	(0.12)	(0.11)	(0.12)	(0.11)
Prior alliance	0.43	0.52	0.61	0.55
	(0.43)	(0.43)	(0.45)	(0.44)
Technological domain overlap	-0.03	-0.06	-0.06	-0.05
	(0.06)	(0.06)	(0.06)	(0.08)
Target CTO		0.03	-0.12	-0.15
		(0.12)	(0.15)	(0.15)
Acquirer CTO		0.27	0.12	0.14
		(0.17)	(0.18)	(0.18)
Acquirer CTO X Target CTO			0.44*	0.46†
			(0.22)	(0.24)
Acquirer CTO X Target CTO X Technological domain overlap				0.04
				(0.27)
Constant	3.78***	3.64***	3.64***	3.65***
	(0.26)	(0.25)	(0.22)	(0.24)
N	541	540	540	540

[a] Robust standard errors in parentheses. Year dummy variables are included in both models but not reported in table.
†$p < 0.10$
*$p < 0.05$
**$p < 0.01$
***$p < 0.001$

Although the investigation of this empirical re-examination leaves most of the outcomes unchanged, it is promising to find evidence that points to the support of the primary relationship between authority structure similarity and new product announcements. Thus, there remains an

opportunity to investigate this relationship further, perhaps with a different set of boundary conditions that explicate this relationship beyond what has been elucidated here.

DISCUSSION

In this study, I proposed that authority structure similarity would benefit merging organizations by reducing the degree that firms are required to adapt to one another. In a merger or acquisition scenario there will always be adaptation required, however, in the case of technology acquisitions, I argued that similar authority structures will allow firms to continue innovating using the same processes they are accustomed to, reducing the amount of adaptation necessary to maintain or increase their level of productivity. Furthermore, drawing from the suggestions of Structural Adaptation Theory, I also predicted that in asymmetric conditions, the adaptation would be more difficult for decentralized targets that were acquired by centralized acquirers. Finally, I suggested that the primary relationship would be moderated negatively by prior alliances and positively by technology domain overlap. All hypothesized relationships failed to receive support from the data in the models that were proposed, however, some preliminary evidence suggests that there may still be merit to the first hypothesis.

Evidence supporting the primary relationship between authority structure similarity and innovation productivity was found in the supplemental analysis that aimed to refine the model. If the underlying mechanism proposed in this dissertation is indeed responsible for this relationship, taken in conjunction with the finding that centralized firms drove this relationship in the data, this suggests that merging organizations that have a focus on innovation can benefit from both having operated under the supervision of a chief technology officer. Although it is likely that only one CTO will be retained at the corporate level following integration, the

51

innovation processes that each innovating unit have grown accustomed to operating under will, at the very least be consistent, thus allowing for a smoother transition.

Alternatively, what this set of results also begins to hint towards is that it is possible that this relationship is more about the presence of a CTO in the C-suite. As my study did not measure actual innovation processes it may be wise to avoid overextending the meaning of my measures to any black boxed mechanisms. Instead, the presence of a CTO alone can be a powerful signal on two fronts. First, a CTO in the C-suite signals that the organization recognizes the value of innovation and is prioritizing the management of the innovation effort by assigning a corporate level executive to specifically oversee and guide these efforts for the entire corporation. Furthermore, it has also been argued that when firms have or appoint a CTO, they are also signaling intent to drive market change and performance through innovation (Wingender Jr. & Kirby, 2020). Second, a CTO in the C-suite grants additional voice and power to innovating units, ensuring that research and development processes get the support they need to be successful based on the nature of the corporations strategic positioning (Banker, Hu, Pavlou, & Luftman, 2011). Not only do these CTOs provide additional value that can lead to superior innovation performance as suggested in this chapter's supplemental analysis, but they can also drive superior organizational performance (Banker et al., 2011; Wingender Jr. & Kirby, 2020). In either case, this supplementary finding is promising for the further investigation of this relationship. Although the currently proposed boundary conditions still did not provide any additional insight to this relationship, further investigation may yet still be warranted. Thus, it is important to consider what the path forward is and how we may yet glean valuable information that can further describe how organizations can create successful acquisitions.

In examining the bar charts depicted in Figures 1.1-1.4, though the relationship and the differences between the asymmetric conditions did not yield significant results, there were some significant differences between certain conditions in these models. Figure 1.1, that examined patent productivity based on the presence or absence of CTOs in the merging organizations, revealed that the decentralized-decentralized condition was the least productive condition. In fact, it was marginally less productive than the centralized-centralized condition (contrast = 0.45, $p = 0.06$) and significantly less productive than the centralized-decentralized condition (contrast = -0.48, $p = 0.00$). Surprisingly, when examining the conditions depicted in Figure 1.2 that represent the new product announcements based on CTO presence in the merging organizations, all conditions are statistically indistinguishable. Figure 1.3 depicting patent productivity based on corporate segment presence shows that the decentralized-decentralized condition is significantly larger than the decentralized-centralized condition (contrast = -0.60, $p = 0.01$) and the centralized-centralized condition (contrast = -1.22, $p = 0.02$), while being marginally larger than the centralized-decentralized condition (contrast = 0.41, $p = 0.06$). Last, Figure 1.4 which is the representation of new product announcements predicted by corporate segment presence, the centralized-centralized condition is the least productive, being significantly less productive than the centralized-decentralized condition (contrast = -1.11, $p = 0.02$) and the centralized-centralized condition (contrast = -0.90, $p = 0.04$).

At first glance it would appear these varying models do not provide much consistency, however, upon closer inspection, it appears there may be a measurement or construct effect occurring across these models. Looking to Figures 1.1 and 1.2 that utilize the CTO measure of authority structure, we can observe that the conditions where the acquirer is centralized tend to have greater productivity than the conditions with a decentralized acquirer. Figures 1.3 and 1.4

53

that utilize the corporate segment measure of authority structure appear to be the exact opposite, showing that decentralized acquirers tend to have greater productivity than centralized acquirers. One potential explanation for the observed effects of centralization on innovation is that they are contingent on the specific form of authority structure centralization. Although both measures are intended to represent authority structure centralization within an organization, it is apparent that the focus of that centralization varies in scope. Centralization of authority specific to innovation processes signal that there is a commitment to innovation as a core strategic element within the organization while also optimizing efficiencies in the innovation process. Alternatively, general centralization within an organization may be creating bureaucratic inefficiencies that constrain innovation. As such, although these two measures of authority centralization were meant to provide robustness for one another, they may indicate an important distinction in how different authority structure forms influence innovation.

Looking to the moderators, it is apparent that to test the effect of prior alliances on technology acquisition outcomes would require a substantially larger dataset due to the low occurrence frequency. This question could still be examined in the future and could still offer a contribution by determining whether these prior relationships can help ease merger firms through the adaptation required during integration, however, because this sequence of events occurs so infrequently, it may not be worth investigating at all. This is especially the case when the sample is restricted to technology acquisitions. In terms of technology domain overlap, the results do not offer support for my hypotheses with a set of non-significant and significant negative effects. These results suggest that if anything, technology domain overlap appears to be detrimental to innovation productivity for similarly structured firms. Thus, knowledge complementarity would

seem to be the more beneficial element for these merging firms as opposed to having some sort of common linking knowledge.

With some preliminary support for the primary relationship found in the supplementary analysis, it may also be worthwhile to re-examine the contrasts between different conditions in these two-by-two relationships based on the authority structures of the merging organizations. Although no support was found in this study, the potential still exists to examine differences between mismatch conditions or match conditions in terms of how they may differentially influence the outcomes of these acquisitions. Furthermore, other boundary conditions on the relationship with innovation productivity could also be examined such as resource allocation patterns, innovation impact/radicalness, strategic attention, knowledge breadth/depth, or perhaps examining other structural elements of the organization.

In addition to the re-examination of the propositions in this study regarding organizational authority structures, it would also be of interest to examine other structural elements and their effects in the context of acquisitions. Other notable organizational structures that may be of interest would include reward structures and task allocation structures. The importance of these examinations stem from the nature of what makes acquisitions successful. As has been demonstrated in prior acquisition research, acquisitions often fail to meet their expected financial targets. One potential explanation for this is that much of the due diligence for acquisitions focus on the quantifiable aspects of a deal but fail to give more attention to the qualitative aspects of acquisitions which mostly affect the employees of the merging organizations. As the employees are the facilitators of success in an organization, it is equally, if not more important, to also consider how the acquisition is going to influence their work processes, job satisfaction, job performance, and willingness to stay with the company through

the transition. As such, more research into the factors that can affect the employees and their work processes should be pursued so that a better understanding of what facilitates success in acquisitions can be understood.

Overall, although this chapter yielded very little in terms of revealing strong relationships, the supplementary analysis did begin to provide evidence of a relationship suggesting that similarly centralized authority structure acquisitions may be the most productive for those firms that are looking to augment their innovation productivity. If there is a practical contribution to be drawn from this finding, it is the suggestion that if corporations are motivated to augment their innovation via serial acquisition, it would best suit them to have a CTO present in the C-suite and target organizations that similarly have a CTO overseeing their innovation. However, more research is required in order to substantiate that contribution and provide more robust evidence for the theory and proposed relationships of this chapter.

REFERENCES

57

REFERENCES

Agarwal, R., Croson, R., & Mahoney, J. T. (2010). The role of incentives and communication in strategic alliances: An experimental investigation. *Strategic Management Journal*, *31*(4), 413-437.

Ahuja, G., & Katila, R. (2001). Technological acquisitions and the innovation performance of acquiring firms: A longitudinal study. *Strategic management journal*, *22*(3), 197-220.

Amabile, T. M. (1988). A model of creativity and innovation in organizations. *Research in organizational behavior*, *10*(1), 123-167.

Amabile, T. M., & Conti, R. (1999). Changes in the work environment for creativity during downsizing. *Academy of Management journal*, *42*(6), 630-640.

Anderson, N., Potočnik, K., & Zhou, J. (2014). Innovation and creativity in organizations: A state-of-the-science review, prospective commentary, and guiding framework. *Journal of management*, *40*(5), 1297-1333.

Argyres, N. S., & Silverman, B. S. (2004). R&D, organization structure, and the development of corporate technological knowledge. *Strategic Management Journal*, *25*(8-9), 929-958.

Banker, R. D., Hu, N., Pavlou, P. A., & Luftman, J. (2011). CIO reporting structure, strategic positioning, and firm performance. *MIS quarterly*, 487-504.

Brouthers, K. D., & Dikova, D. (2010). Acquisitions and real options: The greenfield alternative. *Journal of Management Studies*, *47*(6), 1048-1071.

Capron, L. (1999). The long-term performance of horizontal acquisitions. *Strategic management journal*, *20*(11), 987-1018.

Capron, L., Mitchell, W., & Swaminathan, A. (2001). Asset divestiture following horizontal acquisitions: A dynamic view. *Strategic management journal*, *22*(9), 817-844.

Cardinal, L. B. (2001). Technological innovation in the pharmaceutical industry: The use of organizational control in managing research and development. *Organization science*, *12*(1), 19-36.

Chatterjee, S., Lubatkin, M. H., Schweiger, D. M., & Weber, Y. (1992). Cultural differences and shareholder value in related mergers: Linking equity and human capital. *Strategic management journal*, *13*(5), 319-334.

Choi, S., & McNamara, G. (2018). Repeating a familiar pattern in a new way: T he effect of exploitation and exploration on knowledge leverage behaviors in technology acquisitions. *Strategic Management Journal*, *39*(2), 356-378.

Chua, R. Y. (2013). The costs of ambient cultural disharmony: Indirect intercultural conflicts in social environment undermine creativity. *Academy of Management Journal*, *56*(6), 1545-1577.

Delaney, J. T., Jarley, P., & Fiorito, J. (1996). Planning for change: Determinants of innovation in US national unions. *ILR Review*, *49*(4), 597-614.

Devers, C. E., McNamara, G., Haleblian, J., & Yoder, M. E. (2013). Do they walk the talk? Gauging acquiring CEO and director confidence in the value creation potential of announced acquisitions. *Academy of Management Journal*, *56*(6), 1679-1702.

Devers, C. E., Wuorinen, S., McNamara, G., Haleblian, J., Gee, I. H., & Kim, J. (2020). An integrative review of the emerging behavioral acquisition literature: Charting the next decade of research. *Academy of Management Annals*, *14*(2), 869-907.

Geletkanycz, M. A., & Boyd, B. K. (2011). CEO outside directorships and firm performance: A reconciliation of agency and embeddedness views. *Academy of management journal*, *54*(2), 335-352.

Gamache, D. L., & McNamara, G. (2019). Responding to bad press: How CEO temporal focus influences the sensitivity to negative media coverage of acquisitions. *Academy of Management Journal*, *62*(3), 918-943.

Garud, R., Tuertscher, P., & Van de Ven, A. H. (2013). Perspectives on innovation processes. *Academy of Management Annals*, *7*(1), 775-819.

Germain, R. (1996). The role of context and structure in radical and incremental logistics innovation adoption. *Journal of Business Research*, *35*(2), 117-127.

Graebner, M. E. (2004). Momentum and serendipity: How acquired leaders create value in the integration of technology firms. *Strategic management journal*, *25*(8-9), 751-777.

Graebner, M. E., Eisenhardt, K. M., & Roundy, P. T. (2010). Success and failure in technology acquisitions: Lessons for buyers and sellers. *Academy of management perspectives*, *24*(3), 73-92.

Grover, V., Purvis, R. L., & Segars, A. H. (2007). Exploring ambidextrous innovation tendencies in the adoption of telecommunications technologies. *IEEE Transactions on Engineering Management*, *54*(2), 268-285.

Gruber, M., Harhoff, D., & Hoisl, K. (2013). Knowledge recombination across technological boundaries: Scientists vs. engineers. *Management Science*, *59*(4), 837-851.

Hage, J., & Aiken, M. (1967). Relationship of centralization to other structural properties. *Administrative Science Quarterly*, 72-92.

Haleblian, J., Devers, C. E., McNamara, G., Carpenter, M. A., & Davison, R. B. (2009). Taking stock of what we know about mergers and acquisitions: A review and research agenda. *Journal of management*, *35*(3), 469-502.

Hecker, D. (1999). High-technology employment: a broader view. *Monthly Lab. Rev.*, *122*, 18.

Hollenbeck, J. R., Ellis, A. P., Humphrey, S. E., Garza, A. S., & Ilgen, D. R. (2011). Asymmetry in structural adaptation: The differential impact of centralizing versus decentralizing team decision-making structures. *Organizational Behavior and Human Decision Processes*, *114*(1), 64-74.

Huang, Z., Zhu, H., & Brass, D. J. (2017). Cross-border acquisitions and the asymmetric effect of power distance value difference on long-term post-acquisition performance. *Strategic Management Journal*, *38*(4), 972-991.

Iyer, D. N., & Miller, K. D. (2008). Performance feedback, slack, and the timing of acquisitions. *Academy of Management Journal*, *51*(4), 808-822.

Jansen, J. J., Van Den Bosch, F. A., & Volberda, H. W. (2006). Exploratory innovation, exploitative innovation, and performance: Effects of organizational antecedents and environmental moderators. *Management science*, *52*(11), 1661-1674.

Johnson, M. D., Hollenbeck, J. R., Humphrey, S. E., Ilgen, D. R., Jundt, D., & Meyer, C. J. (2006). Cutthroat cooperation: Asymmetrical adaptation to changes in team reward structures. *Academy of Management Journal*, *49*(1), 103-119.

Kapoor, R., & Lim, K. (2007). The impact of acquisitions on the productivity of inventors at semiconductor firms: A synthesis of knowledge-based and incentive-based perspectives. *Academy of Management Journal*, *50*(5), 1133-1155.

Keum, D. D., & See, K. E. (2017). The influence of hierarchy on idea generation and selection in the innovation process. *Organization Science*, *28*(4), 653-669.

Knudsen, T., & Levinthal, D. A. (2007). Two faces of search: Alternative generation and alternative evaluation. *Organization Science*, *18*(1), 39-54.

Kogan, L., Papanikolaou, D., Seru, A. and Stoffman, N. (2017). Technological innovation, resource allocation, and growth. *Quarterly Journal of Economics*, 132(2), pp. 665-712.

Larsson, R., & Finkelstein, S. (1999). Integrating strategic, organizational, and human resource perspectives on mergers and acquisitions: A case survey of synergy realization. *Organization science*, *10*(1), 1-26.

Leiponen, A., & Helfat, C. E. (2011). Location, decentralization, and knowledge sources for innovation. *Organization Science*, *22*(3), 641-658.

Lempiälä, T., & Vanharanta, O. (2018). Rethinking the control–freedom paradox in innovation: toward a multifaceted understanding of creative freedom. *The Journal of Applied Behavioral Science*, *54*(1), 62-87.

Liao, Y. (2007). The effects of knowledge management strategy and organization structure on innovation. *International Journal of Management*, *24*(1), 53.

Makri, M., Hitt, M. A., & Lane, P. J. (2010). Complementary technologies, knowledge relatedness, and invention outcomes in high technology mergers and acquisitions. *Strategic management journal*, *31*(6), 602-628.

Mansfield, R. (1973). Bureaucracy and centralization: An examination of organizational structure. *Administrative Science Quarterly*, 477-488.

Martin, X., & Shalev, R. (2017). Target firm-specific information and acquisition efficiency. *Management Science*, *63*(3), 672-690.

McNamara, G., Vaaler, P. M., & Devers, C. (2003). Same as it ever was: The search for evidence of increasing hypercompetition. *Strategic Management Journal*, *24*(3), 261-278.

Moon, H., Hollenbeck, J. R., Humphrey, S. E., Ilgen, D. R., West, B., Ellis, A. P., & Porter, C. O. (2004). Asymmetric adaptability: Dynamic team structures as one-way streets. *Academy of Management Journal*, *47*(5), 681-695.

Nohria, N., & Gulati, R. (1996). Is slack good or bad for innovation?. *Academy of management Journal*, *39*(5), 1245-1264.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization science*, *5*(1), 14-37.

Orton, J. D., & Weick, K. E. (1990). Loosely coupled systems: A reconceptualization. *Academy of management review*, *15*(2), 203-223.

Paruchuri, S., Nerkar, A., & Hambrick, D. C. (2006). Acquisition integration and productivity losses in the technical core: Disruption of inventors in acquired companies. *Organization science*, *17*(5), 545-562.

Porrini, P. (2004). Can a previous alliance between an acquirer and a target affect acquisition performance? *Journal of management*, *30*(4), 545-562.

Prince, J. T., & Simon, D. H. (2009). Multimarket contact and service quality: Evidence from on-time performance in the US airline industry. *Academy of Management Journal*, *52*(2), 336-354.

Puranam, P., Singh, H., & Zollo, M. (2003). A bird in the hand or two in the bush?: Integration trade-offs in technology-grafting acquisitions. *European Management Journal*, *21*(2), 179-184.

Puranam, P., & Srikanth, K. (2007). What they know vs. what they do: How acquirers leverage technology acquisitions. *Strategic management journal*, *28*(8), 805-825.

Ranft, A. L., & Lord, M. D. (2002). Acquiring new technologies and capabilities: A grounded model of acquisition implementation. *Organization science*, *13*(4), 420-441.

Reuer, J. J., & Ragozzino, R. (2008). Adverse selection and M&A design: The roles of alliances and IPOs. *Journal of Economic Behavior & Organization*, *66*(2), 195-212.

Weick, K. E. (1976). Educational organizations as loosely coupled systems. *Administrative science quarterly*, 1-19.

Wingender Jr, J. R., & Kirby, J. (2020). The impact on firm value from the announcement of the appointment of a chief innovation officer. *The Journal of Applied Business and Economics*, *22*(10), 69-80.

Wuorinen, S., Burgess, B., & Wright, P. (2021). Managing Mergers and Acquisitions: Perspectives from Human Resources. *Management and Business Review, 1*(2), 44-52.

Yang, H., Lin, Z., & Peng, M. W. (2011). Behind acquisitions of alliance partners: Exploratory learning and network embeddedness. *Academy of Management Journal*, *54*(5), 1069-1080.

Yu, W., Minniti, M., & Nason, R. (2019). Underperformance duration and innovative search: Evidence from the high-tech manufacturing industry. *Strategic Management Journal*, *40*(5), 836-861.

Zahra, S. A., & Nielsen, A. P. (2002). Sources of capabilities, integration and technology commercialization. *Strategic management journal*, *23*(5), 377-398.

Zannetos, Z. S. (1965). On the theory of divisional structures: Some aspects of centralization and decentralization of control and decision making. *Management Science*, *12*(4), B-49.

CHAPTER 2

INTRODUCTION

The past decade has seen a tremendous uptick in behavioral acquisition research (Devers, Wuorinen, McNamara, Haleblian, Gee, & Kim, 2020). Among the vast array of concepts and constructs examined, one of the more recent developments is the increased degree of accessibility to assess the effects of CEOs' motivational and psychological influences on acquisition decisions. CEOs are the most central decision-making figure within an organization, so their psychology, behaviors, and motivations are bound to have an influence on strategic decisions, which is of interest to researchers. Until recently, research on CEO psychological conditions have been limited by a reliance on survey responses. With the establishment of unobtrusive measures of CEO psychology such as videometrics (Petrenko, Aime, Recendes, & Chandler, 2019) and computer aided content analysis (Pennebaker, Francis, & Booth, 2001), this research is beginning to become more prominent. For instance, Gamache, McNamara, Mannor, and Johnson (2015) examined the regulatory focus of acquiring CEOs, finding that promotion orientation was predictive of more and larger acquisitions, while prevention orientations were negatively related to the same outcomes. In a related study, Gamache and McNamara (2019) examined temporal focus of acquiring CEOs, finding that when managers received negative feedback surrounding an acquisition, their temporal focus was predictive of whether they would pursue subsequent acquisitions. More specifically, past orientation led managers to be less likely to engage in subsequent acquisitions as their focus would be oriented towards the negative feedback they received during their previous acquisition, whereas managers with stronger future orientations were more likely to move on and acquire again. Taken together, these two studies have begun to home in on the motivational psychology that helps to explain why some managers

63

are instinctively prone to pursue more acquisitions than others and highlights the critical role that managers' psychological traits play in strategic decision making.

Despite the headway that has been made in this line of inquiry, these insights have been based solely off the examination of what drives acquiring CEOs, making these insights yet incomplete. Without a target, there cannot be an acquisition, and although the acquiring firm and manager tend to draw the most attention in an interaction, continue to ignore the motivations and influences the target firm and CEO have on the eventual outcomes of the deal is a myopic approach. In short, it takes two to make a deal. Thus, the examination of one side of an acquisition without accounting for the influence of the other, or the joint influences of both, leaves us with an incomplete understanding of the relationship between CEO psychological traits with acquisition processes and outcomes. As such, an important consideration that has been thus far overlooked is the joint psychological influences of the acquiring and target CEOs that emerge throughout the acquisition process due to interactions that occur by way of due diligence and negotiations. Just as acquiring CEOs focus on specific types of information, motivating them to pursue a deal, so too do target CEOs, driving them to sell (Bergh, Johnson, & Dewitt, 2008; Buchholtz & Ribbens, 1994; Graebner, Eisenhardt, & Roundy, 2010; Kolev, 2016; Kuusela, Keil, Maula, 2017). CEOs are the single most central decision-making figure of an organization and have been shown to have a great amount of influence over merger and acquisition decisions and subsequent outcomes (Meyer-Doyle, Lee, & Helfat, 2019). This applies to CEOs no matter what side of the deal they are on; thus, each will have influences over the deal via their interactions with one another throughout the deal process.

This study aims to extend beyond research that has examined the motivational attributes of acquiring managers to account for the interactions that occur between the acquiring and target

CEOs during an acquisition. Specifically, I investigate the psychological interplay that occurs between negotiating CEOs in respect to their regulatory orientations to determine how much of an impact their specific psychological combination influences acquisitions. Promotion and prevention orientations are distinct constructs and can each influence the decisions of an individual. Thus, I examine both regulatory orientations and the relationships among merging CEOs regulatory fits and acquisition outcomes.

Furthermore, this inquiry can determine whether the exact makeup of managerial regulatory profiles between acquiring and target CEOs affects acquisition outcomes. Prior research has proposed that certain regulatory orientations are more congruent with distinct roles in a negotiation and can significantly influence the ultimate outcomes (Appelt, Zou, Arora, & Higgins, 2009). Specifically, it has been argued that the prevention orientation is more congruent with the buyer role and promotion orientation is more congruent with the seller role. One of the major findings within this research is that as managers experience greater regulatory fit with their role in a negotiation their demands become increasingly aggressive. As role congruency has been demonstrated to influence the demandingness of negotiators, the expectation is that the outcomes of an acquisition will be influenced both by the degree of fit the acquiring manager has with their role and the target manager with theirs. Thus, I examine whether the strength of each manager's regulatory orientations fit with their role within the acquisition, subsequently influencing the terms and outcomes of a given acquisition. In considering the psychological influences of both CEOs in the context of one another, we move closer to gaining a more complete understanding of why acquisitions unfold in the manner that they do.

This study offers contributions to both the behavioral acquisition and regulatory focus literatures. In terms of extending the behavioral acquisition literature, my study begins to address

the shortcomings that have formed during the rapid growth of this body of literature (Devers et al., 2020). By emphasizing the acquiring and target CEOs equally, my study begins to illuminate the influences that the target manager can have in conjunction with the acquirer in determining the outcome of a potential deal. Further, my study extends research at the interorganizational level, which has up till now been limited to existing relationships or networks (Bodnaruk & Rossi, 2016; Cai & Sevilir, 2012; Cai, Kim, Park, & White, 2016; Ishii & Xuan, 2012; Lin, Peng, Yang, & Sun, 2009) and environmental or institutional conditions (Bertrand, Betschinger, & Settles, 2016; Bris & Cabolis, 2008; Capron & Guillén, 2009; Lee, 2018; Slangen, 2011). By investigating the interpersonal influences that come out of the interactions each CEO has with one another throughout the acquisition process, I extend this literature by integrating research at the individual and interorganizational level to investigate how managerial personalities jointly predict aspects of acquisitions.

In addition to the examination of joint influences of the acquiring and target CEOs, my study also extends the focus of acquisition predictions beyond that of acquisition quantity to examine how the regulatory focus of acquiring and target CEOs influences acquisition terms, processes, and eventual outcomes. Though the executive psychological vein of acquisitions research is still in a nascent stage, most studies in this area have focused primarily on acquisition proclivity and size (e.g. Chen, Crossland, & Huang, 2016; Gamache et al., 2015; Gamache & McNamara, 2019). As such, research on executive personalities within the behavioral acquisition literature has thus far overlooked some key elements of acquisitions. Beyond the prediction of whether an acquisition is likely to occur, other elements influenced by executive negotiations would be the premium paid by the acquirer to the target firm and how the market responds to the

announcement of an acquisition. The examination of these elements adds to this vein of research and continues to build the collective behavioral acquisitions literature.

This study also contributes to the literature on regulatory focus. While there is a wealth of research that has been conducted on regulatory fit between individuals in the negotiation literature (Appelt et al., 2009; Cesario, Grant, & Higgins, 2004; Galinsky, Leonardelli, Okhuysen, & Mussweiler, 2005; Monga & Zhu, 2005; Peng, Dunn, & Conlon, 2015), the collective research has pointed in a vast array of directions that propose to explain the relationship between regulatory fit and negotiation outcomes. This disparate set of findings could be due to the large portion of these studies relying on laboratory investigations where the subjects have very little, or no, "skin in the game." Bringing this investigation into the realm of corporate negotiations may be able to contribute to clearing up and making better sense of these collective studies. Looking to mergers and acquisitions, which represent high stakes, real consequence negotiations, we are able to observe what the relationship of regulatory fit is when the stakes are heightened. Further, due to the settings in which these studies took place, there is no way of accounting for environmental contexts, institutional pressures, or personal considerations such as compensation (Gamache et al., 2015) that can influence these relationships. Extending these inquires to the real world where managers are making critical decisions involving a tremendous amount of risk and uncertainty, directly impacting their own personal wealth and financial health of the company, helps to provide a much more rigorous test of the theory of regulatory fit. The current study serves to test the concept of regulatory fit between CEOs in large scale strategic negotiations where managers each have much to potentially gain or lose, increasing the importance of examining their orientations.

THEORY AND HYPOTHESES

Regulatory focus theory distinguishes between the ways in which individuals set and pursue their goals (Higgins, 1998). Promotion focus is associated with striving for advancement and growth with an acute sensitivity to gains, while prevention focus is more about stability, security, and a sensitivity to losses (Johnson, Chang, & Yang, 2010; Lanaj, Chang, & Johnson, 2012). Said another way, promotion focus is associated with eagerness while prevention focus is associated with vigilance (Cesario, Higgins, & Scholer, 2008). In addition to the regulatory orientation individuals have, prior research has also distinguished between regulatory modes. Locomotion mode is about a concern with moving from state to state, emphasizing taking action over delaying. Alternatively, assessment mode is about a concern with making comparisons between goals, methods of achieving those goals, and evaluating alternatives (Higgins, Kruglanski, & Pierro, 2003). When looking to the differences between regulatory orientations versus regulatory modes it appears that regulatory orientations are more specific to the motivations that drive decision making or goal setting whereas modes are more specific to the processes in which decisions are made or goals are pursued. Both regulatory orientation and mode appear to be promising avenues for explaining acquisition behavior, for the purposes of this study and extending from the prior research that has already been established in the behavioral acquisition literature, I focus on the motivations that drive acquisition decision making and thus leverage promotion and prevention orientation.

Although individuals can be driven by and display characteristics of both promotion and prevention orientations in various contexts, the degree to which individuals are influenced by each orientation is expected to drive many of their decisions. Research conducted at the micro level has demonstrated that the differences in the relative influence of an individual's promotion

and prevention orientations manifest in an array of distinct outcomes such as the types of goals individuals strive for (Johnson, Chang, & Yang, 2010; Lanaj, Chang, & Johnson, 2012), attention filtering (Higgens & Spiegel, 2004), unethical behavior (Gino & Margolis, 2011), creativity (Baas, De Dreu, & Nijstad, 2011) and decision-making error types (Crowe & Higgens, 1997); all of which would be expected to influence managerial strategic decisions.

Bringing this investigation to the macro-organizational level, Gamache, McNamara, Mannor, and Johnson (2015) examined the regulatory focus of acquiring managers finding that promotion orientation was positively related to acquisition proclivity while prevention orientation was negatively associated. While Gamache and colleagues (2015) contributed much by bringing the regulatory focus and acquisitions literatures together, the examination of acquisitions would be incomplete without accounting for the effects of the target managers. Prior to the completion of an acquisition, acquiring and target managers come together to complete due diligence, negotiate terms of the deal, and eventually agree on terms to complete the acquisition. As such, each manager has the opportunity to exert their influence on the deal in an effort to secure the most positive outcome for their respective firms. However, the question becomes how demanding each manager will be during the negotiation process and at what point will managers feel their demands have been met to a satisfactory level. The answers to these questions may begin to emerge when looking through a regulatory fit lens.

Regulatory fit generally refers to the ability of an individual's regulatory profile to mesh with other relevant conditions to facilitate more desirable outcomes. For instance, the regulatory fit of individuals has been demonstrated to produce such outcomes when fit is observed with aspects such as communication styles (Cesario et al., 2004), fit with another individual (Bohns et al., 2013; Galinsky et al., 2005; Peng et al., 2015; Shin, Lee, & Seo, 2017), exploration and

69

exploitation decision making in innovation (Ahmadi, Khanagha, Berchicci, & Jansen, 2017), and congruency with their role in an event (Appelt et al., 2009). In terms of predicting the ultimate outcomes in acquisitions, the most prominent types of fit are expected to be interpersonal fit experienced between negotiating managers and role congruency as either the acquiring or target CEO.

Interpersonal regulatory fit is expected to influence acquisition negotiations due to a common understanding and an appreciation of similar information. Managers with common regulatory profiles are likely to think in similar fashions, be driven by the same types of goals, and strive for these goals using similar strategies. Furthermore, while evaluating environmental and strategic conditions, managers with similar psychological traits are also likely to consider and value the same information, leading them to a common understanding which can subsequently facilitate more efficient communication and negotiation. Providing some initial evidence of these assertions, interpersonal regulatory fit has been found to be beneficial for the instrumentation of goals, motivation, enjoyment, simply "feeling right" (Righetti, Finkenauer, & Rusbult, 2011), and more effective and efficient communication between individuals (Lee & Aaker, 2004). A potential explanation of the underlying mechanism for these effects lies in the attentional filtering of similar information as determined by psychological, background characteristics, and values (Hambrick & Mason, 1984). If managers filter and place value on the same information as determined by their psychological characteristics, such as regulatory focus, then it is expected that managers will benefit from superior communication, common understanding of one another, and an inherent common understanding of the environment surrounding their negotiation.

In a related stream of research, Similarity Attraction Theory (Byrne, 1971) posits that people will seek out, or be naturally attracted, and share more positive relationships with other individuals that share similar psychological characteristics. The basic premise of this theory is that individuals will understand, exhibit affect towards, and value individuals whom they deem to have similar mindsets as themselves. In the context of an acquisition negotiation, this affect may translate into a greater effort to make the deal work and meet the needs of their counterpart as well as their own. In fact, the proposed effects have been found in contexts such as college applicant interviews (Graves & Powell, 1995), interactions with strangers (Condon & Crano, 1988), and friendship developments (Schug, Yuki, Horikawa, & Takemura, 2009). Each of these studies found that individuals were more attracted to and shared improved interpersonal benefits with those that were more similar. Supporting the perspectives of interpersonal fit and SAT, studies in the negotiation literature have demonstrated that individuals who share similar regulatory profiles have been able to achieve superior performance (Galinsky et al., 2005; Johnson, Lin, Kark, Van Dijk, King, and Esformes, 2017; Peng, Dunn, & Conlon, 2015).

The other critical fit dimension for regulatory focus in acquisitions is with the role played by each manager within the negotiation. Specifically, in most traditional acquisitions, there is an acquirer and a target, or a buyer and a seller. Within these acquisition negotiations, the naturally expected tendency is for acquirers to attempt to complete the deal while preserving as much of their available resources as possible, or more simply, to make the acquisition while spending the least amount of cash (Appelt et al., 2009). This goal for the acquirer is most congruent with a prevention orientation, which strives to minimize losses. Alternatively, sellers are expected to act and negotiate in a manner that allows them to capture the most value possible by driving the acquirer to pay higher premiums. Thus, the seller's goal is most congruent with a promotion

71

orientation, striving to maximize gains. As such, the degree to which congruency between a manager's regulatory profile and the role they play within an acquisition holds the potential to exert influence over the eventual terms or outcomes of a deal.

Regulatory fit with roles within negotiations was initially proposed by Appelt, Zou, Arora, and Higgins (2009) where they demonstrated that buyers and sellers play distinct roles within a negotiation which are influenced by the strength of their goal orientations. It was found that regulatory fit with roles in a negotiation effectively influenced how demanding negotiators would be. Specifically, they found that when buyers experienced role congruency via greater prevention orientation, their demandingness was significantly stronger, evidenced by asking for significantly lower prices. Similarly, when sellers experienced regulatory fit with their role by having a greater promotion orientation, their demandingness was also significantly stronger, as demonstrated by asking for much higher prices. The alternative case, role incongruency, was found to result in less demanding offers on each side. Thus, it would seem that the degree of regulatory fit with the roles each manager plays in an acquisition negotiation could potentially sway the negotiation one way or the other depending on the relative demandingness of each manager. For example, if one manager exhibits role congruency between their regulatory profile and their role, while the other manager does not, the manager with congruent role fit will be naturally more demanding in the negotiation. Without a counterbalancing manager that also exhibits role congruency, the expectation is that the demandingness of the role congruent manager will outweigh that of the incongruent manager, resulting in a more favorable outcome for the more demanding negotiator. As such, it becomes clear that in the context of acquisitions, which tend to be relatively large, complex, risky, and expensive strategic actions, this form of

regulatory fit should be especially salient in the negotiation phase of these events, helping to shape the ultimate outcomes.

On the surface, suggesting that managers that exhibit stronger prevention orientations would achieve role congruency with the acquiring role in acquisitions would appear to contrast the findings of Gamache and colleagues (2015), which found that acquirers with higher promotion orientations acquired at higher rates and made bigger acquisitions. However, these findings are in fact aligned with these propositions. Although the promotion orientation would be classified as being incongruent with the acquiring role, the findings that these managers would acquire bigger and acquire more makes sense, as these managers would also be less demanding over the price, allowing the needs of the target to be met easier. Further leveraging the logic invoked by Gamache and colleagues, stronger promotion orientations will drive managers to be more eager to complete acquisitions, focused on the potential gains that could be achieved following the completion of the acquisition as opposed to the focusing on minimizing the losses incurred due to the price paid to complete that acquisition. Alternatively, consider the case of an acquiring and target manager that each have congruency with their roles, an acquiring manager with a greater prevention orientation and a target manager with a greater promotion orientation. As both managers experience greater role congruency between their regulatory foci and role in the deal, they will each be increasingly demanding over the terms of the deal, making it less likely that an eventual deal could be reached.

Together, the arguments for interpersonal regulatory fit and role congruency regulatory fit can be used to predict the eventual acquisition terms and outcomes.

Acquisition premium terms

In the context of acquisitions, the premium paid by the acquiring firm to the target firm is the price agreed upon between each firm to compensate the target firm over and above the prior market value of the organization. The premium is one of the most salient outcomes for acquisitions, as this deal term can have implications for the entire deal (Krishnan, Hitt, & Park, 2007; Laamanen, 2007; Reuer, Tong, & Wu, 2012). Furthermore, when considering the broader negotiation literature, the premium paid in an acquisition is the most relevant outcome for gauging the price negotiation that occurred between the acquiring and target managers. In a general sense, larger premiums could be viewed as a victory for targets whereas smaller premiums could be viewed as a victory for acquirers.

The most salient fit aspect for acquisition premium is the congruency managers have with their role due to the implications it has for demandingness. The premise of predicting the outcomes for the terms of an acquisition lies in the degree to which managers will be demanding in their negotiations (Appelt et al., 2009). A suitable analogy for the prediction of these outcomes could be a tug of war, where although strength is important, sheer will typically determines the "winner." In this case, the regulatory profiles of managers can be assessed for role congruency in order to determine how contested the negotiation will be or whether certain managers are likely to be less demanding, allowing their opposing counterpart to negotiate for better terms for themselves, or more demanding, by attempting to sway the deal in their favor. In terms of regulatory orientations, a stronger acquiring managers' prevention orientation would represent more role congruent behavior. This behavior would be expected to drive acquiring managers to demand lower premiums be paid in any given deal, as their focus will be on minimizing losses incurred due to overpayment (Appelt et al., 2009).

Although acquiring managers are expected to drive down the price premium when they exhibit role congruency by having strong prevention focus, target managers also have an influence over the ultimate premium paid in an acquisition. Interactions between increasing levels of regulatory orientations which represent role congruency for one manager, but not the other, are expected to generate exceedingly high or low acquisition premiums as the relative strength of demandingness over the price will allow the manager with role congruency to drive the terms of the deal in their favor (Appelt et al., 2009). This situation occurs when considering the case where both managers are highly prevention focused. Acquiring managers with greater prevention focus are expected to exhibit role congruency with their role as the buyer within the deal, as their prevention tendencies would drive them to be more demanding over keeping the price premium at a minimum (Appelt et al., 2009). On the opposite side of the table, the target manager would be expected to be incongruent with their role if they also exhibit a strong prevention orientation. Thus, rather than focusing on maximizing their potential gains through the acquisition, their attention would be diverted to other aspects of the deal where their goal would be to minimize potential losses or act in a manner to avoid losing the deal altogether. Although the natural role of sellers is to drive up the price, when considering managers that exhibit stronger prevention orientations, managers would exert caution as their focus would be on avoiding the loss of the deal leading them to be more content with lower premiums. Thus, acquiring managers could afford to be more demanding and drive the premium down even further, better fulfilling their goal of minimizing losses.

H1a: Acquiring CEO prevention focus is negatively related to acquisition premium.

H1b: The relationship between acquiring CEO prevention focus and acquisition premium is moderated by target CEO prevention focus such that the relationship is more negative when the target CEO is high in prevention focus.

Alternatively, the promotion orientation for acquiring managers would be less representative of role congruency as the strength of this psychological driver increases. Characterized by eagerness (Cesario et al., 2008) as promotion focus increases, acquiring managers would be more likely to focus on the potential of the focal deal as opposed to minimizing the cost required to complete that deal. As such, greater levels of prevention orientation and lower levels of promotion orientation are expected to represent the greatest degrees of role congruency for acquiring managers, motivating them to reduce the premium paid in an acquisition while the opposite case is expected to lead acquirers to increase their willingness to pay higher premiums.

Similar to the case of prevention orientation, these effects should also be considered in conjunction with the motivations of the target manager. Stronger promotion orientations of both managers are the ideal conditions for higher premiums as an acquirer that exhibits higher levels of promotion focus will be eager to make a deal (Gamache et al.,, 2015), focusing on the potential gains that could result from the completion of the acquisition and will be less concerned with keeping the ultimate price of the acquisition down; all of which is at odds with the natural tendency of what would be expected from this role in terms of a price negotiation (i.e. role incongruency). Meanwhile, target managers who also exhibit higher levels of promotion orientation will be prepared to capitalize on this lack of vigilance due to their role congruency, demanding higher prices (Appelt et al., 2009). Target managers in this case will be seeking to fulfill their role in a price negotiation by driving the price up, which is likely to succeed due to

the willingness of the acquiring manager to accommodate these demands. Thus, the expectation is that premiums would be at their highest as the buyer role meant to balance the scale by pushing for lower prices is not fulfilling that function, as it is being undermined by the acquiring manager's promotion orientation.

> *H2a: Acquiring CEO promotion focus is positively related to acquisition premium.*

> *H2b: The relationship between acquiring CEO promotion focus and acquisition premium is moderated by target CEO promotion focus such that the relationship is more positive when the target CEO is high in promotion focus.*

Acquisition market reaction

Once managers have reached a point where they believe they can satisfactorily reach an agreement, acquisitions are announced to the public, often eliciting a reaction from investors as reflected in stock prices. The cumulative abnormal returns (CARs) from these market reactions have been used in prior research as an indication of the evaluations the market has regarding the expected value of the deal, with more positive CARs representing a positive market sentiment and negative CARs indicating that the market questions the prospects of the deal (Haleblian et al., 2009; Schijvin & Hitt, 2012). Furthermore, it has been suggested that in making their evaluations and subsequent reactions, investors attempt to collect as much publicly available information as possible and evaluate the prospects of the deal from the perspective of the acquiring manager (Schijven & Hitt, 2012). As such, after investors collect the information they seek, in considering the case of acquiring managers with strong prevention orientations, investors should be accustomed to recognizing the vigilant nature of the CEO and adopt the perspective that the deal was likely done with vigilant due diligence.

Perception may be reality, but the underlying logic for vigilant managers arriving at sounder acquisition decisions has merit on its own. In the event of a merger or acquisition between two firms led by managers with strong prevention orientations, the expectation is that the vigilant nature of each manager will lead to a better acquisition. The focus of each manager on minimizing losses (Johnson et al., 2010) will drive each manager to approach a potential deal with caution and vigilance (Cesario et al., 2008), meticulously evaluate the various components of the deal, and gather as much information as possible in an effort to get as close to certainty that the deal will be a success. This notion appears to be supported as Crowe and Higgins (1997) demonstrated that prevention focused individuals operated conservatively in an effort to make correct rejections and avoid errors of commission, resulting in their taking longer to make decisions, signaling a meticulous approach. This also points to the idea that the vigilant nature of managers with strong prevention orientations, when they do decide to follow through with an acquisition, will make almost certain the deal will be a success. This type of behavior is also expected to be pervasive across all types of strategic decision making by a given manager. As such, current and prospective investors will be familiar with the decision-making tendencies for these managers, taking this history into account when evaluating an acquisition announcement. Investors should then find it easier to recognize the logic and vigilant reasoning that went into the deal, resulting in a more positive evaluation.

> *H3a: Acquiring CEO prevention focus is positively related to the market reaction to the acquiring firm.*

> *H3b: The relationship between acquiring CEO prevention focus and the market reaction to the acquiring firm is moderated by target CEO prevention focus such that the relationship is more positive when the target CEO is high in prevention focus.*

78

Operating under similar assumptions regarding investors, overly eager acquiring managers paired with target managers prepared to maximize their gain is a recipe for a poor market reaction to the acquiring firm. Acquiring managers with strong promotion orientations that have had their eagerness demonstrated through the positive relationship they share with acquisition proclivity and acquisition size (Chen, Crossland, & Huang, 2016; Gamache et al., 2015). Focusing on the potential gains that could be had in an acquisition is only further exacerbated when considering executive granted stock options (Gamache et al., 2015), and the increases in total compensation that are also expected upon completing an acquisition (Seo, Gamache, Devers, Carpenter, 2015). As such, all signs point to an over-eagerness to complete deals when acquiring managers exhibit stronger promotion orientations, which increases the probability of making errors of commission leading to poorer market reactions (Crowe & Higgins, 1997).

Paired with target managers who also exhibit stronger promotion orientations, the eagerness of the acquiring manager is expected to be exploited by target managers who also shares a desire for the maximization of gains. However, in the case of a target manager, the gains to be maximized are the ultimate price paid by the acquirer to complete the deal. Prior research has demonstrated that as the final price paid by the acquirer increases, investors tend to question how much value is left to be captured by the acquiring firm, leading to less positive reactions (Laamanen, 2007; Schijven & Hitt, 2012). Thus, when acquiring managers lack vigilance and have an over-eagerness to complete a deal, the opportunity emerges for target managers that strive to maximize their gains to fulfill their goal. Again, when an acquisition is announced to the market, investors gather as much information as possible and attempt to evaluate the prospects of the deal from the managers perspective. When the market identifies an overly eager acquirer as

79

evidenced by a history of risky strategic decision making and higher acquisition premiums, suggesting that the firm rushed into an acquisition and potentially overpaid, questions will be raised regarding the quality of the deal. As such, it is predicted that the market reaction will have the most negative relationship with pairs of negotiating managers that share strong promotion orientations.

> *H4a: Acquiring CEO promotion focus is negatively related to the market reaction to the acquiring firm.*

> *H4b: The relationship between acquiring CEO promotion focus and the market reaction to the acquiring firm is moderated by target CEO promotion focus such that the relationship is more negative when the target CEO is high in promotion focus.*

Mediation and moderated mediation

In addition to the separate predictions of acquisition premium and market reaction to the acquiring firm, the arguments for the prediction of market reaction also points to the possibility that acquisition premium mediates the relationships between the regulatory orientations and market reaction. Specifically, prior research has suggested that as acquisition premium increases, the amount of value left to be captured by the acquiring firm decreases (Laamanen, 2007; Schijven & Hitt, 2012). This information will be incredibly salient to investors as their primary concern, in terms of a given acquisition, is whether there is enough value for the acquirer to capture that the gains will translate to value for themselves. Thus, because acquiring managers with greater prevention orientations are expected to drive the premium of the acquisition down, effectively preserving the value to be captured, the market reaction is expected to be more positive. Alternatively, as acquiring managers' promotion orientations increase, they will be

80

willing to pay higher premiums, effectively reducing the value left to be captured, leading investors to respond less favorably. Due to the integral role acquisition premiums are expected to play in the evaluations that investors have for a given acquisition, the expectation is that acquisition premium will mediate the relationships between each regulatory focus and market reaction to the acquiring firm.

>*H5a: The positive relationship between acquiring CEO prevention focus and market reaction to the acquiring firm is mediated through acquisition premium.*

>*H5b: The negative relationship between acquiring CEO promotion focus and market reaction to the acquiring firm is mediated through acquisition premium.*

Although acquisition premium is expected to mediate the relationships between the acquiring managers' regulatory foci with market reaction to the acquiring firm, there is still the target manager and their regulatory foci to consider. As such, in line with the prior arguments that target managers' regulatory foci are expected to moderate the relationships, it is further expected that a moderated mediation model would best represent these relationships.

>*H6a: Target CEO prevention focus moderates the indirect effect of acquiring CEO prevention focus on market reaction to the acquiring firm through acquisition premium.*

>*H6b: Target CEO promotion focus moderates the indirect effect of acquiring CEO promotion focus on market reaction to the acquiring firm through acquisition premium.*

METHODS

Sample

In order to examine these hypotheses, I utilize a sample of all majority U.S. acquisitions completed from 2010 through 2020 consisting of publicly traded acquiring and target firms. To be included in the sample the acquirer must have acquired at least fifty percent stake in the target and each firm must be publicly traded to provide the opportunity to collect sufficient information to establish the regulatory foci of each CEO involved in the acquisition. All acquisition data was be collected from ThomsonOne, firm and industry data from COMPUSTAT, and CEO regulatory focus data from quarterly earnings calls evaluated with Linguistic Inquiry and Word Count (LIWC) software.

Dependent variables

Acquisition premium is be measured as the purchase price per share of the target firm subtracting the 7-day pre-acquisition share price and divided by the 7-day pre-acquisition share price. Following prior research, in addition to the 7-day acquisition premium window, I also conducted robustness checks of the premium window by examining the effects when using announcement day and 30-day windows (Schijven & Hitt, 2012).

Market reaction is operationalized as a cumulative abnormal return (CAR) measure associated with the acquisition announcement, which has been argued and demonstrated to be a viable measure of the market's evaluation of the deal's potential (Finkelstein & Haleblian, 2002; Haleblian & Finkelstein, 1999; Hayward, 2002; McNamara, Haleblian, & Dykes, 2008). CARs were estimated using an event-study methodology, reporting the cumulative difference between the observed and predicted return of an acquiring firm's share prices during an event window

that surrounds the announcement of an acquisition. Thus, CAR represents the difference between actual return of a share price for the event window and what the normal return of the share price would have been if the acquisition had not occurred. The following formula was used to estimate the CARs for each acquisition in my sample: $AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt})$, in which R_{it} and R_{mt} are the returns on security i and the market portfolio m for the period t, α_i is the constant, and β_i is the beta of security i. Parameters α and β will be assumed constant for the estimation period which will begin 295 days prior to the announcement date and end 45 days prior to the announcement date (e.g. McNamara et al., 2008). I utilize the CAR measured over each 5-day window (2 trading days before to 2 trading days after the announcement of an event) as the primary test of my market reaction hypotheses, however, I also conducted robustness tests on 1, 3, 7, and 15 day windows as well.

Independent variables

CEO regulatory focus measures were collected from quarterly earnings calls throughout the timeframe of my sample. In order to capture the degree to which each manager is promotion and prevention oriented, I content analyzed each quarterly earnings call report collected from 2007 through 2020, identifying transcripts during the presentation section where the CEO is speaking. Q&A sections where the CEO is answering questions were excluded as prior research has demonstrated that the nature of the question shapes the nature of the response (Kanze, Huang, Conley, & Higgins, 2018). For example, if an analyst were to ask a question about how the firm plans to respond to filed lawsuit, which would appear to be prevention focused, the expected response from a manager would be framed in a prevention focus. Alternatively, a question about how the firm plans to expand its product offerings is promotion focused by nature and would elicit a promotion focused response. As such, these analyses were based on the

presentation section of the earnings call, where managers are conveying the messages that they believe to be the most important. Content analysis of documents has become a common and accepted method by which to establish psychological characteristics of managers (Gamache et al., 2015; Gamache & McNamara, 2019; Nadkarni & Barr, 2008, Nadkarni & Chen, 2014). Utilizing LIWC software (Pennebaker, Francis, & Booth, 2001), each quarterly earnings call report was content analyzed utilizing the regulatory focus dictionary developed and validated by Gamache and colleagues (2015). Then, to establish a reliable psychological measure leading up to the point of acquisition, I took the mean level of the promotion and prevention measures of each quarterly earnings call over the past three years prior to the focal acquisition for each CEO.

Control variables

Following the precedent set by acquisitions research, I controlled for a number of variables which have been exhibited to influence acquisition outcomes. First, at the firm level I controlled for the acquiring firm's *firm performance* which was measured as the return on assets in the year prior to the acquisition (McDonald, Westphal, & Graebner, 2008). I control for this because firm performance has been shown to influence the willingness and ability of firms to make an acquisition. For similar reasons, I control for *firm size* which was measured as the average sales of the acquiring firm in the year prior to the acquisition (Gamache & McNamara, 2019), *free cash flow* calculated as follows: ((Operating income – taxes – interest expense – depreciation – dividends) divided by assets) (Brush, Bromiley, & Hendrickx, 2000), and *liquidity* as the acquiring firm's current assets divided by current liabilities in the year prior to the acquisition. Further, to control for acquisition specific considerations, I control for *acquisition size*, measured in millions of dollars. I also include a dichotomous variable indicating whether the acquisition is diversifying or horizontal. *Diversifying acquisition* is one if the acquiring and

target firms' primary Standard Industry Classification code indicates that they compete in different industries and zero if they match, indicating they compete in the same industry.

At the industry level, I also control for the rate of change and growth within the acquiring industry by controlling for industry dynamism and industry munificence. Following prior research, these variables were created by regressing industry sales on a variable representing a five-year window preceding the focal acquisition. By dividing the standard error by the average of industry sales of that five-year window, the measure for *industry dynamism* is created. As for *industry munificence,* the regression coefficient is divided by the average of industry sales for that five-year window (Gamache & McNamara, 2019; McNamara, Vaaler, & Devers, 2003). I also control for *industry concentration* within the acquiring firm's industry by creating a Herfindahl index for the sales of each firm within the industry (Geletkanycz & Boyd, 2011; Prince & Simon, 2009). Industry dummies are also included to capture additional industry specific variance and year dummies to capture any additional macroeconomic variance in the sample.

Last, because there are two distinct regulatory orientations, it is important to evaluate the effects of each orientation in the context of the other. As such, in analyses examining one orientation (promotion or prevention) of the merging CEOs, the other orientation was included in the model to ensure that the effects of each orientation for each manager is taken into account when estimating the relationships.

Estimation technique

All variables were standardized so as to have a mean of zero and a standard deviation of one. As the sample consists of individual acquisitions involving unique combinations of

acquirers and targets, the sample for these predictions are cross-sectional in nature. Additionally, all the dependent variables for these models are continuous; therefore, it is appropriate to estimate these effects with ordinary least squares (OLS) regression. In an effort to account for non-independence within my sample, I clustered the standard errors by firm.

Robustness tests

Last, to identify whether my analyses are driven by endogeneity due to omitted variables, I conducted an impact threshold for confounding variable (ITCV) test (Busenbark, Yoon, Gamache, & Withers, in press). The ITCV test estimates the extent to which an omitted variable would need to be correlated with each independent and dependent variable to invalidate the hypothesized causal inferences. Further, the ITCV test is relative to the variables observed in the study, so, the reported correlations are then compared to the correlation matrix of the variables in the modeled analysis. If no covariates in the correlation matrix reaches the minimum correlation reported by the ITCV, the interpretation would be that it is unlikely that there is a variable that would meet the criteria to invalidate the causal inferences, making endogeneity from omitted variable bias unlikely.

RESULTS

In addition to indicating the likelihood that an omitted variable may invalidate an effect that has been found, the ITCV can also serve to estimate whether a null effect is potentially disguised due to an omitted variable. As such, I conducted the ITCV test for acquiring prevention focus and promotion focus when predicting premium as well as when predicting market reaction. Of these conditions, the lowest threshold indicated by the ITCV test that would indicate whether an omitted variable might mask an effect for these variables was estimated to be

a variable that shared a correlation with the dependent variable of 0.18 and a correlation with the predictor variable of 0.18. Further, at least 25% of the observation would need to be biased. Looking to the correlations in Table 2.1, none of the variables included in this study fit these criteria, thus making it unlikely that an effect is being hidden due to an omitted variable.

Descriptive statistics and correlations are presented in Table 2.1. In Hypothesis 1a, I argued that the acquiring CEO's prevention focus would be negatively related to the acquisition premium and in Hypothesis 1b, that this relationship would be moderated by the target CEO's prevention focus such that the relationship would be more negative when the target CEO had a high level of prevention focus. Additionally, I proposed in Hypothesis 2a that the acquiring CEO's promotion focus would be positively related to the acquisition premium and in Hypothesis 2b, that this relationship would be moderated by the target CEO's promotion focus such that the relationship would be more positive when the target CEO had a high level of promotion focus. Table 2.2 reports the results for this set of hypotheses. Model 2 of Table 2.2 demonstrates that the main effect of acquirer prevention focus is non-significant (b = -0.00, p = 0.24) as well as acquirer promotion focus being non-significant (b = 0.00, p = 0.50). Model 3 of Table 2.2 also demonstrates that the interaction between merging managers' prevention foci is also non-significant (b = -0.00, p = 0.45). Model 4 of Table 2.2 shows a marginal negative effect which is opposite from the prediction in the interaction between merging managers' promotion foci (b = -0.00, p = 0.10). Overall, the data fails to provide any support for Hypotheses 1 and 2.

For Hypothesis 3a, I suggested that the acquiring CEO's prevention focus would be positively related to the market reaction to the acquisition and in Hypothesis 3b, that this relationship would be moderated by the target CEO's prevention focus such that the relationship would be more positive when the target CEO had a high level of prevention focus.

Table 2.1. Descriptive Statistics and Correlations [a]

	Variable	Mean	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Acquisition premium	0.43	1.14														
2	Market reaction	-0.35	2.07	-0.03													
3	Firm performance	0.04	0.11	0.02	0.03												
4	Firm size ($B)	12.36	26.01	0.02	-0.06	0.09											
5	Free cash flow	0.04	0.07	-0.04	0.04	0.08	0.07										
6	Liquidity	1.90	2.27	0.01	0.10	0.61	-0.08	0.34									
7	Acquisition size ($B)	4.70	9.62	-0.05	-0.10	0.03	0.61	0.02	-0.09								
8	Diversifying acquisition	0.55	0.50	0.01	0.09	0.03	-0.11	-0.02	0.04	-0.02							
9	Industry dynamism	0.02	0.02	-0.07	-0.09	-0.07	-0.05	0.01	-0.12	-0.04	-0.22						
10	Industry munificence	0.03	0.08	-0.08	0.07	-0.02	-0.01	-0.03	-0.09	0.02	0.11	0.07					
11	Industry concentration	0.20	0.43	0.02	-0.05	-0.03	-0.03	-0.00	-0.06	-0.04	-0.23	0.10	-0.06				
12	Acquirer promotion	1.68	0.73	0.04	0.06	0.03	0.02	0.12	-0.06	0.00	-0.05	-0.12	-0.20	-0.07			
13	Acquirer prevention	0.15	0.22	-0.05	0.06	0.00	-0.08	-0.04	0.00	-0.08	0.06	-0.10	0.05	0.00	-0.07		
14	Target promotion	1.57	0.64	-0.06	-0.08	-0.06	0.10	-0.00	-0.14	0.09	-0.02	-0.05	-0.06	-0.07	0.24	0.01	
15	Target prevention	0.15	0.18	0.11	-0.11	0.08	-0.01	-0.00	0.04	-0.04	0.01	-0.14	-0.01	-0.08	0.07	0.33	0.05

[a] N = 213; the absolute values of correlation coefficients greater than 0.13 are significant at $p < 0.05$.

Table 2.2. CEO Regulatory Foci Predicting Acquisition Premium [a]

Variable	1	2	3	4	5
Firm performance	0.15	0.01	0.01	0.01	0.01
	(0.17)	(0.02)	(0.02)	(0.02)	(0.02)
Firm size	-0.00	0.00*	0.00*	0.00*	0.00*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Free cash flow	-0.01	-0.01	-0.01	-0.02	-0.02
	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)
Liquidity	0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Acquisition size	-0.00	-0.00**	-0.00**	-0.00**	-0.00**
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Diversifying acquisition	-0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Industry dynamism	0.00	-0.01†	-0.01†	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Industry munificence	0.00	-0.00	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Industry concentration	-0.00	0.00	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Target prevention		0.00	0.00	0.00	0.00
		(0.00)	(0.00)	(0.00)	(0.00)
Target promotion		-0.00	-0.00	-0.00	-0.00
		(0.00)	(0.00)	(0.00)	(0.00)
Acquirer prevention		-0.00	-0.00	-0.00	-0.00
		(0.00)	(0.00)	(0.00)	(0.00)
Acquirer promotion		0.00	0.00	0.00	0.00
		(0.00)	(0.00)	(0.00)	(0.00)
Acquirer prevention X Target prevention			-0.00		-0.00
			(0.00)		(0.00)
Acquirer promotion X Target promotion				-0.00†	-0.00†
				(0.00)	(0.00)
Constant	4.58***	4.58***	4.58***	4.58***	4.58***
	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
N	574	213	213	213	213

[a] Robust standard errors in parentheses. Year dummy variables are included in both models but not reported in table.

†p < 0.10
*p < 0.05
**p < 0.01
***p < 0.001

The results to these hypotheses are reported in Table 2.3. Model 2 of Table 2.3 reveals that the main effect of the acquiring CEO's prevention focus is non-significant (b = 0.15, p = 0.38). Model 3 of Table 2.3 shows a positive and significant effect for the interaction of the merging managers' prevention foci (b = 0.26, p = 0.05). The plot of this interaction is depicted in Figure 2.1, and although the empirical result is significant and positive, the plot does not appear to fit the arguments. Rather, it appears that the market will react similarly when the acquirer's prevention focus is high, however, where the moderation occurs is when the acquirer's

Table 2.3. CEO Regulatory Foci Predicting Market Reaction [a]

Variable	1	2	3	4	5
Firm performance	-1.35	-0.98	-0.99	-0.60	-0.61
	(0.96)	(1.91)	(1.92)	(1.90)	(1.90)
Firm size	-0.04	-0.30	-0.28	-0.31	-0.29
	(0.10)	(0.19)	(0.19)	(0.19)	(0.19)
Free cash flow	0.85	1.22	1.02	1.14	0.94
	(0.65)	(2.24)	(2.25)	(2.26)	(2.26)
Liquidity	$0.15^\dagger$	$0.31^\dagger$	$0.34^\dagger$	$0.32^\dagger$	0.35^*
	(0.09)	(0.18)	(0.18)	(0.18)	(0.18)
Acquisition size	-0.09	0.01	0.02	0.02	0.03
	(0.13)	(0.22)	(0.22)	(0.22)	(0.22)
Diversifying acquisition	0.19	0.24	0.20	0.27	0.22
	(0.18)	(0.33)	(0.33)	(0.34)	(0.33)
Industry dynamism	-0.01	-1.34	-1.52	-1.14	-1.32
	(0.05)	(2.12)	(2.08)	(2.14)	(2.10)
Industry munificence	0.08	1.55	1.63	1.42	1.50
	(0.18)	(1.22)	(1.21)	(1.21)	(1.21)
Industry concentration	0.06	-0.03	-0.03	0.01	0.01
	(0.09)	(0.10)	(0.10)	(0.10)	(0.10)
Target prevention		$-0.29^\dagger$	$-0.28^\dagger$	$-0.30^\dagger$	$-0.28^\dagger$
		(0.16)	(0.16)	(0.16)	(0.16)
Target promotion		-0.19	-0.20	-0.20	-0.21
		(0.17)	(0.17)	(0.17)	(0.17)
Acquirer prevention		0.15	0.09	0.16	0.10
		(0.17)	(0.18)	(0.17)	(0.18)
Acquirer promotion		$0.25^\dagger$	0.21	0.23	0.19
		(0.15)	(0.14)	(0.15)	(0.15)
Acquirer prevention X Target prevention			0.26^*		0.26^*
			(0.13)		(0.13)
Acquirer promotion X Target promotion				-0.18	-0.18
				(0.12)	(0.12)
Constant	-0.24^*	-0.66^*	-0.71^*	-0.64^*	-0.69^*
	(0.12)	(0.27)	(0.27)	(0.27)	(0.27)
N	543	194	194	194	194

[a] Robust standard errors in parentheses. Year dummy variables are included in both models but not reported in table.

$\dagger p < 0.10$
$^*p < 0.05$
$^{**}p < 0.01$
$^{***}p < 0.001$

prevention focus is low. Under these conditions, the market appears to react more positively when the target manager's prevention focus is also low and more poorly when the target manager's prevention focus is high. Moving to the slope tests, the slope for low target prevention focus is non-significant (slope = -0.17, p = 0.48), while the slope for high target prevention focus is marginally significant (slope = 0.35, p = 0.08). These results fail to provide support for Hypothesis 3a, however, they do suggest there is merit to Hypothesis 3b.

Figure 2.1. Prevention focus interaction predicting market reaction
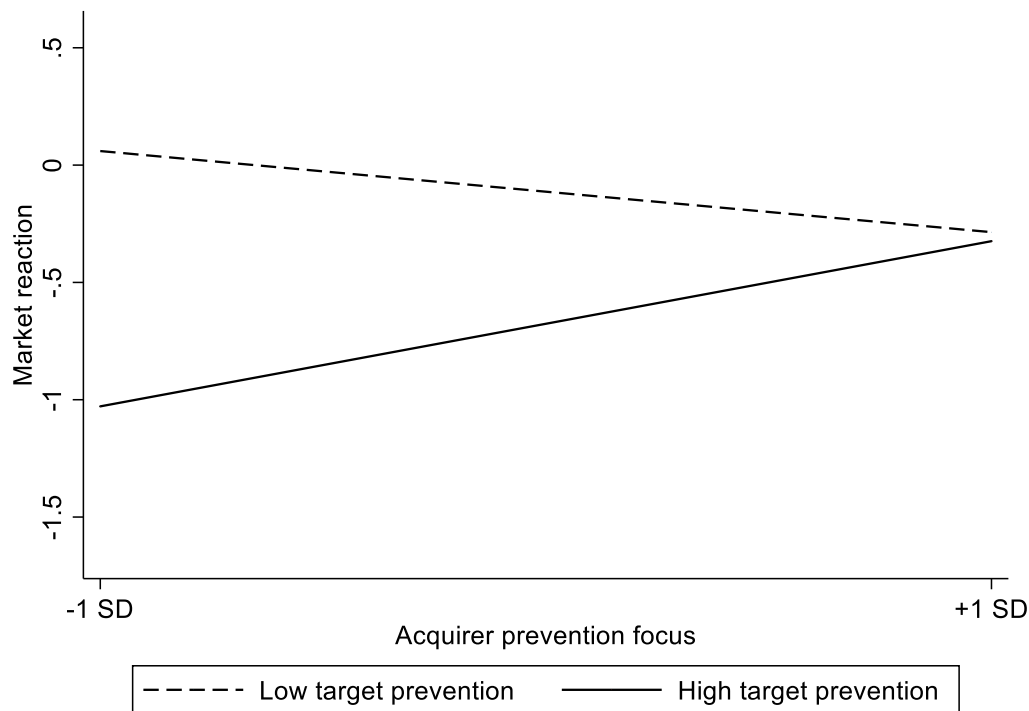
Additionally, Hypothesis 4a argued that the acquiring CEO's promotion focus would be negatively related to the market reaction and in Hypothesis 4b, that this relationship would be moderated by the target CEO's promotion focus such that the relationship would be more negative when the target CEO had a high level of promotion focus. The effect of the acquiring CEO's promotion focus is marginally significant and positive (b = 0.25, p = 0.09), which is in the opposite direction than hypothesized. However, Model 4 of Table 2.3 reports a non-significant effect for the interaction between merging managers' promotion foci (b = -0.18, p = 0.15). Thus, the results fail to support 4a and 4b.

In the last set of hypotheses (5a, 5b, 6a, and 6b) I posited that the relationships between the regulatory foci and market reaction would be mediated by the relationship with acquisition

premium. These results are depicted in Table 2.4. Sobel tests fail to provide any support for any

of these hypotheses.

Table 2.4. Acquisition Premium Mediation of CEO Regulatory Foci and Market Reaction [a]

Variable	1	2	3	4
Firm performance	-1.09	-1.11	-0.71	-0.74
	(1.94)	(1.93)	(1.93)	(1.93)
Firm size	-0.30	-0.29	-0.30	-0.30
	(0.19)	(0.19)	(0.19)	(0.19)
Free cash flow	1.30	1.14	1.18	1.02
	(2.26)	(2.26)	(2.27)	(2.27)
Liquidity	0.28	0.32†	0.30	0.33
	(0.18)	(0.18)	(0.18)	(0.18)
Acquisition size	-0.04	-0.01	-0.02	0.00
	(0.22)	(0.22)	(0.22)	(0.22)
Diversifying acquisition	0.25	0.20	0.27	0.23
	(0.33)	(0.33)	(0.34)	(0.33)
Industry dynamism	-1.29	-1.46	-1.13	-1.30
	(2.12)	(2.09)	(2.14)	(2.11)
Industry munificence	1.79	1.86	1.62	1.69
	(1.27)	(1.26)	(1.27)	(1.27)
Industry concentration	-0.05	-0.05	-0.01	-0.01
	(0.10)	(0.10)	(0.10)	(0.10)
Target prevention	-0.29†	-0.29†	-0.29†	-0.29†
	(0.17)	(0.17)	(0.16)	(0.17)
Target promotion	-0.21	-0.22	-0.22	-0.23
	(0.17)	(0.17)	(0.17)	(0.17)
Acquirer prevention	0.16	0.10	0.17	0.11
	(0.18)	(0.18)	(0.17)	(0.18)
Acquirer promotion	0.25	0.22	0.23	0.20
	(0.15)	(0.14)	(0.15)	(0.15)
Acquisition premium	-0.11	0.13	-0.24	-0.00
	(0.47)	(0.48)	(0.49)	(0.50)
Acquirer prevention X Target prevention		0.26†		0.26†
		(0.13)		(0.13)
Acquirer promotion X Target promotion			-0.16	-0.16
			(0.12)	(0.12)
Constant	-0.64*	-0.68	-0.63	-0.67*
	(0.27)	(0.27)	(0.27)	(0.27)
Sobel test - prevention	NS	NS		NS
Sobel test - promotion	NS		NS	NS
Sobel test – (acquirer) prevention	NS			NS
Sobel test – (acquirer) promotion	NS			NS
N	193	193	193	193

[a] Robust standard errors in parentheses. Year dummy variables are included in both models but not reported in table.

†$p < 0.10$
*$p < 0.05$
**$p < 0.01$
***$p < 0.001$

DISCUSSION

In this study I proposed that the motivations of both the acquiring and target CEOs, and their interactions, were important to consider when predicting the outcomes of acquisitions. Focusing on regulatory focus I posited that acquiring CEO prevention focus would be negatively related to acquisition premium and positively related to the market's reaction to the announcement of the acquisition. I also argued that the acquiring CEO promotion focus would be positively related to acquisition premium and negatively related to the market's reaction to the acquisition. Further, I investigated whether the target CEO's regulatory foci reinforced the relationship by strengthening the main effects proposed for the acquiring managers regulatory foci. Last, I examined whether premium mediated the relationships between the regulatory foci and the market's reaction to the announcement of the acquisition. The results failed to provide support for these hypotheses, however, there may be some explanations for the lack of support due to the limitations of this study.

First, it is worth noting that the number of observations used to test these hypotheses were comparatively small compared to other studies that examine these topics and focus solely on the acquiring manager. Due to the nature of the inquiries in this study, the sample was limited to acquisitions between publicly traded organizations where quarterly earnings call data could be collected on both the acquiring and target organization. Further, because this study examined deal outcomes, the sample was limited to individual acquisition events as opposed to looking at the full spectrum of organizations and examining if they undertook and acquisition and how that acquisition went. As such, this study was limited to 193 complete observations, whereas other studies looking at similar topics were able to have a broader sample. For instance, Gamache and colleagues (2015) had a sample of 3,250 because they only examined the regulatory focus of the

acquiring manager and were examining the likelihood of an acquisition occurring as opposed to examining the outcomes of deals.

Another limitation of this study is that in examining the models, it is apparent that there are many meaningless control variables. Not only did the predictor variables fail to reach significance, but almost all of the control variables included were also non-significant. As such, very little of the variance in the dependent variables is being explained in these models, meaning that there are more potent factors influencing the acquisition premium and market reactions to these acquisitions.

These two limitations collectively make it difficult to definitively determine that there is no relationship between the regulatory foci and their interactions on the outcomes of acquisitions. If this topic is to receive further investigation, a larger sample should be collected, and more potent variables included in the model. This could be accomplished by widening the scope and sources of the regulatory focus measures. For instance, other text-based sources such as annual reports, interviews, or speeches could provide other sources from which to increase the coverage of regulatory focus collections. In addition, if the scope of regulatory focus sources widens, so too can the sample of acquisitions. For instance, private companies and international acquisitions may also be able to be used. While the current study did not provide any support for my arguments, if future research is to examine this question, another avenue that should be explored, that I had not proposed, is a long-term performance measure. In my hypotheses, I limited the performance examination to the immediate market reaction to the acquisition, focusing on a short CAR window. This measure is indicative of the market's sentiment regarding the deal and whether the collective market perceives the deal to be valuable or not. What this measure does not account for, however, is whether this deal results in better performance once

94

the integration occurs and the merging organizations begin striving for the goals the acquisition was meant to help achieve. As such, in addition to accounting for the market's initial reaction to the announcement of a deal, it may be worthwhile to examine the implications of merging managers' regulatory foci for long term CARs and buy and hold returns as well. Until this investigation has been done, it would be premature to make the claim that the interaction between CEO regulatory foci does not influence the outcomes of acquisitions.

Despite the lack of support for the hypothesized relationships and the limited data availability, the data that I have still led to an interesting observation. For instance, two of the most prominent correlations depicted in Table 2.1 are that of the correlations between the acquiring CEO's promotion focus with the target CEO's promotion focus ($r = .24$), and the acquiring CEO's prevention focus with the target CEO's prevention focus ($r = .33$). Although my study did not examine deal selection, but rather focused on the outcomes of selected deals, these correlations suggest that it may be possible that there is a homophily argument to be made for regulatory focus of managers in deal selection. In essence, like attracts like, meaning that managers who share similar regulatory profiles, based on their promotion and prevention orientations, are more likely to select one another when searching for a deal. Again, this could be due to information processing, paying attention to similar cues, or recognizing the same opportunities or threats. In either case, it would also be worth exploring a selection model to determine whether there is indeed homophily in the selection of targets by acquirers.

Overall, this study had some critical limitations that hindered the ability to test the hypothesized relationships effectively. However, it did provide some valuable insights for the future pursuit of this question.

REFERENCES

REFERENCES

Ahmadi, S., Khanagha, S., Berchicci, L., & Jansen, J. J. (2017). Are managers motivated to explore in the face of a new technological change? The role of regulatory focus, fit, and complexity of decision-making. *Journal of Management Studies*, *54*(2), 209-237.

Appelt, K. C., Zou, X., Arora, P., & Higgins, E. T. (2009). Regulatory fit in negotiation: Effects of "prevention-buyer" and "promotion-seller" fit. *Social Cognition*, *27*(3), 365-384.

Baas, M., De Dreu, C. K., & Nijstad, B. A. (2011). When prevention promotes creativity: the role of mood, regulatory focus, and regulatory closure. *Journal of personality and social psychology*, *100*(5), 794.

Bergh, D. D., Johnson, R. A., & Dewitt, R. L. (2008). Restructuring through spin-off or sell-off: transforming information asymmetries into financial gain. *Strategic Management Journal*, *29*(2), 133-148.

Bertrand, O., Betschinger, M. A., & Settles, A. (2016). The relevance of political affinity for the initial acquisition premium in cross-border acquisitions. *Strategic Management Journal*, *37*(10), 2071-2091.

Bodnaruk, A., & Rossi, M. (2016). Dual ownership, returns, and voting in mergers. *Journal of Financial Economics*, *120*(1), 58-80.

Bohns, V. K., Lucas, G. M., Molden, D. C., Finkel, E. J., Coolsen, M. K., Kumashiro, M., Rusbult, C.E., & Higgins, E. T. (2013). Opposites fit: Regulatory focus complementarity and relationship well-being. *Social Cognition*, *31*(1), 1-14.

Bris, A., & Cabolis, C. (2008). The value of investor protection: Firm evidence from cross-border mergers. *The review of financial studies*, *21*(2), 605-648.

Brush, T. H., Bromiley, P., & Hendrickx, M. (2000). The free cash flow hypothesis for sales growth and firm performance. *Strategic management journal*, *21*(4), 455-472.

Buchholz, A. K., & Ribbens, B. A. (1994). Role of chief executive officers in takeover resistance: Effects of CEO incentives and individual characteristics. *Academy of Management Journal*, 37, 554-579.

Byrne, D. (1971). The attraction paradigm. New York: Academic Press

Cai, Y., Kim, Y., Park, J. C., & White, H. D. (2016). Common auditors in M&A transactions. *Journal of Accounting and Economics*, *61*(1), 77-99.

Cai, Y., & Sevilir, M. (2012). Board connections and M&A transactions. *Journal of Financial Economics*, *103*(2), 327-349.

Capron, L., & Guillén, M. (2009). National corporate governance institutions and post-acquisition target reorganization. *Strategic management journal*, *30*(8), 803-833.

Cesario, J., Higgins, E. T., & Scholer, A. A. (2008). Regulatory fit and persuasion: Basic principles and remaining questions. *Social and Personality Psychology Compass*, *2*(1), 444-463.

Cesario, J., Grant, H., & Higgins, E. T. (2004). Regulatory fit and persuasion: Transfer from" feeling right.". *Journal of personality and social psychology*, *86*(3), 388.

Chen, G., Crossland, C., & Huang, S. (2016). Female board representation and corporate acquisition intensity. *Strategic management journal*, *37*(2), 303-313.

Condon, J. W., & Crano, W. D. (1988). Inferred evaluation and the relation between attitude similarity and interpersonal attraction. *Journal of personality and social psychology*, *54*(5), 789.

Crowe, E., & Higgins, E. T. (1997). Regulatory focus and strategic inclinations: Promotion and prevention in decision-making. *Organizational behavior and human decision processes*, *69*(2), 117-132.

Devers, C. E., Wuorinen, S., McNamara, G., Haleblian, J., Gee, I. H., & Kim, J. (2020). An integrative review of the emerging behavioral acquisition literature: Charting the next decade of research. *Academy of Management Annals*, *14*(2), 869-907.

Finkelstein, S., & Haleblian, J. (2002). Understanding acquisition performance: The role of transfer effects. *Organization Science*, *13*(1), 36-47.

Galinsky, A. D., Leonardelli, G. J., Okhuysen, G. A., & Mussweiler, T. (2005). Regulatory focus at the bargaining table: Promoting distributive and integrative success. *Personality and Social Psychology Bulletin*, *31*(8), 1087-1098.

Gamache, D. L., & McNamara, G. (2019). Responding to bad press: How CEO temporal focus influences the sensitivity to negative media coverage of acquisitions. *Academy of Management Journal*, *62*(3), 918-943.

Gamache, D. L., McNamara, G., Mannor, M. J., & Johnson, R. E. (2015). Motivated to acquire? The impact of CEO regulatory focus on firm acquisitions. *Academy of Management Journal*, *58*(4), 1261-1282.

Geletkanycz, M. A., & Boyd, B. K. (2011). CEO outside directorships and firm performance: A reconciliation of agency and embeddedness views. *Academy of management journal*, *54*(2), 335-352.

Gino, F., & Margolis, J. D. (2011). Bringing ethics into focus: How regulatory focus and risk preferences influence (un) ethical behavior. *Organizational Behavior and Human Decision Processes*, *115*(2), 145-156.

Graebner, M. E., Eisenhardt, K. M., & Roundy, P. T. (2010). Success and failure in technology acquisitions: Lessons for buyers and sellers. *Academy of management perspectives*, *24*(3), 73-92.

Graves, L. M., & Powell, G. N. (1995). The Effect of Sex Similarity on Recruiters' Evaluations of Actual Applicants: A Test of the Similarity-Attraction Paradigm. *Personnel Psychology*, *48*(1), 85-98.

Haleblian, J., Devers, C. E., McNamara, G., Carpenter, M. A., & Davison, R. B. (2009). Taking stock of what we know about mergers and acquisitions: A review and research agenda. *Journal of management*, *35*(3), 469-502.

Haleblian, J., & Finkelstein, S. (1999). The influence of organizational acquisition experience on acquisition performance: A behavioral learning perspective. *Administrative Science Quarterly*, *44*(1), 29-56.

Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of management review*, *9*(2), 193-206.

Hayward, M. L. (2002). When do firms learn from their acquisition experience? Evidence from 1990 to 1995. *Strategic management journal*, *23*(1), 21-39.

Higgins, E. T. (1998). Promotion and prevention: Regulatory focus as a motivational principle. In *Advances in experimental social psychology* (Vol. 30, pp. 1-46). Academic Press.

Higgins, E. T., & Spiegel, S. (2004). Promotion and prevention strategies for self-regulation. *Handbook of self-regulation: Research, theory, and applications*, 171-187.

Ishii, J., & Xuan, Y. (2014). Acquirer-target social ties and merger outcomes. *Journal of Financial Economics*, *112*(3), 344-363.

Johnson, R. E., Chang, C. H., & Yang, L. Q. (2010). Commitment and motivation at work: The relevance of employee identity and regulatory focus. *Academy of management review*, *35*(2), 226-245.

Johnson, R. E., Lin, S. H., Kark, R., Van Dijk, D., King, D. D., & Esformes, E. (2017). Consequences of regulatory fit for leader–follower relationship quality and commitment. *Journal of Occupational and Organizational Psychology*, *90*(3), 379-406.

Kanze, D., Huang, L., Conley, M. A., & Higgins, E. T. (2018). We ask men to win and women not to lose: Closing the gender gap in startup funding. *Academy of Management Journal*, *61*(2), 586-614.

Kolev, K. D. (2016). To divest or not to divest: A meta-analysis of the antecedents of corporate divestitures. *British Journal of Management*, *27*(1), 179-196.

Krishnan, H. A., Hitt, M. A., & Park, D. (2007). Acquisition premiums, subsequent workforce reductions and post-acquisition performance. *Journal of Management Studies*, *44*(5), 709-732.

Kuusela, P., Keil, T., & Maula, M. (2017). Driven by aspirations, but in what direction? Performance shortfalls, slack resources, and resource-consuming vs. resource-freeing organizational change. *Strategic management journal*, *38*(5), 1101-1120.

Laamanen, T. (2007). On the role of acquisition premium in acquisition research. *Strategic Management Journal*, *28*(13), 1359-1369.

Lanaj, K., Chang, C. H., & Johnson, R. E. (2012). Regulatory focus and work-related outcomes: a review and meta-analysis. *Psychological bulletin*, *138*(5), 998.

Lee, A. Y., & Aaker, J. L. (2004). Bringing the frame into focus: the influence of regulatory fit on processing fluency and persuasion. *Journal of personality and social psychology*, *86*(2), 205.

Lee, K. H. (2018). Cross-border mergers and acquisitions amid political uncertainty: A bargaining perspective. *Strategic Management Journal*, *39*(11), 2992-3005.

Lin, Z., Peng, M. W., Yang, H., & Sun, S. L. (2009). How do networks and learning drive M&As? An institutional comparison between China and the United States. *Strategic management journal*, *30*(10), 1113-1132.

McDonald, M. L., Westphal, J. D., & Graebner, M. E. (2008). What do they know? The effects of outside director acquisition experience on firm acquisition performance. *Strategic Management Journal*, *29*(11), 1155-1177.

McNamara, G. M., Haleblian, J., & Dykes, B. J. (2008). The performance implications of participating in an acquisition wave: Early mover advantages, bandwagon effects, and the moderating influence of industry characteristics and acquirer tactics. *Academy of Management Journal*, *51*(1), 113-130.

McNamara, G., Vaaler, P. M., & Devers, C. (2003). Same as it ever was: The search for evidence of increasing hypercompetition. *Strategic Management Journal*, *24*(3), 261-278.

Meyer-Doyle, P., Lee, S., & Helfat, C. E. (2019). Disentangling the microfoundations of acquisition behavior and performance. *Strategic Management Journal*, *40*(11), 1733-1756.

Monga, A., & Zhu, R. J. (2005). Buyers versus sellers: How they differ in their responses to framed outcomes. *Journal of Consumer Psychology*, *15*(4), 325-333.

Nadkarni, S., & Barr, P. S. (2008). Environmental context, managerial cognition, and strategic action: An integrated view. *Strategic management journal*, *29*(13), 1395-1427.

Nadkarni, S., & Chen, J. (2014). Bridging yesterday, today, and tomorrow: CEO temporal focus, environmental dynamism, and rate of new product introduction. *Academy of Management Journal*, *57*(6), 1810-1833.

Peng, A. C., Dunn, J., & Conlon, D. E. (2015). When vigilance prevails: The effect of regulatory focus and accountability on integrative negotiation outcomes. *Organizational Behavior and Human Decision Processes*, *126*, 77-87.

Pennebaker, J. W., Francis, M. E., & Booth, R. J. (2001). Linguistic inquiry and word count: LIWC 2001. *Mahway: Lawrence Erlbaum Associates*, *71*(2001), 2001.

Petrenko, O. V., Aime, F., Recendes, T., & Chandler, J. A. (2019). The case for humble expectations: CEO humility and market performance. *Strategic Management Journal*, *40*(12), 1938-1964.

Prince, J. T., & Simon, D. H. (2009). Multimarket contact and service quality: Evidence from on-time performance in the US airline industry. *Academy of Management Journal*, *52*(2), 336-354.

Reuer, J. J., Tong, T. W., & Wu, C. W. (2012). A signaling theory of acquisition premiums: Evidence from IPO targets. *Academy of Management Journal*, *55*(3), 667-683.

Righetti, F., Finkenauer, C., & Rusbult, C. (2011). The benefits of interpersonal regulatory fit for individual goal pursuit. *Journal of Personality and Social Psychology*, *101*(4), 720.

Schijven, M., & Hitt, M. A. (2012). The vicarious wisdom of crowds: Toward a behavioral perspective on investor reactions to acquisition announcements. *Strategic Management Journal*, *33*(11), 1247-1268.

Schug, J., Yuki, M., Horikawa, H., & Takemura, K. (2009). Similarity attraction and actually selecting similar others: How cross-societal differences in relational mobility affect interpersonal similarity in Japan and the USA. *Asian Journal of Social Psychology*, *12*(2), 95-103.

Seo, J., Gamache, D. L., Devers, C. E., & Carpenter, M. A. (2015). The role of CEO relative standing in acquisition behavior and CEO pay. *Strategic Management Journal*, *36*(12), 1877-1894.

Shin, J., Lee, Y. K., & Seo, E. (2017). The effects of feedback on students' achievement goals: Interaction between reference of comparison and regulatory focus. *Learning and Instruction*, *49*, 21-31.

Slangen, A. H. (2011). A communication-based theory of the choice between greenfield and acquisition entry. *Journal of Management Studies*, *48*(8), 1699-1726.

INTEGRATED DISCUSSION

In this dissertation I set out to better understand how similarity between acquirers and targets could influence the outcomes of these acquisitions. This inquiry stemmed from a review of the behavioral acquisition literature that I was a part of conducting, where I noted that much of the existing literature focused exclusively on the acquiring firm and managers, while largely ignoring or discounting the effects that target firms and their managers may have on an acquisition decision or outcomes. Thus, my goal was to highlight that the interactions these firms and managers have are just as important if not more important than motivations, decisions, or actions of one firm alone.

My intent was to examine this question on multiple fronts. As such, although the two studies in this dissertation utilize different samples, examine different levels, and predict different outcome variables, I want to note that this was done intentionally. In the first chapter, I chose to examine this question at the firm level, looking to the decision-making authority structures that the acquirer and target organizations utilize and how the different combinations of acquirer-target authority structures differentially affect innovation productivity in technology intensive acquisitions. Broadly, my prediction was that if the acquirer and the target firms shared similar authority structures, it would allow for an easier transition from being two individual firms to merging into one, resulting in greater innovation productivity. Alternatively, my second chapter I examined the focal question at the individual level, choosing to focus on the motivational characteristics of the acquiring and target firm CEO's. In the second chapter, my argument was less about fit between the two merging CEO's and more about their situational fit within the buying and selling relationship. I argued that there were circumstances that would

benefit one party or the other in terms of the price negotiation and market reaction to the acquisition based on the motivational fit with the situation.

These two studies collectively allowed me to test my focal question at the firm level and the individual level, examining innovation outcomes, negotiation outcomes, and market reactions, and most importantly the interaction of characteristics between the acquiring and target organizations and individuals. Although I did not find significant results, I was able to identify some interesting relationships in my data. After some additional analyses I was able to uncover evidence that begins to support my assertion for the main hypothesis in Chapter 1, while in Chapter 2, the correlation between the motivational characteristics of each firm's CEO suggests that there may be homophily of motivational characteristics that lead to target selection. This dissertation did not offer strong support for my initial expectations; however, it did yield areas for potentially fruitful inquiry. So, again, despite the lack of support for my hypothesized arguments, both chapters of this dissertation still suggest that it is important to consider the characteristics of each firm in the acquisition process and how they may interact to predict the outcomes of acquisitions.

Upon reflecting on the process of working through this dissertation I learned more about how to plan out a research project and identified aspects of this dissertation I would have changed if I had known what I do now. First, I discovered that data availability and variability are an important consideration before committing to a project or a specific variable. This was apparent in both chapters of my dissertation. In Chapter 1, there was little variation in my dataset in terms of whether the acquiring and target firms had shared a prior alliance. Out of my 540 observations, only 11 had a prior alliance, making my hypotheses regarding the moderation by a prior alliance untestable. If I had considered this potential problem prior to proposing this study,

I would have first determined whether there was enough variation in prior alliances, determined that there was not, and committed to a different set of potential moderating factors to round out my study.

In the second chapter of this dissertation, I had a data availability problem that also resulted in a sample biased towards large acquisitions, where the average acquisition in my sample was $4.7B. This problem developed due to my need for quarterly earnings call data for both my acquiring and target CEOs, that came from my earnings call dataset that only consisted of S&P1500 firms. This was needed for the measurement of my independent variable, regulatory focus, for each CEO in the acquisition. As such, my sample was limited to the acquisition of S&P1500 firms by other S&P1500 firms, reducing my sample size to 213 and 194 observations and skewing my average acquisition size up to an average of $4.7B. Both of these issues made it difficult for this study to produce anything statistically significant. Again, if I had considered this issue prior to beginning this project, there are a few other potential routes I could have taken to avoid this problem. For example, I could have collected additional data extending beyond the S&P1500 list to increase my sample size and reduce the skewness of firm sizes in my sample. Alternatively, I could have searched for or created a different measure for regulatory focus that would allow for private firms to be measured as well. Another option could be to extend the sample time period to include another one or two decades, however, the tradeoff with this option is relevance. As time goes by, strategy changes, motivations for acquisitions change, and factors that influence these outcomes changes, so, this option comes at a cost as do the other potential solutions. Regardless, it is imperative that if this question is to be examined again, the sample size will need to be increased in order to provide a sufficient test for the hypotheses.

More broadly, across both studies, I rediscovered the importance of having the operationalization of variables match the constructs I am intending to account for. Upon reflection, my main independent variable in Chapter 1 may be a poor match for organizational authority structure. The benefit of having direct access to organizations, or conducting lab studies, is that it is much easier to definitively determine or create a certain authority structure. Having direct access to companies allows for the opportunity to interview or conduct surveys, whereas lab studies allow researchers to artificially create or experiment with authority structure. However, using archival data leave much unknown. My two measures, presence of a CTO as well as corporate segment, may both be insufficient to accurately determine the authority structure of these organizations. For instance, despite what these measures were meant to represent, what they do not account for are individual differences and differing management styles that may lead to a continuous range of how centralized or decentralized the authority structures are within these organizations. These measures do not account for these differences, thus, instead of attempting to force fit an operationalization to a construct, it would be wiser to simply recognize these measures for what they are. Focusing on the CTO measure, rather than attempting to characterize the presence of a CTO as centralized authority structure, it would be more appropriate to develop theory around what the presence of a CTO means for an organization and specifically, what it can mean to the innovation process.

In terms of future research, this dissertation has provided a great learning experience as well as provide a potential path forward for examining the questions posed in this dissertation. Although both chapters had their deficiencies, there is still an opportunity to re-analyze these questions using what I gleaned from this experience to improve the research process. These two studies also began to hint at the importance of considering the acquirer and target firms and

managers in acquisition research. As I move forward with my research program, I plan to continue investigating characteristics, contexts, and conditions that influence both the acquiring and target firms when it comes to mergers and acquisitions.