ALL THE PLACES WE'VE BEEN:

EXECUTIVES' PRIOR EMPLOYMENT TIES'

INFLUENCE ON UNRELATED ACQUISITIONS

A Dissertation

by

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ABSTRACT

This study examines the influence of executives' prior employment ties on unrelated acquisitions. I do this by considering the relational ties created by both the oft-studied board interlock as well as the hitherto unconsidered executive prior employment. By considering both tie types, I am able to examine the new inter-firm relational tie variable next to a well-established relational network variable. Therefore, I collected data on all of the executive prior employment ties and board interlocks to unrelated industries for all of the public, U.S. firms in the 'computers and office equipment' industry from 2002-2014. Results show that a relational tie to an unrelated industry through either a board interlock or executive prior employment does increase the likelihood of acquiring an unrelated target in that same industry, although the latter has a stronger influence. The rate of decay of the prior employment tie is assessed and found to be quite slow. The amount of time spent building ties with co-workers in the unrelated industry has no impact on the effect, suggesting that most prior employment ties are strong enough for knowledge transfer. Finally, the surprising result that sent executive prior employment ties possess comparable influence to their received counterparts, is outlined, meaning that an executive exiting to another industry can be just as influential on a firm's acquisition activity in that industry as the firm recruiting an executive from that industry.

DEDICATION

To my father, who always encouraged my curiosity about the world and how things work. Few would respond to a child asking 'why is the sky blue?' with an understandable explanation of atmospheric light diffraction. Thanks Dad.

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CHAPTER I

INTRODUCTION

A great deal of research has focused on why firms make acquisitions. This is in part because acquisitions often represent a significant investment. Demonstrating this is the fact that the worldwide total sum that firms spent to complete acquisitions in 2006 was $3.79 trillion (Barkema & Schijven, 2008). The amount firms spend on worldwide acquisitions continues to expand, reaching an estimated $4.58 trillion in 2015 (Mattioli & Strumpf, 2015). With so many financial resources being used to complete acquisitions, this is understandably an area of much scholarly inquiry that is of interest to shareholders in both acquiring and acquired firms.

Researchers have considered many antecedents as a means to explain the reasoning for companies choosing to spend trillions of dollars annually to acquire other firms. Two common findings in these studies are that firms engage in acquisitions to increase executive compensation and to diversify the scope of their operations (Haleblian, Devers, McNamara, Carpenter, & Davison, 2009). Executive compensation has been shown to increase, post-acquisition, through sizable equity grants (Harford & Li, 2007) and bonuses (Grinstein & Hribar, 2004). These compensation increases are particularly beneficial for the CEO (Henderson & Fredrickson, 2001) and are often made regardless of the performance of the acquisition (Haleblian et al., 2009).

Another antecedent for acquisitions is the desire to diversify the firm's scope of operations. "Diversification is one of the primary reasons that firms acquire other

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companies" (Hitt, Harrison, & Ireland, 2001: 116). Firms may diversify their product line to take advantage of economies of scale and scope or to increase their market power (Chakrabarti, Hauschildt, & Süverkrüp, 1994). Acquisitions can enable firms to diversify their product lines faster and cheaper than developing new products internally (Hitt et al., 2001). More recently, studies suggest firms can also diversify through acquisitions for the purposes of imitating competitors' actions (Yang & Hyland, 2006) or to increase political clout (Beneish, Jansen, Lewis, & Stuart, 2008).

Still, in spite of all we have learned as a field about these acquisition antecedents and others (e.g., managerial hubris, government regulation, resource redeployment – see Haleblian et al., 2009 for full list), a recent meta-analysis found that there are still unidentified acquisition variables that may explain significant variance in post-acquisition performance (King, Dalton, Daily, & Covin, 2004). I contend that a type of inter-firm relational ties, that have not been considered previously, may account for some of the unexplained variance associated with acquisition outcomes. Indeed, prior research has found inter-firm relational ties to be an antecedent to acquisitions (e.g., Westphal, Seidel, & Stewart, 2001). Specifically, researchers have already considered the influence on acquisition activity of relational ties created across firms through directors serving on multiple boards (commonly called board interlocks). For instance, the number of current acquisitions completed by the focal firm was found to be positively related to the number of prior acquisitions completed by the firms tied to the focal firm via board interlocks (Haunschild, 1993). Similarly, scholars found that

changes in acquisition activity of firms linked by interlocks were positively related to changes in the focal firm's acquisition activity (Haleblian et al., 2009).

Social capital theory suggests that relational ties serve as a conduit for information and knowledge transfer[1] (Burt, 1992). Both the early ideas of weak tie theory (Granovetter, 1973) and the more recent concept of structural holes (Burt, 1992), support the notion that a relational tie that bridges distinct groups has an informational benefit (Podolny, 2001). Researchers found this to be the case for acquisitions, with the positive relationship between interlocked firms' acquisition activity shown to be due to the information flowing through the board interlocks (Haunschild & Beckman, 1998).

The purpose of this study is to examine a new type of inter-firm relational tie: executives' prior employment ties. While researchers have studied intra-firm ties to co-workers at both the employee (e.g., Maurer, Bartsch, & Ebers, 2011) and executive levels (e.g., Carpenter, 2002), those same ties are rarely considered once the focal actor changes firms (Dokko & Rosenkopf, 2010). However, recent research has shown that exiting employees retain social ties with their former co-workers and those ties are strong enough for knowledge flow (Agrawal, Cockburn, & McHale, 2006; Corredoira & Rosenkopf, 2010). This means that as executives move between firms, they create inter-

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[1] It is important to point out that the literature on relational ties and social capital has largely used 'information' and 'knowledge' interchangeably. While in a broader context, knowledge is the subset of information that is in someone's brain (and thus known), this distinction largely disappears within the context of relational tie transference. For information to pass between two individuals it must at least be known to the sender. Even in the case of information contained in a database or book, the sender must still have enough of a general knowledge of the information contained in the external source to identify it as information the receiver may want. Setting aside such issues as the receiver's absorptive capacity to turn the sender's transmitted knowledge into his/her own, at least on one side of the exchange it is fair to claim information and knowledge are synonymous. I therefore attempt to use the same terminology as that of the study being cited.

firm ties between their current and former employer(s). As this is a relatively unstudied

type of relational tie, it raises the question: What is the best context to examine it?

The informational benefit of relational ties most likely occurs when the groups

are socially distant. Social distance between groups exists when there is little "overlap in

their friendship circles" between members of group A and members of group B

(Granovetter, 1973: 1362). Weak tie theory (Granovetter, 1973) argues that members of

socially close groups tend to possess redundant information (i.e., each member's

information is the same as the other members) and therefore ('weak') ties to a socially

distant group are likely to form valuable bridges to new information. Similarly, Burt

(1992: 20) observed that "[informational] redundancy is unlikely, indicating a structural

hole, between… distant groups." Therefore, an inter-firm relational tie is more likely to

provide an informational benefit the greater the social distance between the two firms.

Firms operating in unrelated industries will tend to have a higher social distance

(less relational overlap) than do firms operating in related industries or those within the

same industry. Industries are commonly classified as 'related' or 'unrelated' based on

the similarity (or complementarity) of their product lines and/or the markets they serve.

The individuals employed at a firm will tend to have more interactions with individuals

employed at other firms within the same industry than individuals employed at firms

competing in unrelated industries. These numerous interactions contribute to a shared

common 'industry knowledge' that is largely redundant for all firms within the industry.

This is similarly true, though to a lesser extent, across firms in related industries.

However, as fewer individuals are likely to interact with individuals at firms in unrelated

industries, the knowledge shared across such ties is less likely to be redundant with knowledge in the focal industry. "Information, opinion, and practice are more homogeneous within than between groups, so a manager whose network spans structure [sic] holes (call him a network broker, connector, or entrepreneur) has a vision advantage in early exposure to diverse information" (Burt, 2007: 119).

Therefore, I contend that an executive's relational ties to a firm in an unrelated industry provide an informational conduit to valuable, non-redundant information that increases the likelihood of acquiring targets in that industry. In this case, an executive's relational ties to a firm in an unrelated industry provides an informational conduit to that firm's shared common (non-focal) 'industry knowledge' for the focal firm, that is not widely known within the focal industry. Access to the 'industry knowledge' of a specific unrelated industry improves the focal firm's ability to identify attractive acquisition targets in that industry. Such knowledge also reduces the informational asymmetry of an acquisition in that industry location compared to other unrelated industries for the focal firm. For example, CNET Networks (a website that reports on technology and reviews consumer electronics) hired an executive from Bank of America three years before acquiring its first firm from the banking industry.

In addition to investigating the influence of executives' prior employment ties on unrelated acquisitions, I also hypothesize the existence of three potential moderators of this relationship. First, I examine how quickly prior ties decay with time, as a general rate of tie decay is unknown (Adler & Kwon, 2002). For the most part, scholars have treated all prior ties as "dead and irrelevant" (Levin, Walter, & Murnighan, 2011: 923).

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However, Levin et al. (2011) found that ties to individuals without contact for at least three years were still easily accessible for information. Similarly, relational ties from university days have been shown to provide valuable social capital many years later (Cohen, Frazzini, & Malloy, 2008). Both of these findings suggest that relational ties decay slowly, but little work has been completed to empirically estimate a rate of decay.

Second, I consider the impact of the strength of the prior tie when the executive exited the prior employer, as tie strength can affect information exchange (Uzzi, 1996). "Ties can be more or less preferential and stable, more or less trustworthy, and entail richer or more limited information exchange" (Baum, McEvily, & Rowley, 2012: 529). Since the exchange of valuable industry information is vital to influencing acquisition activity, an executive's relational ties to former co-workers must be of sufficient strength for this to occur. Establishing a minimum necessary threshold of prior tie strength for sufficient information exchange could also further illuminate our understanding of tie decay.

Third, as relational ties allow for bidirectional knowledge flow (Corredoira & Rosenkopf, 2010), I examine which direction of the executive prior employer tie has a stronger influence. I borrow the terminology of 'sent' and 'received' ties routinely used in interlock research (Palmer, Barber, Zhou, & Soysal, 1995) to describe the direction of the executive mobility between firms. That is, is the focal firm the current (received tie) or prior (sent tie) employer for the executive in question? While sent ties isolate the social capital influence of the former executive (Corredoira & Rosenkopf, 2010), received ties would also include the influence of human capital and executive authority

on the focal firm's acquisition activity. Therefore, theoretically, it seems obvious to predict received ties as the stronger influence, but I will put that prediction to the test. I summarize my hypothesized relationships in a visual model in Figure 1.

This study examines the influence of executives' prior employment ties on unrelated acquisitions. It does this by considering the relational ties created by both the oft-studied board interlock as well as the hitherto unconsidered executive prior employment. By considering both tie types, I am able to examine the new inter-firm relational tie variable next to a well-established relational network variable. Therefore, I collected all of the executive prior employment ties and board interlocks to unrelated industries for all of the public, U.S. firms in the 'computers and office equipment' industry from 2002-2014. I also captured the number of years of experience at the prior employer, the number of years since leaving the prior employer, and the tie direction (sent or received) to allow for moderation analysis. These data were analyzed to determine their influence on unrelated acquisitions in those industries. Results show that a relational tie to an unrelated industry through either a board interlock or executive prior employment does increase the likelihood of acquiring an unrelated target in that same industry, although the latter has a stronger influence. The age of the prior employment tie decreases this effect, suggesting tie decay occurs. The amount of time spent building ties with co-workers in the unrelated industry has no impact on the effect, suggesting that most prior employment ties are strong enough for knowledge transfer. Results for the prior employer tie's direction show similar strength between them,

suggesting the influence of the ties is primarily from social capital and not human capital.

By empirically examining how executives' prior employment ties relate to firm acquisition behavior, my study contributes to existing theory and research in several ways. First, I contribute to the acquisition literature by identifying a previously unknown variable of executive prior employment ties that explains significant variance in unrelated acquisition activity. This is particularly noteworthy as this new type of inter-firm relational tie appears to have a stronger influence than board interlocks, the study of which has contributed a considerable amount to our understanding of acquisition behavior. This raises the question as to whether prior studies included enough ties to capture adequately the relational network structure (Burt, 2007). This means that in prior research, the influence of board interlocks may be overstated.

I add to the diversification literature by considering the industry location of the unrelated acquisition target. Diversification research has found that unrelated acquisitions can be used to balance the cyclical effects of revenue between industries (Amihud & Lev, 1981; Bergh, 1997). Further, unrelated acquisitions can lower the cost of capital (Chatterjee, 1986), or create other financial gains (Bergh, 1997; Seth, 1990). However, while diversification can help explain firms' engaging in unrelated, instead of related, acquisitions, it rarely considers what influences a firm to choose one unrelated industry over another. This study expands our understanding of other factors in the selection of a specific unrelated industry location for acquisition activity.

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I also contribute to the social capital literature in several ways. First, I add to our understanding of relational tie decay. While a few recent findings suggest that relational tie decay may be slow (Cohen et al., 2008; Levin et al., 2011), to my knowledge, I am the first to empirically establish a decay rate. My findings show that the decay rate for prior ties is quite slow, suggesting that researchers should no longer ignore prior ties in their work. Next, I find confirmation for the bidirectional nature of knowledge flow across relational ties. My findings also suggest that this knowledge flow accounts for a majority of the influence of such ties. Finally, I expand social capital research on prior employment ties into the C-suite by testing it at the executive level.

The organization of this dissertation is as follows. Next is a literature review (Chapter II) of pertinent previous work in the areas of acquisitions, social capital, and board interlocks. After this base is covered, I turn to new theory development and hypotheses (Chapter III) to explain the developed model of inter-industry relational ties within the context of unrelated acquisitions to determine the strategic implications. The methodology for testing this new theory is covered in the following chapter (IV), in which the sample of public firms in the 'computers and office equipment' industry, the investigated variables, and the analysis procedures, are explained. In Chapter V, I outline the study's results. Finally, the dissertation concludes in Chapter VI with a discussion of the implications of the study for theory, empirics, and management practice.

CHAPTER II

LITERATURE REVIEW

Social Capital

"The core intuition guiding social capital research is that the goodwill that others have toward us is a valuable resource. By 'goodwill' we refer to the sympathy, trust, and forgiveness offered us by friends and acquaintances." (Adler & Kwon, 2002: 18)

A great deal of research has focused on social capital – the resources embedded in relational networks (Leana & Pil, 2006). A recent review (Woolcock, 2010) points to a prevalence of studies in nine fields, including our own, of 'work and organizations'. Social capital has been examined by management scholars in many areas, including entrepreneurship (e.g., Slotte-Kock & Coviello, 2010), knowledge management (e.g., Maurer et al., 2011), and inter-firm relationships (e.g., Sorenson & Rogan, 2014).

Nahapiet and Ghoshal (1998) identified three dimensions of social capital: structural, relational, and cognitive. 'Structural embeddedness' concerns the properties of the entire relational network and an actor's position in it (e.g., Burt, 1992). 'Relational' embeddedness' concerns the content of those ties, such as trust, which develop through repeated interactions (e.g., Putnam, 1993). Finally, 'cognitive embeddedness' concerns the types of shared meaning that can develop, such as shared language or narratives (e.g., Kogut & Zander, 1996).

Sandefur and Laumann (1998) identify the three benefits of social capital as information, influence, and solidarity. Similarly, Uzzi (1997) classified the three attributes of relational embeddedness as information exchange, trust, and joint problem solving. Informational benefits are derived from the timeliness, relevance (Burt, 1992) and trustworthiness (Laumann & Knoke, 1987) of the information. Influential benefits are derived both from one's ability to influence others (Coleman & Coleman, 1994) and one's freedom from such influence from others (Sandefur & Laumann, 1998). The benefits of solidarity are derived from a mutual trust and commitment beyond that of the transaction (Portes & Sensenbrenner, 1993).

Social Capital Sources of Information

Social capital research has focused on two sources of informational access. 'Bonding' forms of social capital focus on the internal ties within groups while bridging' forms of social capital focus on external ties to other groups (Adler & Kwon, 2002). 'Bonding' social capital considers informational access based on centrality of the focal actor within the overall network (e.g., Ahuja, 2000). Meanwhile, 'bridging' social capital considers informational access based on 'weak' ties (Granovetter, 1973), or spanning structural holes (Burt, 1992) that bridge distinct groups within the network.

Higher levels of network centrality[2] increase the firm's access to information (Ahuja, 2000). Specifically discussing board interlocks, Martin, Gozubuyuk, and Becerra (2015: 238) state "a central position in the interlocking network also allows the

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[2] It is important to note that centrality has been operationalized as "betweenness (information control) centrality (Madhavan, 1996)" and "degree (number of partners) centrality (Ahuja, 2000)" (Koka & Prescott, 2002: 798).

firm to convey information to its partners, improving the coordination of its activities with other organizations –such as suppliers, customers, and competitors– in order to reduce possible fluctuations in resource requirements, demand, and prices"

However, the additional information from a more central position may be redundant (Burt, 1992). As the network of ties approaches 100% density (i.e., all potential ties formed, which in this study would be all firms connected to every unrelated industry), the number of structural holes decreases and the number of redundant information paths increases. So while centrality can increase the information available to the actor, it does not guarantee that information is diverse.

In contrast, more structural holes in a network create a situation with diverse information in different node clusters (Podolny, 2001). "A structural hole is said to exist between two alters who are not connected to each other. According to structural holes theory, it is advantageous for ego to be connected to many alters who are themselves unconnected to the other alters in ego's network" (Seibert, Kraimer, & Liden, 2001). In a network analysis, the focal individual is referred to as the 'ego' (or 'actor') with those tied to him or her called 'alters' (Knoke & Kuklinski, 1982). As Martin et al. (2015) explain:

> "An ego-network rich in structural holes provides two benefits: information and control (Podolny, 2001). Information benefits suggest access to diverse and timely information as well as access to referrals (Burt, 1992). This information reduces firm uncertainty regarding how best to combine resources and realize market opportunities (Podolny, 2001). Control stems from the central actor being *tertius gaudens* or "the third who benefits" (Simmel, 1923). There are two tertius strategies: "being the third between two or more

players after the same relationship, and being the third between players in two or more relations with conflicting demands" (Burt, 1992: 31). Firms may achieve power through their structural position following either of these two tertius strategies that allow them to exert control over other organizations (Burt, 2004)."

Those bridging structural holes prosper through the advantageous position such an information bridge creates. "Information, opinion, and practice are more homogeneous within than between groups, so a manager whose network spans structure [sic] holes (call him a network broker, connector, or entrepreneur) has a vision advantage in early exposure to diverse information and a general political advantage as a hub in the information flow" (Burt, 2007: 119).

Similar to network centrality, Burt's (1992) structural holes argument does not focus on the characteristics of an actor's individual ties, but on the characteristics of the network as a whole and the actor's part in it. This means research on structural holes has targeted relative network attributes (the amount of structural holes bridged) instead of specific network bridges.

Tie Types

"Social network researchers regard relationships, or ties, as the basic data for analysis. A network can be defined as the pattern of ties linking a defined set of persons or social actors. Each person can be described in terms of his or her links with other people in the network" (Seibert et al., 2001: 220). Management scholars have considered these relational networks both indirectly through inferred ties (e.g., Higgins & Gulati, 2006) and directly through observable ties (e.g., Hoitash, 2011). Studies of the specific

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ties of top executives have considered both intra-firm networks (e.g., Carpenter & Wade, 2002) and inter-firm networks (e.g., Haynes & Hillman, 2010).

To date, scholars have examined the social capital of executives in two ways: through the networks of observable relational ties or inferred ties based on an observable association. Associations used to infer relational capital include the "frequently used measures of network social capital such as the education and occupational prestige of network members" (Mouw, 2003: 873). These measures of prestige are usually a binary categorization. For instance, an affiliation with a prestigious organization, such as possessing an Ivy league education, signals greater social capital than those without such an affiliation (e.g., Higgins & Gulati, 2006). In addition to universities, researchers may determine that prestige is associated with affiliation with certain banks, venture capital firms, and charities. "Because executives and outside directors are engaged in the actual functioning of young firms, any prestigious credentials they possess are thought to represent valuable expertise and connections (i.e., both 'human capital' and 'social capital')" (Chen, Hambrick, & Pollock, 2008: 955). While a coarse assessment of social capital, such measures allow researchers to establish a relative amount of social capital held by executives based on an observable affiliation, when gathering the underlying relational network is not possible or practical. There are, of course, limits to such measures of social capital especially when considering multiple types of prestigious affiliations. For instance, the value of the social capital from differing prestigious affiliations for IPOs is contingent on market conditions. That is, Gulati and Higgins (2003: 127) found that "ties to prominent venture capital firms are particularly beneficial

to IPO success during cold markets, while ties to prominent investment banks are particularly beneficial to IPO success during hot markets."

Other studies examine the social capital through the networks of observable relational ties. For example, board interlocks consider the inter-firm tie that is established by the observable relationships formed through the directors interacting during board meetings (e.g., Connelly, Johnson, Tihanyi, & Ellstrand, 2011). Researchers generally choose only one type of relational tie to construct a network. However, a few studies have combined multiple types of ties into a single network (e.g., Geletkanycz & Hambrick, 1997).

There are many types of observable ties considered in prior studies. Such ties include, but are not limited to, friendship ties within the board (e.g., Hoitash, 2011; Westphal & Bednar, 2005; Westphal, 1999) and interlocking directorate ties across boards (e.g., Connelly et al., 2011; Zaheer & Bell, 2005). This leads to the next subdivision of social capital research: intra-firm and inter-firm networks.

Researchers have considered several types of intra-firm relational ties of executives and directors. For example, scholars found greater amounts of intra-firm social capital of the top management team translated into greater pay for the non-CEO executives (Carpenter & Wade, 2002). Further, the intra-firm social capital of the top management team was found to reduce the impact of their demographic differences (Carpenter, 2002).

Scholars have also considered the intra-firm relational ties within the board of directors. Social ties between executive board members and independent board members

on the compensation committee were linked to increased executive compensation

(Hoitash, 2011). Further, Hoitash (2011) found social ties between executive board

members and independent board members on the audit committee improved financial

reporting and reduced restatements. Westphal and Bednar (2005: 262) found friendship

ties among board members reduced the occurrence of the "systematic tendency for

outside directors to underestimate the extent to which fellow directors share their

concerns about the viability of the firm's corporate strategy" on boards. Friendship ties

between the CEO and other board members also increased the level of advice and

number of counsel interactions they received on strategic issues (Westphal, 1999). In

another recent example, Sundaramurthy and colleagues found that similarities between

the CEO's and the board's human and social capital created synergies which reduced IPO

underpricing (Sundaramurthy, Pukthuanthong, & Kor, 2014).

Researchers have also considered inter-firm relational ties of executives and

directors. Since the first empirical studies in the late 1980s, research into the importance

of inter-firm relationships on the performance and behavior of firms has grown

substantially (Sorenson & Rogan, 2014). In this area, strategy researchers have primarily

considered board interlocks. As Haunschild and Beckman (1998: 815) point out: "One of

the most-studied forms of interorganizational influence is the director interlock." For

instance, Palmer, Jennings, and Zhou (1993) found some interlocks (only neutral ties) to

encourage the adoption of the multidivisional form in the 1960s. Researchers have also

found that market uncertainty can influence forming additional interlock ties to existing

partner firms (Beckman, Haunschild, & Phillips, 2004). Haunschild (1993) found that

firms whose executives sat on the boards of other firms that engaged in acquisitions were more likely to engage in acquisitions themselves.

To date, the extant acquisition literature has rarely considered inter-firm relational ties beyond board interlocks and may be ignoring other important relational ties. There have been few exceptions to this narrow focus on interlocking directorates such as Haunschild (1994) considering ties to investment banking professionals in addition to interlocks in predicting acquisition premiums. This singular focus has led to "external directorship ties [as] the most well-studied of all forms of executive ties" (Geletkanycz, Boyd, & Finkelstein, 2001: 890), but little is known of the other relational ties of executives. These previously ignored ties are important if they represent alternative or additional pathways for information flow. For instance, Haunschild and Beckman (1998) found that alternate relational sources of information (e.g., CEO membership in the Business Round-table) reduced the impact of the interlock on acquisition activity. This suggests that differing types of ties that connect the firm to the same 'other' (e.g., individual, firm, investment bank) can act as substitutes for each other. On the other hand, if the ignored ties create additional connections beyond those made by the interlocks, researchers may not be including enough ties to adequately capture the relational network structure (Burt, 2007). That is, what appears to be a structural hole may actually be full of the ignored ties (Levin et al., 2011).

Board Interlocks

"The board interlock network has been viewed as an ideal arena in which to develop and test the embeddedness perspective on interorganizational

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relations. The board of directors is a unique formal mechanism linking top managers of large corporations; it provides an opportunity for leaders to exchange information, observe the leadership practices and style of their peers, and witness firsthand the consequences of those practices. Thus, from this perspective, board ties to other firms should have a strong influence over corporate policy and strategy decisions." (Gulati & Westphal, 1999: 473)

Researchers have long been interested in board interlocks and their influence on a variety of firm outcomes (Mizruchi, 1996; Zona, Gomez-Mejia, & Withers, 2015). For instance, Davis (1991) found that firms more central in the interlock network were more likely to adopt 'poison pill' defenses against corporate takeovers. Researchers have found that firm uncertainty can influence forming new alliances (but not new interlock) ties to new firms, while market uncertainty can influence forming additional alliance and interlock ties to existing partner firms (Beckman et al., 2004). Palmer et al. (1993) found some interlocks (only neutral ties) to encourage the adoption of the multidivisional form in the 1960s among large U.S. industrial firms. Haunschild (1993), in a study across four industries, found that executives sat on the boards of other firms that engaged in acquisitions were more likely to engage in acquisitions at the focal firm. Finally, Peng (2004) found that during institutional transitions (in China) outside directors positively affect sales growth but have little effect on return on equity.

Several studies have also considered the importance of a nonfinancial firm's interlock with a bank. That is, to have a commercial or investment bank director serving on their board. Evidence suggests that bank interlocks increase the firm's amount of external financing (Stearns & Mizruchi, 1993). They also make a firm more likely to be

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targets of takeovers (Fligstein & Brantley, 1992), but more likely to be acquired in a 'friendly' than a 'predatory' fashion (Palmer et al., 1995).

These interlock ties have been found to "provide information about the activities of the other organization that may be crucial for the focal organization, e.g., strategic plans and cost and price structure (Baum and Ingram, 2003; Boyd, 1990; Galbraith, 1973; Haunschild, 1994; Podolny, 2001)" (Martin et al., 2015). In addition to information about the activities of other firms, the success or failure of those activities also transfers across board ties prompting or suppressing similar actions at the focal firm (Connelly et al., 2011). Research has shown that interlocks also give access to "external resources" (Boyd, 1990; Gulati, 1999; Zaheer & Bell, 2005).

"Attention is focused on external directorship ties as they are the most well-studied of all forms of executive ties" (Geletkanycz et al., 2001: 890). There have been a few exceptions to this narrow focus on interlocking directorates. For example, Haunschild (1994) examined ties to investment banking professionals in addition to interlocks. Zaheer and Bell (2005) considered the 'management ties' of mutual fund parents and subsidiaries in addition to board interlocks. Finally, a study took place that examined ties to former employers, in addition to interlocks, to predict strategic conformity to industry norms (Geletkanycz & Hambrick, 1997).

The following chapter starts with this background of research in mind and builds theoretical arguments specific to this study. First, I cover the idea of social distance as it pertains to inter-industry ties. Then I discuss prior employment ties and hypothesize

about their influence on unrelated acquisitions. Lastly, I propose the existence of three

potential moderators of this relationship.

CHAPTER III

THEORY DEVELOPMENT & HYPOTHESIS

Social Distance

An early conceptualization of social capital, weak tie theory (Granovetter, 1973), focuses on the strength of ties and their likelihood of overlap between various social groups. Granovetter (1973) argued that the strength of a tie between two individuals tends to increase the more those two individuals' social circles overlap:

> "Consider, now, any two arbitrarily selected individuals-call them A and B-and the set, S = C, D, E, ..., of all persons with ties to either or both of them. The hypothesis which enables us to relate dyadic ties to larger structures is: the stronger the tie between A and B, the larger the proportion of individuals in S to whom they will both be tied, that is, connected by a weak or strong tie. This overlap in their friendship circles is predicted to be least when their tie is absent, most when it is strong, and intermediate when it is weak." (Granovetter, 1973: 1362).

Granovetter (1973: 1364) further argued that because individuals in social cliques tend to possess redundant information, it is likely such "weak" ties form valuable "bridges" – "a line in a network which provides the only path between two points"– between densely interconnected social groups. Such bridges thus provide unique information and resources.

The notion of structural holes (Burt, 1992) has largely subsumed the early work on 'bridging' ties. According to structural holes theory, it is advantageous to be the

connector between unconnected groups (Seibert et al., 2001). That is, the bridge that 'spans a structural hole'. Such bridges prosper by becoming information brokers: "information arbitrage is essential to the idea that network brokerage provides social capital" (Burt, 2007: 122).

However, Burt's (1992) 'structural holes' approach does not focus on the characteristics of the actor's direct ties (e.g., tie strength), but on the characteristics of the network as a whole and the actor's part in it. This means that research on bridging ties has focused on relative network attributes instead of tie attributes. To date, such structural social capital studies have focused primarily on the amount of structural holes spanned by particular person or firm; that is, how many bridging ties does the focal manager or firm pose? For instance, the more structural holes that an investment bank bridges, the greater its status accumulation (Shipilov & Li, 2008). Vasudeva, Zaheer, and Hernandez (2013: 645) found that a "firm spanning structural holes obtains the greatest innovation benefits when the firm (the broker) or its alliance partners are based in highly corporatist countries." Zaheer and Bell (2005) found that structural holes increase firm performance, but even more so if that firm also has innovative capabilities.

While structural holes research has reframed the underlying theory to focus on bridging ties as determined by network attributes instead of tie attributes, it has not overturned Granovetter's (1973) notion of bridges often connecting socially distant circles (Levin et al., 2011). "Redundancy is unlikely, indicating a structural hole, between total strangers in distant groups" (Burt, 1992: 20). Therefore, ties to more 'distant' groups are more likely to be bridges, due to the lower likelihood of overlapping

third parties. This theoretical basis allows one to predict which ties likely span structural holes based on a tie's characteristics instead of the overall network's structure. That is, the social distance between the two groups the tied actors are within.

There are advantages and limitations to this focus on network attributes instead of tie attributes. The advantage of focusing on network attributes is that one can ensure that an apparent bridging tie is, in fact, spanning a structural hole and not linking to a group otherwise connected through structural equivalence (Burt, 1992). That is, one can ensure that a structural hole is, in fact, a structural hole. However, this is contingent on including enough ties to adequately capture the network structure (Burt, 2007, Merluzzi & Burt, 2013).

Network attribute analysis is only as good as its representation of the entirety of the ties present (Burt, 2007). That is, omitting ties from the network analysis can create false attributes. As pointed out earlier, an apparent structural hole may in fact, be connected by multiple inactive (currently neglected, but potentially reconnected) ties (Levin et al., 2011). Beyond excluding inactive ties, this problem of inadequately capturing the network can also stem from not including other types of active ties in the analysis. For instance, an apparent structural hole in the inter-firm network of board interlocks could, in fact, be bridged by active ties to the same investment bank. In this case, the ties to the mutual investment bank could act as a substitute for the missing (in this example) interlock ties.

Further, network attributes can vary based on the network boundary. That is, the network of ties within a single industry presents different attributes than that industry as

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a subset of a wider network of related industries ties. There are two reasons for this. First, the information a node offers is a function of the other nodes beyond it in the network. Second, there may be additional indirect ties to firms within a single industry that are tied through firms outside that industry. In this example, the firm in question would have less centrality when considering a single industry network than a multi-industry network. Similarly, such a firm's relative access to novel information is different based on where the inter-firm network's boundary was drawn.

The other limitation to the analysis of network attributes is that it does not allow the examination of individual bridging ties, as they are considered in aggregate. As mentioned above, structural network studies focus on the amount of bridging ties possessed by the actor (e.g., firm) rather than the benefits of a specific bridging tie (e.g., Shipilov & Li, 2008).

In contrast, focusing on tie attributes does not present these same limitations. A tie's attributes are independent from the inclusion or exclusion of other ties from the network considered. Further, attributes of ties are unaffected by the position of the network's boundary.

Another advantage of using ties' social distance instead of network attributes to identify structural holes is that it provides the ability to consider different bridges of structural holes, individually. While much research has focused on the benefits of spanning more structural holes than others in the network (e.g., Batjargal, 2010; Gargiulo & Benassi, 2000), few consider the relative value of spanning one specific

structural hole over another. This allows examination of how differences between various structural holes influence a strategic outcome.

In general, more socially distant ties, such as those to an unrelated industry, are less likely to be redundant and therefore bridge structural holes within the network. Further, distant ties are more likely to provide novel information and knowledge to the industry. For instance, Geletkanycz and Hambrick (1997) found that executives' intra-industry ties were related to firm strategies conforming to industry norms while inter-industry ties were related to strategies that deviated from those norms. These findings support the idea that ties to the firms outside the industry provided information and ideas that differed from those common (redundant) within the industry.

It is important to consider that social capital theory warns of a limit to the relationship between higher social distance and valuable information. The "risk [is] that socially distant actors will not value one another's resources" (Reagans & Zuckerman, 2008: 905). Information that is too far outside industry norms, that is, that goes against too many conventions or assumptions might be dismissed out of hand. A parallel in the social sciences would be that new research must attack 'the taken-for-granted' to be interesting, but not attack so many assumptions as to be disregarded (Davis, 1971). It is possible that executives from industries too far removed from the focal one will have trouble convincing their new firm of the value of ideas, processes, and opportunities that flow through a tie to an unrelated industry, as they are too far outside of the current norms. Similarly, executives at the focal firm may have more difficulty absorbing and processing information that is too far outside their norms.

In the context of this study, however, there is an inherent upper bound in the social distance of the executive inter-firm ties. While ties' extreme levels of social distance will likely provide information too far outside the bounds of industry thinking, it is less likely that such ties would be connected in the first place. Certainly, the hiring process would greatly reduce the number of executives brought in with totally unrelated prior work experience. While such moves do occasionally occur to 'shake things up', they are rare. The social distance of board interlocks, while potentially more relaxed, are likely to have a similar upper bound on social distance due to the selection process. Therefore, the selection process for executives and directors should eliminate worries of inter-firm ties with information that because of too high a social distance is not transferred.

An important question emerges, though; namely, how can a researcher establish the social distance between various industries?[3] To examine the social distance of specific ties, I borrow from the human capital literature on transferability. The varying degrees of transferability of human capital across firms has been long a part of the academic conversation through the various types of human capital. "Human capital theory distinguishes between general human capital, which is applicable to many organizational contexts, and firm-specific human capital, which is valuable only to a specific organization (Becker, 1962). The firm specificity of workers' skills is the degree

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[3] There is a network path 'distance' or shortest number of ties between nodes that can be calculated mathematically. However, this is not the same as the social distance being considered as a bridging tie between two socially disparate groups will greatly reduce the path distance, but not necessarily cause the two social groups to start intermingling.

to which the human capital they acquired at a particular firm is idiosyncratic and therefore useless at other firms" (Groysberg, Lee, & Nanda, 2008: 1214). However, scholars acknowledge that some skills are transferable across similar firms. For instance, Castanias and Helfat (1991: 160) describe "a hierarchy of three types of skills: (a) generic skills, defined as those that are transferable across industries, businesses, and firms, (b) type of business or industry—related skills, and (c) firm-specific skills." The two scholars later added "'related-industry' skills that can be transferred outside of an industry to other industries that make related products or that utilize related resources and production" to their hierarchy of managerial skills (Castanias & Helfat, 2001: 663).

The varying degrees of transferability give us an objective way to measure the social 'distance' of various actors, as they are nested within firms and industries. Therefore, inter-firm ties can be categorized into three levels of social distance with firms in unrelated industries being more distant than related industries that, in turn, are more distant than firms located within the focal industry. As current research often classifies acquisitions as related or unrelated based on the two firms' primary Standard Industry Classification (SIC) codes (Fan & Goyal, 2006), this allows for easy categorizing of industries as more or less socially distant.

Prior Ties

Researchers have considered the potential social capital of executives from their prior associations. The most commonly studied are prior educational associations, but prior employers have also been considered. However, such studies have only examined such prior associations as a proxy for a relative level of social capital. For instance, an

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executive with a prestigious degree (i.e., Ivy League), has a greater amount of social capital than an executive without a prestigious degree. Similarly, an executive with prior employment by a *Fortune* 100 company will be considered to have more social capital. As in these examples, the prestige proxies of social capital are usually binary in nature. Thus, the study of executives' relational ties of such prior associations has been coarse grained and limited.

However, there has been some research investigating the prior relational ties of scientists and inventors. For instance, Liebeskind, Oliver, Zucker, and Brewer (1996) found that scientists at new biotech firms use the social networks from their prior university work to increase their learning. Likewise, (Bouty, 2000) found that social ties amongst R&D researchers, including those to past employers, fostered innovation. Finally, scholars found "knowledge flows to an inventor's prior location are approximately 50% greater than if they had never lived there, suggesting that social relationships, not just physical proximity, are important for determining flow patterns" (Agrawal et al., 2006: 571). These studies show that prior relational ties can be important.

To date, the relational ties of executives considered by researchers have been those that are observable as currently active. These are relationships that are within the context of the professional sphere with known interactions. For instance, directors on the same board will have interactions at publicly reported board meetings. Another example would be the relational ties to the investment banking professionals assisting with a current acquisition (Haunschild, 1994). However, once these known contexts end, such

as when a director leaves the board, those relational ties are no longer considered by scholars.

It is likely that scholars have avoided prior relational ties because of the difficulty associated with determining if the relationships are continuing to be active. A professional context can often provide a known level of personal interaction such as directors attending quarterly board meetings or co-workers routinely interacting at the office. Meanwhile, a personal context is often much more opaque to scholarly observation. This creates a problem for the study of relational ties: are those ties still active? While it is certainly common to maintain relationships with people from prior professional settings, the majority of those relationships will become 'neglected' due to the constraints of time. Scholars have used other labels for 'neglected' relational ties including 'inactive', 'latent', and 'dormant'. Regardless of label, these describe relational ties that have not been actively maintained for some time (e.g., Levin et al., 2011 examined relationships neglected for at least three years). This relational 'neglect' is common because an average person accumulates thousands of relational ties but maintains fewer than two hundred active ties (Killworth, Johnsen, Bernard, Shelley, & McCarty, 1990). While executives may be able to actively maintain more relationships than average, they are still constrained by too few hours in the day to stay in contact with every past relationship. This high drop-off of active prior ties has led scholars to largely ignore them:

> "Losing touch is all too common… The finite limits of time, however, create a natural ceiling on the number of relationships that a person can actively maintain (Dunbar, 1993; McFadyen & Cannella, 2004). As a result, many

relationships—even positive, rewarding relationships—end up neglected. Both practitioners and scholars have treated this type of "neglected" tie— and its ability to offer economic or other nonsocial benefits (i.e., its social capital)—as dead and irrelevant (Burt 1992, 2002; Coleman 1990)" (Levin et al., 2011: 923).

However, these neglected ties should not be dismissed. A recent study found that executive MBA students' ties to individuals with whom they had not spoken with for at least three years were just as readily consulted for advice as their ties that were still currently active (Levin et al., 2011). Meanwhile, other scholars found that old relational ties from college years proved valuable social capital many years later (to the tune of 7.8% better investment returns for portfolio managers on firms with former classmates than those without) (Cohen et al., 2008). Therefore, ties that are neglected (currently inactive), can be reconnected in the short term (Levin et al., 2011).

With the ability to reconnect neglected ties so readily, one must be careful when analyzing relational networks. Most network studies only include active ties and therefore omit ties that have become inactive. This can cause problems when considering network attributes such as structural holes. Many inactive ties may actually bridge an apparent structural hole between two groups (Levin et al., 2011). This suggests that prior ties –even older, potentially neglected ones– should be considered as a part of the complete relational network.

Executive Prior Employment Ties

An important type of prior relational tie scholars have overlooked is that from executive prior employment. Recent research has shown that (non-executive) employees

exiting the firm retain social ties with their former co-workers and those ties are strong

enough for knowledge flow (Agrawal et al., 2006; Corredoira & Rosenkopf, 2010).

Other studies have found that professional service providers, such as accountants and

lawyers, can bring their client relationships with them as they move between firms

(Somaya, Williamson, & Lorinkova, 2008; Wezel, Cattani, & Pennings, 2006). Further,

Somaya et al. (2008) found that losing and gaining an employee to/from a client were

both good for the firm (due to more business from the client). Examining marketing

managers and advertising clients, Broschak (2004: 632) found "strong evidence that the

career mobility of managers and the market ties of firms are intertwined." These studies

show that an employee's ties to prior employers are important, but little is known about

the impact of knowledge flow through the prior employment relational ties of

executives.

Industry practices demonstrate the importance of the prior employment history of

a firm's executives. In the United States for example, SEC regulations require firms to

list the five-year career histories of their managing officers on their S-1 filing (Higgins

& Gulati, 2006). Meanwhile, practitioners highlight the employment backgrounds of the

firm's executives during a firm's pre-IPO road show presentation (e.g., Lipman, 2000).

These practices clearly show that prior executive employment is an important

consideration for investors.

Thus far, in one of the few studies available, researchers found that, "firms linked

to the bank through executive migration were disproportionately likely to be recruited as

benchmarking partners." (Still & Strang, 2009: 58). Such benchmarking partner firms

are visited to learn their 'best practices'. Further, Still & Strang (2009) found benchmark firms linked to the bank through executive prior employment were nearly twice as influential as other benchmark firms. The same study did not find board interlocks or geographic proximity to have the same effect. Boeker (1997) found the prior employer of executives within the semiconductor industry affected product market entry. That is, firms tended to launch new products from a new executive's prior firm's product lines. This tendency was stronger in firms with smaller and less tenured top management teams. Further, research has found that executives' ties to their prior employers influenced firm strategy. That is, executives with prior employment from within the focal industry conformed to industry norms for strategy, while executives with prior employment from other industries deviated from those norms (Geletkanycz & Hambrick, 1997). Outside of the findings of this handful of studies, we know relatively little about the influence of executive prior employment ties.

Therefore, this study considers the influence of executives' relational ties to an unrelated industry on unrelated acquisitions. There exists a shared 'industry knowledge', as it is widely known to those in the industry (and therefore redundant to industry members). However, as unrelated industries represent socially distant groups, the members of each industry possess information that is likely not redundant to the members of the other industry. Therefore, a relational tie that bridges these two socially distant groups would provide an informational conduit to valuable, non-redundant information (Burt, 1992, Granovetter, 1973). Such information could both help identify potential acquisition targets and reduce the informational asymmetry inherent in any

acquisition, thereby making them a more attractive target. Therefore, I contend that executives' relational ties to an unrelated industry provide an informational conduit to valuable, non-redundant information that influences the likelihood of acquiring targets in that industry.

Hypothesis 1: An executive prior employment tie to an unrelated industry increases the likelihood of an acquisition in that industry.

Tie Decay

"Social capital does not have a predictable rate of depreciation—for two reasons. First, while it may depreciate with nonuse (and with abuse), it does not depreciate with use… it normally grows and develops with use—for example, trust (which we argue is a key source of social capital) that is demonstrated today, typically will be reciprocated and amplified tomorrow. Second, while social capital sometimes is rendered obsolete by contextual changes (see Sandefur & Laumann, 1998, for examples), the rate at which this happens is typically unpredictable so that even conservative accounting principles cannot estimate a meaningful depreciation rate." (Adler & Kwon, 2002: 22)

As Adler and Kwon point out, unlike physical capital, one cannot simply consult a depreciation table for social capital to assess its decay rate. However, social capital does decay over time. Over long periods of time, people eventually die and any resources embedded in their ties are eliminated. While this is obviously an extreme example, it demonstrates that eventually social capital expires. Alternatively, researchers up to this point have largely considered any neglected tie as irrelevant (e.g., Burt, 2002). While Levin et al. (2011) defined a tie as 'neglected' after three years without contact

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between the two individuals, most studies ignore relational ties the moment professional contact is discontinued or, at least, likely minimized. This has left a rather large gap of time –from the moment a co-worker or co-director adds 'former' to that title, to their eventual demise– without much empirical investigation.

A few studies have considered the decay rate of relational ties. In investigating neglected ties, Levin et al. (2011) was able to analyze the decay of 'especially close' ties over time. By comparing the respondents' (until recently neglected) reconnected ties to their currently active ties, the researchers were able to ascertain the changes over time in the reconnected ties, relative to the current ones. This was possible as the reconnected ties were all considered to be individuals the respondents considered 'especially close' while current (actively maintained) ties included those to 'especially close', 'distant', and 'in-between' people. The results show that the reconnected 'especially close' ties' level of trust had decayed to that of the current 'in-between' ties, but still above that of the current 'distant' ties. However, the reconnected 'especially close' ties' level of shared perspective had not decayed and was similar to the current 'especially close' ties (Levin et al., 2011) Because the study was not initially designed to study the decay rates of neglected ties, this was the limit of what the researchers could assess through post-hoc analyses.

Lester, Hillman, Zardkoohi, and Cannella (2008) considered the decay of former government officials' human and social capital, who were appointed as outside (non-employee) directors. Specifically, they examined the change in likelihood that a former government official would be appointed to a board of directors. They found "that former

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government officials' likelihood of joining corporate boards is time dependent; that is, over time and irrespective of chronological age, their attractiveness as directors tends to depreciate" (Lester et al., 2008: 1010). However, they also found two hazard rate peaks for former cabinet members: one immediately after leaving office and one about five years later. A similar, albeit smaller, dual peak was also found for former senators, but not for former members of the House (see Lester et al., 2008's Figure 1 reproduced in the Appendix as Figure 2). Lester et al. (2008) suggested this second peak could be due to the initial board service ending and being replaced with new board seats, but they admitted this was speculative. Another issue as it pertains to my study are the many potential differences among the social capital from prior employment including an elected federal government official, member of the President of the United States' cabinet and prior employment at another firm. The differences in the social capital, likely affect the decay rates of that social capital.

Finally, Baum, McEvily, and Rowley (2012) considered the impact of time on both closure (embedding) and bridging ties of investment bank underwriting syndicates. Following a firm's choice of a lead bank to oversee the underwriting responsibilities involved in issuing shares, "the lead bank invites additional investment banks to participate as co-leads in an underwriting syndicate as a means of spreading risk and acquiring industry-specific skills, investor contacts, and distribution capabilities that help the syndicate to reach a wider range of investors (Pollock et al. 2004)" (Baum et al., 2012: 533). Germane to this study, they found that the benefits of bridging ties between the investment banks decreased with age. Age in this case is the length of on-going

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formal ties between the banks, similar to a strategic alliance between firms. Further, the relationship was that of bridging tie age and bank market share. Therefore, the generalizability of their findings to that of executive relational ties and firm acquisitions is likely low.

A better understanding of the decay rate of relational ties can help future researchers determine which ties should be included in the network analysis. Network scholars must be careful to sufficiently capture the whole network by including enough ties and enough tie types (Burt, 2007, Merluzzi & Burt, 2013). This is a reoccurring topic in the social capital literature. Burt (2007) raises it, discussing secondhand brokerage. Merluzzi and Burt (2013) discuss the practical tradeoffs of soliciting enough relationships to capture the network without becoming overly burdensome on respondents and researchers. Multiple dormant ties may bridge an apparent structural hole between two groups (Levin et al., 2011). With a 'known' decay rate, researchers could more easily assess what 'age' of ties needs to be included in a relational network analysis. Conversely, at what 'age' can relational ties be safely ignored?

An additional consideration is the aggregate nature of the prior employment tie. A tie to a past employer represents ties to a multitude of individuals including former co-workers, suppliers, buyers and even competitors (Bergh, 2001). In this study, individuals in the prior industry may retire or change industries themselves, thereby reducing the information flow from the industry due to context changes (Sandefur & Laumann, 1998). In such cases, even though the relational tie between the focal executive and the former co-worker (or supplier, etc.) remains strong enough for knowledge and

information flow, as the non-focal individual is no longer employed in the industry in question their industry knowledge will start becoming outdated. Because of this, the decay rate of the non-focal industry information access may be faster than underlying relationships. However, due to the largely redundant nature of the information in question, it is more likely that the decay rate of the aggregated tie is slower than the average relationship, as a single prior industry contact could potentially supply similar information to multiple contacts. Therefore, I predict the following:

Hypothesis 2: The greater the time since the executive left the prior industry, the weaker the relationship between executive prior industry ties and acquisitions in that industry.

Beyond the idea that neglected relational ties decay over time. There is at issue how quickly (slowly) that decay occurs and therefore what aged ties should be considered by researchers. Given the aggregate nature of the executive prior employment tie and the available empirical findings on tie decay, I contend that the influence of executive prior employment ties will be long lasting. Of course, to be testable I must assign a reasonable number to 'long lasting'. For this I turn to CEO tenure, the mean of which was at 6.8 years in publicly traded firms in 2007 (Patel & Cooper, 2014). If the decay rate is slow enough that 7-year-old executive prior employment ties are still influential, this would mean that (on average) outside CEOs are influenced during their entire tenure with the firm. Further, a survey of 5,000 executives estimated the average tenure of other top executives at less than half that of CEOs at just

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3.2 years in 2007 (ExecNet, 2009). This suggests that seven years is a reasonable time cutoff for researchers' consideration of these ties.

Tie Strength

"Most intuitive notions of the 'strength' of an interpersonal tie should be satisfied by the following definition: the strength of a tie is a (probably linear) combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services which characterize the tie" (Granovetter, 1973: 1361).

While tie 'strength' has long been a part of the discussion, it is important to note that there are two inter-related yet distinct aspects of a relational tie that have been referenced as 'tie strength'. First, there is the *current* strength of the tie. "Ties can be more or less preferential and stable, more or less trustworthy, and entail richer or more limited information exchange" (Baum et al., 2012: 529). Relational embeddedness emphasizes tie strength with a focus on the level of trust and the depth of information exchange (Uzzi, 1996). A stronger relationship exhibits higher levels of trust and therefore the potential for deeper exchanges of information.

However, the current strength of a relational tie is dynamic, as each interaction can potentially strengthen or weaken it. For instance, abuse can weaken a relationship while demonstrating trust can strengthen it (Adler & Kwon, 2002). Further, the frequency and duration of interactions can affect the strength of a relational tie. Stronger relationships are typically forged with more frequent interactions and longer periods of time spent together. This environmental *tendency to create* a certain level of strength is the second aspect of tie strength common to the literature. For instance, this is what

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Granovetter (1973) considers when discussing 'strong' and 'weak' ties. 'Weak' ties are more likely to be a source of novel information due to their social distance and infrequent interaction (Levin & Cross, 2004).

In many cases, the subtle distinction between a relational tie currently being strong (weak) and being inside an environment that can forge a strong (weak) tie does not matter. However, in this study, the movement of the executive between industries that changes the environmental context makes the distinction crucial. The social distance between unrelated industries reduces the frequency of interactions and overlap between members of each industry that creates the likelihood of novel information between these groups. Because of this, a tie that bridges these groups would be considered 'weak' in Granovetter's terminology. However, prior to changing industries, the executive would possess 'strong' ties to those in that industry (using the same terminology). I contend that while inside the 'strong' tie context of the prior industry, the executive developed relational ties that are 'strong' in the relational embeddedness meaning of the word. That is, ties with greater trust and information exchange (Baum et al., 2012; Uzzi, 1997) derived from the frequent interactions among socially close co-workers. Then once the executive changes industries, those ties become 'weak' in Granovetter's terminology and therefore offer the potential for novel knowledge flow, but remain 'strong' from relational embeddedness perspective.

It is this latter relational embeddedness strength of ties that I will consider as a moderator of the 'weak' ties that bridge socially distant industries. This idea of prior strength has been examined in studies that consider the effect of previous interactions.

Research has shown that individuals with a history of interactions are more helpful and accessible (Cross & Sproull, 2004), provide more assistance to each other (Seibert et al., 2001) and possess higher levels of trust (Levin & Cross, 2004). Thus, the strength of the individual relational ties of the executive at the time of exit from the industry will influence the amount and depth of information and knowledge that flows across the aggregate inter-industry tie. Therefore, I predict the following:

> *Hypothesis 3: The strength of the executive's relational ties to the prior industry at the time of exit will moderate the relationship between an executive prior employment tie to an unrelated industry and acquisitions in that industry such that the relationship will be stronger, the stronger the ties are at exit.*

Tie Direction

> "This paper departs from most previous studies by exploiting a unique characteristic of social capital: the bidirectionality of social ties in the context of information transfer" (Corredoira & Rosenkopf, 2010: 160).

This study joins the previous few that consider the flow of information both to and from, a prior employer. Recent research has shown that exiting employees retain social ties with their former co-workers and that those ties are strong enough for knowledge flow in both directions (Agrawal et al., 2006). In fact, Corredoira and Rosenkopf (2010) specifically focused on 'outbound mobility'. However, prior studies have not considered if prior employment tie directions have different levels of influence on the firm.

Four conditions or cases make a received tie a stronger influence on the acquisition activity than a sent tie. First, there are more individuals in the unrelated

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industry who are tied to a focal firm when the executive joins the focal firm (received) than exits it (sent). In the former case, the executive is tied to a multitude of individuals including former co-workers, suppliers, buyers and even competitors (Bergh, 2001). While in the latter, the focal firm's co-workers (most importantly the top executives responsible for acquisition decisions) are only tied to the exiting executive. Therefore, the inter-industry tie that is an aggregate of the individual relational ties to unrelated industry represents many individuals in the nonfocal industry in a received tie but only one individual in a sent tie. This both increases the total unrelated industry knowledge accessible to the focal firm and decreases the reliance on any single relationship in a received tie. For instance, if the executive exits the focal firm on bad terms that could potentially remove any potential for future knowledge flow.

Second, an executive joining a firm from another industry brings with him/her more than social ties to the focal firm. These transplant executives bring their human capital as well as their social capital from that industry. Much human capital does not typically transfer between unrelated industries as the firm-specific and industry-specific knowledge, skills and abilities don't translate to the new context (Castanias & Helfat, 2001). However, this is not case in selecting acquisition targets in one's former industry. In this context, the industry-specific knowledge can be incredibly valuable to the focal firm in analyzing and selecting target firms.

Fourth, the received tie possesses executive authority at the focal firm. That is, a received executive is currently employed by the focal firm and therefore directly guiding (at least partially depending on the executive's role) the firm. In contrast, the exiting

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executive provides the former firm with only social capital based informational access to her/his new non-focal industry.

Finally, executives may also be recruited to access their human and social capital resources not yet possessed by the firm (e.g., Rao & Drazin, 2002) before entering a new industry. In such cases, the firm may already be pre-disposed to engage in acquisition activity in the executive's prior industry. While the frequency of such recruiting is unknown, it is unlikely that the opposite ever occurs: sending an executive to work in an unrelated industry instead of the focal firm as a pre-acquisition informational source. Because of these differences in combination, I predict the following:

Hypothesis 4: The direction of the executive mobility will moderate the relationship between an executive prior employment tie to an unrelated industry and acquisitions in that industry such that the relationship will be stronger for ties created by an executive joining the firm (than exiting the firm).

CHAPTER IV

METHODS

Sample & Data Sources

My sample consisted of all the public U.S. firms in the 'computers and office equipment' industry (SIC 357) from 2002-2014. This industry was initially investigated as a potential sample because of anecdotal evidence that firms within it often engaged in unrelated acquisitions. This proved to be true as the 123 focal firms engaged in 648 acquisitions during the sample 13-year period, of which 478 (74%) were in unrelated industries. For instance, Adaptec Inc., an enterprise and consumer computer data storage company, acquired Baseball Heaven, LLC. This sample was then selected as one with sufficient unrelated acquisitions for testing and as an industry representative of other high tech and dynamic industries.

While the sample represents a possible panel of 1599 observations, not all of the firms existed for the entire time period, reducing the actual sample size to 1155 firm-year observations. A small number of missing financial controls were replaced with averages to keep from dropping observations after determining that such replacements did not alter the results.

Acquisition data, including the industry location (primary SIC) of all the acquisition targets of the focal firms, were collected from Thomson One (formerly SDC Platinum) including three additional years (1999-2001) for the prior acquisition experience control. Board interlock, employment history of the five highest paid executives, and governance control data were collected from BoardEx. BoardEx data

starts in 2000 and expands to include many more firms from 2002 on. As of December 2015, BoardEx had 92,498 individuals and 130,989 organizations in its database. Further, BoardEx creates a unique identifier for firms listed in executives' work histories that are not already tracked by BoardEx. This raises the total number of firms possible for employment ties to 210,639 (16,279 public and 194,360 private). Financial control data were collected from Compustat North America.

Dependent Variables

Current research classifies an acquisition as unrelated if the acquiring firm and target firm have different primary SIC codes (Fan & Goyal, 2006). Following recent studies, unrelated industries are defined by 3-digit SIC excluding the focal industry (Lim, Das, & Das, 2009). An acquisition is defined as the takeover of an existing company or of any of its business units through either full ownership or a majority of controlling stock (Barkema & Vermeulen, 1998; Vermeulen & Barkema, 2001). Acquisition announcement dates were used instead of completion dates for three reasons. First, this study is interested in relational ties as an antecedent to firms engaging in unrelated acquisitions – not successfully completing those unrelated acquisitions. Second, the earlier announcement date is more appropriate to investigate the moderating effect of the decay of the prior employment tie, as the effect in question is the initiation of an acquisition, and the ties would be older by the completion of the acquisition. Third, as the effect of interest is the initiation of an acquisition, the announced date allows for better classifying whether prior relational ties were sent or received at the time the firm first became interested in acquiring the target. This is because the classification would

change if the executive in question changed firms between the announcement and completion of the merger.

In the alternative-specific conditional logit multi-industry analysis (H1), each ***unrelated acquisition*** is considered as a separate 'decision' between the various 'choices' of unrelated industry locations. Specifically, the 11 most frequently appearing unrelated industries in the sample were used. Those industries' in order of most to least-frequently chosen for unrelated acquisitions, with the frequency of acquisitions in the sample in parentheses, are as follows: computer programming, data processing, and other computer related services (327), electronic components and accessories (24), miscellaneous business services (21), communications equipment (10), management and public relations services (10), telephone communications (10), professional and commercial equipment and supplies (9), search, detection, navigation, guidance, aeronautical, and nautical systems, instruments, and equipment (6), photographic equipment and supplies (4), motor vehicles and motor vehicle equipment (4), and miscellaneous investing (4). Data for this analysis are coded with a separate observation for each industry 'choice' for each unrelated acquisitions (11 industries * 399 unrelated acquisitions in those industries). The 'choice' is coded 1 for industry of the unrelated acquisition target and 0 for all other industries. Robustness testing included fewer industry 'choices' in the analysis.

In the panel logit single industry analysis (H2-4), as well as the clustered logit and panel negative binomial analysis, I measured the frequency of ***unrelated acquisition(s)*** as the number of acquisitions announced by each company in each year in

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the unrelated industry: 'computer programming, data processing, and other computer related services' (SIC 737). Firm-years with no acquisition in that unrelated industry were coded 0. This is consistent with the approach used by Nadolska and Barkema (2014).

Independent Variables

Executive prior employment tie is dummy coded as 1, if there is at least one inter-industry tie created by an executive's prior employment history between the focal firm and a firm in the same industry as the unrelated acquisition. I constructed a list of these ties using the employment history in BoardEx which includes 254,023 'senior managers' defined as the five most highly compensated executives at each firm, each year. For each executive and year, a tie was created between the current employer of the executive and all of the prior employers at that point in time. Ties to non-focal firms within the focal industry (primary SIC code of 357) were removed, as were ties to firms where the SIC code was unknown. This left only ties to firms known to be in an unrelated industry.

Tie strength was calculated as the number years of executive employment at each prior firm in the employment history; it was collected as an integer rounded down for each calendar year. If there was more than one tie between the focal firm and an unrelated industry, the strength is the average number of years per tie.

Tie age was calculated as the years of since exiting each prior firm in the employment history for each tie; it was collected as an integer rounded down for each calendar year, with the exception of executives who moved firms that calendar year,

which were assigned a value of 0.1. If there was more than one tie between the focal

firm and an unrelated industry, the age is the average number of years per tie.

I use the terminology of 'sent' and 'received' ties routinely used in interlock

research (Palmer et al., 1995) to describe the direction of the executive mobility between

firms. That is, which firm is the current employer of the executive and which firm is the

prior employer. *Sent executive prior employment tie* is a dummy, computed the same as

executive prior employment tie described above, except all ties where the executive is

still employed at the focal firm are excluded. This creates a subsample of ties that only

includes where the executive has already exited the focal firm. *Received executive prior*

employment tie is a dummy computed the same as *executive prior employment tie*

described above, except all ties where the executive has already exited the focal firm are

excluded. This creates a subsample of ties that only includes where the executive is still

employed at the focal firm.

Control Variables

I control for the many influences of board interlocks as they are the "most well-

studied of all forms of executive ties" (Geletkanycz et al., 2001: 890). *Board interlock*

tie is a dummy coded 1 if there is at least one inter-industry tie created by an interlocking

directorate between the focal firm and a firm in the same industry as the unrelated

acquisition. Similar to Beckman et al. (2004), I collected data on all inside and outside

directors of the focal firms from BoardEx. Inside directors are executives and board

members of the focal company and create sent ties when they sit on the board of another

company. Outside directors create received ties from the firm with which they are

principally affiliated. Outside directors also create neutral ties to the focal firm from those firms on whose boards they sit (but with whom they are not principally affiliated). Similar to Haunschild (1998), this study considered all types of interlocks (Sent, Received, and Neutral) equally.

I also include several relevant controls in my models. These controls are similar to those found in recent acquisitions studies (e.g., Gamache, McNamara, Mannor, & Johnson, 2015; Nadolska & Barkema, 2014) As firm size measures are not interchangeable, it is important to justify the specific measure selected (Josefy, Kuban, Ireland, & Hitt, 2015). Scholars have shown *firm size* may influence acquisition behavior (Amburgey & Miner, 1992) and following recent studies (Gamache et al., 2015) I controlled for it with the log of assets of the acquiring firm.

I use *year dummies* to control for overall economic trends, potential bandwagon effects when other firms are acquiring in the same unrelated industry, and for other temporal influences on unrelated acquisitions (Nadolska & Barkema, 2014).

I control for the impact of CEO turnover on overall acquisition strategy and the amount of scrutiny that investors place on acquisitions by a new CEO (Lant, Milliken, & Batra, 1992; Romanelli & Tushman, 1994). *New CEO* is a dummy coded 1 for first year of new CEO.

The amount of prior acquisitions may influence the number of future acquisitions. Following recent studies (Reuer, Tong, & Wu, 2012), I measured *unrelated acquisition experience* as the total unrelated acquisition activity over the previous three years for each firm-year.

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I controlled for *__firm slack__* using the firm's current assets, divided by its current

liabilities – the so-called 'current ratio' (Mishina, Pollock, & Porac, 2004), as managers

may use free cash flow for acquisitions to increase their prestige, power, and

compensation, regardless of whether the acquisitions enhance firm value (Jensen, 1986).

I control for capital structure (Hitt, Hoskisson, & Kim, 1997; Vermeulen &

Barkema, 2002), with the *__debt to equity ratio__* (leverage) as it may affect the frequency of

acquisitions (Jensen, 1986).

Consistent with Nadolska and Barkema (2014), I controlled for differences in

the composition of board of directors by controlling for the *__board size__* and the *__average__*

__director tenure__ in years on the board.

Analysis

A less common type of analysis was required to analyze the multi-industry

location possibilities of an unrelated acquisition while considering if ties matched the

target firm's industries. Traditional logit analysis with a dummy coded 1 if there is a

matching tie, creates a selection bias because a 'match' can only occur when there is an

acquisition. Further, coding such matching tie dummies is problematic with multiple

locations possible in the dependent variable. For instance, the dummy for a tie to

industry A should explain variance when the dependent variable target location is

industry A, but not when it is industry B, C, or D. Likewise, the dummy for a tie to

industry B should explain variance when the dependent variable target location is

industry B, but not A, C, or D. This creates a bias for industries with more acquisitions

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that cannot be accounted for with traditional logit analysis. However, this bias is controlled for with alternative specific conditional logit analysis.

Stata's asclogit (alternative specific conditional logit) fits McFadden's choice model, which is a specific case of the more general conditional logistic regression model (McFadden, 1974). Asclogit requires multiple observations for each case (decision), where each observation represents an alternative that may be chosen (Stata, 2012). Due to sample size, the maximum number of industry location choices that could be considered by asclogit was 11. Industries with the most acquisitions in the sample were used to maximize the sample size and therefore the number of industries included in the analysis. Those industries' SIC codes in order of most to least-frequently chosen for unrelated acquisitions, with the frequency of acquisitions in the sample in parentheses, are as follows: 737 (327), 367 (24), 738 (21), 366 (10), 874 (10), 481 (10), 504 (9), 381 (6), 386 (4), 371 (4), and 679 (4). While 11 industries may seem a small portion of the 40 different unrelated industry targets in the sample, it does include every industry with more than three total acquisition targets over the sample period and accounts for 83% of the total unrelated acquisitions in the sample.

In my sample 327 (68%) of the total 478 unrelated acquisitions were in a single industry: the computer programming, data processing, and other computer related services industry (SIC 737). This subset of acquisitions allowed me to use traditional logit analysis on a single target industry, which avoids the issues of a multi-industry location-dependent variable outlined above.

While focusing on a single unrelated industry is more limited for testing the main effect, it does allow for moderation testing, not possible with alternative specific conditional logit analysis. This single industry analysis was done with xtlogit. Stata's xtlogit fits random-effects, conditional fixed-effects, and population-averaged logit models. Xtlogit is for panel data with a dependent variable that is nonzero, with nonmissing indicating a positive outcome and zero indicating a negative outcome (Stata, 2012). A Hausman test showed individual level effects are uncorrelated with the other covariates in my model, allowing the use of random-effects in my analysis. I reported results below with the odds ratios, as they are easier to interpret than the normal logit coefficients.

CHAPTER V

RESULTS

Table 1 reports the means, standard deviations, and correlations for the primary variables in the models that test hypotheses 1-3. Correlation levels between the variables are low with the exception of executive prior employment tie, executive prior employment tie age, and executive prior employment tie strength. These higher correlations make sense as a tie must be present (coded 1) for it to have an age and strength level. Further when the executive prior employment tie absent, the tie itself, the tie age, and the tie strength would all be coded 0. Fortunately, the variance inflation factors are all below 3 for the variables in question, suggesting no problems of multicollinearity (Kennedy, 2008). Table 2 reports the means, standard deviations, and correlations for the primary variables in the models that test hypothesis 4 as subsample analysis was utilized test that moderation. Both the correlation levels between the variables and the variance inflation factors that are all below 2 for the variables in question suggests no problems of multicollinearity (Kennedy, 2008).

Table 3 shows the results of the asclogit regressions for the unrelated acquisitions occurring in 11 unrelated industries where there were at least 4 acquisitions (see analysis section for listing). Hypothesis 1 stated that an executive prior employment tie to an unrelated industry increases the likelihood of an acquisition in that industry. Results show that firms with an executive prior employment tie to an unrelated industry are 3.10 times more likely to make an unrelated acquisition in that same industry (p<.01).

Robustness testing with different industry cut off points (models R1-R6 in Table 4) found very similar results. Further, robustness testing that excluded the unrelated industry with the greatest number of acquisition targets and then used different industry cut off points (models R7-R12 in Table 5) also found very similar results. Therefore, hypothesis 1 receives support and the result are robust. I have reported the results with the odds ratios, as they are easier to interpret than the logistic coefficients.

Also notable is that a board interlock tie to the unrelated industry was generally found to lose statistical significance when the executive prior employment tie was added to the model. For instance, in the primary analysis, a board interlock tie was statistically significant in the controls only model 1, but became marginally significant in model 2, which added the executive prior employment tie. Further, in robustness testing, that a board interlock tie to the unrelated industry was marginally significant in the controls only models R3, R5, R9 and R11 and lost statistical significance when the executive prior employment tie was added in models R4, R6, R10 and R12.

Table 6 shows the results of the xtlogit regressions for the unrelated acquisitions occurring in the 'computer programming, data processing, and other computer related services' industry (SIC 737). This single industry subsample accounts for 68% of the total unrelated acquisitions in the sample (327 of 473) and allows for moderation testing. In the controls model 3, there are three statistically significant control variables with positive coefficients: a board interlock to the unrelated industry ($p<0.001$), recent unrelated acquisition experience ($p<0.001$), and firm size ($p<0.01$). Model 4 in Table 6 tests the same main effect as hypothesis 1 for the subsample (using only one unrelated

industry) and finds similar, but stronger results: firms with an executive prior employment tie to the 'computer programming, data processing, and other computer related services' industry are 6.55 times more likely to make an unrelated acquisition in that industry (p<.001).

Hypothesis 2 stated that the greater the time since the executive left the prior industry, the weaker the relationship between executive prior industry ties and acquisitions in that industry. In model 5 of Table 6, the main effect of tie age is not found to be statistically significant. In model 6 of Table 6, the coefficient of the interaction of the age of the executive prior employment tie and prior employment tie is negative and statistically significant (p<0.05) as a predictor of an unrelated acquisition in that industry.[4] The odds ratios for this relationship shows that an executive prior employment tie makes an unrelated acquisition in that industry 11.55 times, with each year since the executive left the prior employer reducing this by a factor of 0.91. This slow decay rate is depicted in Figure 4. At this rate of tie decay, a firm with an eight-year-old prior employment tie to an unrelated industry is 6 times more likely to acquire from that industry than a firm without the tie. Further, the increased likelihood of the prior employment tie isn't completely canceled out until approximately 26 years of tie age. Robustness testing found similar results. Therefore, Hypothesis 2 receives support.

Hypothesis 3 stated that the strength of the executive's relational ties to the prior industry at the time of exit will moderate the relationship between an executive prior

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[4] Note: As Executive Prior Employment Tie is binary, the main effect of the moderator drops out due to perfect multicolinearity with the interaction term.

employment tie to an unrelated industry and acquisitions in that industry such that the relationship will be stronger, the stronger the ties are at exit. In Model 7 of Table 6, the strength of the executive ties in the prior industry at exit was found to have a statistically significant (p<0.05) effect. However, it was not found to have a statistically significant moderation effect on the relationship between the executive prior employment ties and unrelated acquisitions.[5] The robustness testing also found this moderation not to be statistically significant. Therefore, Hypothesis 3 does not receive support.

Hypothesis 4 stated that the direction of the executive mobility moderates the relationship between executive's prior industry tie and acquisitions in that prior industry such that the relationship is stronger for ties created by an executive joining the firm (than by one exiting the firm). This analysis was done by subsampling the executive prior employment ties. Only sent ties were included in model 9 and only received ties were included in model 10. Table 6 shows that a firm with a sent executive prior employment tie to an unrelated industry is 1.71 times more likely to acquire a target firm in that industry, but this effect is only marginally statistically significant (p<0.1). Meanwhile, Table 6 shows that a firm with a received executive prior employment tie to an unrelated industry is 3.66 times more likely to acquire a target firm in that industry (p<0.001). However, the difference between the coefficients was not found to be statistically significant (although it approached marginal significance at p=0.11), thus Hypothesis 4 fails to find support. These results do provide an interesting insight into the

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[5] Note: As Executive Prior Employment Tie is binary, the main effect of the moderator drops out due to perfect multicolinearity with the interaction term.

relative influence of underlying factors of the two tie directions. I will discuss this further in the next section.

Robustness & Post Hoc Analysis

For robustness, I also ran asclogit with several other sample cutoff points to ensure I was not overfitting the model in my desire to include as many industries as possible. These cutoffs included industries with more than 5 acquisition targets across the sample period (8 industries), more than 8 acquisition targets (7 industries) and more than 9 acquisition targets (6 industries). The results are included in the appendix as models R1-R6 Table 4 and are very similar, suggesting that the results are robust and the model is not over-fitted.

I also ran asclogit without the 'computer programming, data processing, and other computer related services' industry (SIC 737) to ensure that its large portion of the total unrelated acquisitions (68%) was not driving the results. The reduced sample size meant that the most industry choices I could test was 7 (industries with more than 5 acquisitions in the sample). I also again varied the cutoff point of the sample and ran the analysis with more than 8 acquisition targets (6 industries) and more than 9 acquisition targets (5 industries). Note that the industry totals are one less than the above analysis at the same cut off point due to the exclusion of SIC 737. The results are included in the appendix as models R7-R12 in Table 5 and are very similar to those above, suggesting that they are robust and the large number of unrelated acquisitions in a single industry is not biasing the results.

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For robustness, I also used Stata's logit (clustered by firm) which fits a logit model for a binary response by maximum likelihood; it models the probability of a positive outcome given a set of regressors. Logit is for data with a dependent variable that is nonzero, with nonmissing indicating a positive outcome and zero indicating a negative outcome (Stata, 2012). For this analysis I clustered by firm, which specifies that the standard errors allow for intragroup correlation, relaxing the usual requirement that the observations be independent. That is, the observations are independent across groups (clusters) but not necessarily within groups (Stata, 2012). Results are reported in Table 7 and are very similar to the xtlogit results, suggesting that they are robust.

As a post hoc analysis, I also used negative binomial regression to consider firm-years with multiple acquisitions in the subsample of the 'computer programming, data processing, and other computer related services' industry. Of the 149 firm-years with acquisition activity, 61 (41%) had multiple acquisitions. Almost half of those (28) represented two acquisitions with the maximum being four instances where a firm acquired ten targets in a single year. Stata's xtnbreg which fits random-effects or conditional fixed-effects overdispersion models, and population-averaged negative binomial models for a nonnegative count dependent variable. Note that the 'random' and 'fixed' effects of this analysis apply to the dispersion parameter distribution, not to the $x\beta$ term in the model (Stata, 2012). A Hausman test was still used to confirm that my use of random-effects was appropriate. Results appear in Table 8 and are similar to the above findings for the main effect of executive prior employment ties (model PH2). That is, executive prior employment ties are significant and have a larger coefficient than

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board interlocks. However, none of the moderators are significant with this analysis (models PH3-PH8). This is likely due to the difference in dependent variable: acquisition activity in a specific industry location, versus the amount of acquisition activity in a specific industry location. For instance, while an older (decayed) tie may pass less information about the industry to the focal firm and therefore reduce the tie's influence, a firm undertaking numerous acquisitions each year is likely more an indication of its size than its informational access. This supposition is at least hinted at with the increased significance of the firm size control, from generally being $p<.05$ in the xtlogit models to always being $p<.001$ in the xtnbreg models.

CHAPTER VI

SUMMARY & DISCUSSION

A great deal of research has sought to understand why firms make acquisitions. In fact, the review by Haleblian et al. (2009) summarized the recent findings across fourteen acquisition antecedents. Yet, despite all we have learned as a field about these antecedents, a meta-analysis across acquisition studies suggest there are still unidentified variables that may explain significant post acquisition performance variance (King et al., 2004). I proposed that some of this unexplained variance can be accounted for with a previously unconsidered type of inter-firm relational ties: executives' prior employment ties.

Social capital theory provided the theoretical framework for this study. First, inter-firm relational ties can serve as a conduit for information and knowledge transfer (Burt, 1992; Podolny, 2001). Second, socially distant ties are more likely to provide access to valuable, non-redundant information (Burt, 1992; Granovetter, 1973). As unrelated industries represent socially distant groups, unrelated acquisition activity provided an excellent context to test the influence of this previously unresearched type of inter-firm relational ties. I now turn to discussing the results of that testing and its implications.

Hypotheses & Implications

The first major empirical contribution of this study is showing that executives' prior relational ties –even potentially inactive ones– do influence current firm acquisition

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behavior. Testing across 6, 7, 8 and 11 unrelated industry choices, I consistently found that the presence of an executive prior employment tie to an unrelated industry made a firm three times as likely to engage in an acquisition in that industry. Further, specifically focusing on the most commonly selected unrelated industry, as well as removing it from the sample, both produced similar results. Additionally, this robust relationship between prior employment and current acquisitions was found while controlling for the influence of the often studied inter-firm relational ties of board interlocks (Haunschild & Beckman, 1998).

The implications of this are far reaching, as scholars have largely viewed such ties as irrelevant (Burt 1992, 2002; Coleman 1990; Levin et al., 2011). Instead of irrelevance, executive prior employment ties had a stronger influence on unrelated industry chosen for an acquisition than do board interlocks. Theoretically this makes sense, as the strength of relational ties is due in part to the frequency of interactions and amount of time spent interacting (Granovetter, 1973). So executives' ties to co-workers, where relational ties formed are during daily interactions, are likely much stronger than those ties formed with co-directors during intermittent board meetings.

While this study only tested one strategic outcome, it certainly raises the question of whether executive prior employment ties have a stronger influence than board interlocks with other strategic outcomes. To date, the extant literature has found board interlocks to be predictive of many outcomes including strategic alliance partner selection (Beckman et al., 2004), emerging market entry (Tuschke, Sanders, & Hernandez, 2014) and the adoption of strategic initiatives (Connelly et al., 2011) just to

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name a few. If the relative strength of these differing tie types holds in other areas, then executive prior employment ties will have far-reaching predictive power.

Conversely, the fact that board interlock ties explained much less variance when examined in conjunction with executive prior employment ties raises important questions about the overall relational network. An important consideration in network analysis is including enough ties to adequately capture the relational network structure (Burt, 2007; Merluzzi & Burt, 2013). If not, what appears to be a structural hole may actually be full ties that are being ignored or otherwise excluded by researchers (Levin et al., 2011). See Figure 3 (Adapted from Figure 1 in Burt, 2007) for a visual representation of this. The fact that board interlocks often lost significance once the executive prior ties were included in the model suggests that network was not adequately captured by the interlocks alone. This study clearly shows that considering a relational network of only board interlocks is likely to overstate their influence on unrelated acquisition industry selection. This raises the possibility that the influence of board interlocks could be overstated in other areas as well without inclusion of the executives' prior employment ties. These implications mean that prior employment ties should offer fertile ground for future research.

The second major empirical contribution of this study is determining the decay rate for executives' prior employment ties. While a few recent findings suggest that relational tie decay may be slow (Cohen et al., 2008; Levin et al., 2011), to my knowledge I am the first to empirically establish a specific rate of decay. In my analysis, I found the increased likelihood of an unrelated acquisition in a specific industry from an

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executive's prior employment tie is reduced to zero by approximately 26 years of tie decay.

This finding that relational ties decay very slowly also represents a major theoretical contribution to the social capital literature. Prior studies had suggested that inactive ties are accessible for information for longer than three years (e.g., Levin et al., 2011), however, the ability to reconnect prior ties goes far beyond this and in fact spans decades. This slow decay rate is especially important for strategic management research considering that in 2007 the average tenure was 6.8 years for CEOs (Patel & Cooper, 2014) and just 3.2 years for other top executives (ExecNet, 2009). These short tenures coupled with the long lasting influence of prior employment ties suggest that a firm's strategy will likely be influence by the executive team's prior employment.

This longevity of prior ties further underscores the above discussion regarding including enough ties to adequately capture the relational network structure (Burt, 2007; Merluzzi & Burt, 2013). With the possibility of decades of influence, researchers may need to consider an executive's entire employment history.

Further, the influence of prior employment ties raises the possibility of the continued influence of other tie types that are no longer current (i.e., are now prior). For instance, management scholars to date have only considered ties to other firms through current board interlocks. This study suggests that such ties could transfer knowledge even after the interlock is 'broken' by the executive leaving the nonfocal firm's board. However, this effect is likely weaker and shorter-lived than that found with executive prior employment ties. As stated earlier, there are less frequent interactions at periodic

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board meetings than the daily interactions typical of employment. Further, there are also fewer individuals to interact with in a board than in a firm. Nonetheless, while this effect is likely smaller and shorter-lived than prior employment, it is likely still influential on strategic outcomes for at least a few years and therefore should be examined in future research.

This study did not find the expected moderating effect for the strength of the relational ties at the time of executive exit from the industry. There are a few possible explanations for this. First, it is possible that the majority of industry transplants were in the non-focal unrelated industry for long enough to reach a minimum threshold of strength required to maintain ties to co-workers for long periods of time. This would produce inadequate variance required to find an effect. The fact that a main effect of executive prior employment was found with a sample mean duration at the non-focal firms of only 2.3 years, suggests that the relational bonds from shared employment do strengthen quite rapidly. And such a low mean further suggests that the problem could be one of inadequate variance. If this is the root of the problem, it may persist with samples from other industries as the survey reported average executive tenure of 3.2 years (ExecNet, 2009) suggests my sample is not far off from the norm.

It is also possible that the number of years spent in the industry in question is too a coarse measure for the strength of the relational ties formed there. While the strength of relational ties tends to increase with time (Granovetter, 1973), differences in leadership style and personality may cause executives' tie strengths to increase at varying rates. Further, differences in corporate culture could impact relational strength as

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well. For instance, while the trust crucial for greater information exchange would generally increase over time at a collegial workplace it may not at a firm with a cutthroat culture.

It is important to point out that the main effect of tie strength was statistically significant with each year spent in the prior industry increasing the likelihood of an acquisition in that industry by 9%.[6] The fact that this did not moderate the prior employment ties suggest that this variable may be capturing a human capital influence instead of a social capital one. As discussed previously, while human capital does not typically transfer well between unrelated industries as the firm-specific and industry-specific knowledge, skills and abilities don't translate to the new industry (Castanias & Helfat, 2001). In the context of selecting acquisition targets in one's former industry, the transplant executive's human capital can prove incredibly valuable to the focal firm.

The next empirical contribution was the support for the bidirectionality of social ties information transfer (Corredoira & Rosenkopf, 2010) across these executive prior employment ties. That is, knowledge flows both ways between the prior firm and the current firm. Because of this, the focal firm can gain information about another industry from both their current executives who were once employed in that non-focal industry (received tie), as well as, prior executives who are currently employed in that non-focal industry (sent tie).

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[6] While potentially coincidental, the similarity between the strengthening rate and decay rate is worth noting.

What was surprising was the similarity of the influence of the sent and received ties. While the informational benefit of sent and received executive prior employment ties is likely similar, executives employed at the focal firm (received tie) also possess non-focal industry specific human capital and executive authority at the focal firm. The transplanted executive's personal knowledge from experience in the prior industry should assist the firm in analyzing and selecting acquisition targets in that industry. Further, an executive employed at the focal firm should at least have a voice (or more in the case of CEOs) in the focal firm's acquisition activity –certainly more so than an executive that no longer works at the focal firm. I expected those two additional factors to produce a stronger influence than the informational access alone, and therefore predicted received ties to be a stronger influence on a firm's acquisition activity than sent ties.

However, while the coefficients were different in the predicted direction, the amount of difference was not found to be statistically significant. This finding has important implications. First, the influence of executive human capital brought over from the previous industry is either very small or the informational benefit of an executive exiting to another industry can serve as a comparable substitute to the recruited executive's industry knowledge. Second, the influence of executive authority at the focal firm is either very small or is mitigated by the fact that sent ties are linked back to executive's with authority at the focal firm.

This study adds to the diversification literature by considering the industry location of the unrelated acquisition target. Diversification research has found that

unrelated acquisitions can used to balance the cyclical effects of revenue between industries (Amihud & Lev, 1981; Bergh, 1997). Further, unrelated acquisitions can lower the cost of capital (Chatterjee, 1986), or to create other financial gains (Bergh, 1997; Seth, 1990). However, while diversification can help explain firms' engaging in unrelated instead of related acquisitions, the research has rarely considered what influences a firm to choose one unrelated industry over another. This study expands our understanding of other factors in the selection of a specific unrelated industry location for acquisition activity.

I contribute to literature on prior employment into the C-suite by testing it at the executive level. Extant research has primarily focused on the prior employment of non-executives such as inventors (Agrawal et al., 2006; Corredoira & Rosenkopf, 2010) or professional service providers, such as accountants and lawyers, (Somaya et al., 2008; Wezel et al., 2006).

This study also offers important practical implications. It shows that executives' prior employment can have a significant effect on the strategic decisions that they make today. Research has shown that an executive's career is continuous in nature (Cheramie, Sturman, & Walsh, 2007) from the individual's perspective, but my findings expand this to the organizational level. Nothing demonstrates this potential for path dependence better than twenty-year-old ties to an unrelated industry influencing major firm decisions.

Managerial knowledge of these influences can help executives make better acquisition decisions. While the acquisition performance implications of executive

access to valuable, non-redundant unrelated industry information has yet to be tested

empirically, the reduction in information asymmetry should improve performance. Due

to the relatively high cost of acquisition premiums compared to executive salaries, it

could be cost-effective for firms to recruit an executive from an industry before engaging

in acquisition activity there.

Managerial knowledge of these influences can help executives predict

competitors' future acquisitions. Such competitive acumen (Tsai, Su, & Chen, 2011) can

give firms a competitive advantage by knowing what markets competitors are likely to

enter in the future. This competitive intelligence is also very easy to gather as executive

employment history is usually readily available online.

A practical implication for researchers is the fact that the data are relatively easy

to collect. Unlike most relational tie data that must be collected through surveys and

similar to board appointment data, employment history can often be collected from

secondary sources. The popularity of board interlock studies may be due at least in part

to relatively easier data collection, as surveys of corporate elites are not easily obtained.

This readily available, additional relational tie type will allow scholars to consider many

future research questions.

Finally, there is an ongoing debate in the literature regarding the causality of

social capital. The cross-sectional nature of many social capital studies has left questions

as to the origin of the observed effects being the network ties or the actor. As Kwon and

Adler (2014: 419) explain, "if a cross-sectional study detected a tendency of influential

managers to be more central in their networks, [is this] evidence that influential

individuals had more ties or that those with more ties became influential"? Specific to interlocks, Martin et al. (2015: 237) note "Earlier cross-sectional studies of this relationship are open to the criticisms of reverse causality (i.e., better performing firms may have more opportunities for creating interlocks)." Portes and Vickstrom's (2011: 465) recent review reexamined some of the cross-sectional evidence for the power of social capital from a highly citied work on the subject (i.e., Putnam, 2000) and found that "without including a time-sensitive measure, [the prior] analysis does not allow us to disentangle these effects and truly determine whether or not social capital is causing the positive effects observed" and "because the [social capital] index was measured contemporaneously with the dependent variable; it is not at all clear which comes first." They further conclude: "Empirically, many of the alleged benefits of communitarian social capital turn out to be correlates, rather than consequences" (Portes & Vickstrom, 2011: 476). This study addresses this issue through the use of a primary variable of interest with an inherent lag built into it. By definition, the influence of an executive's prior employment on current acquisition activity contains this vital time lag. On average, this time difference was a little over three years. In some instances, however, it was more than twenty.

Limitations & Future Research

As with any study, this dissertation has limitations that should be considered in assessing the applicability and generalizability of the results. First, this study only considers the focal industry of 'computers and office equipment'. While this industry is likely representative of other high tech manufacturing industries, it is possible that it is

not generalizable to other types of industries. Future studies should examine other industry areas such as retail, financial or service industries ensure these results are consistent in other contexts.

The focal firms in this study were limited to public companies in the United States. This creates a sample bias towards larger firms and against foreign-based ones. The former is more than likely offset by the fact that the firm outcome of concern was acquisitions, as acquiring firms tend to be larger in size. This focus on domestic firms may influence the results due to the U.S. regulations on acquisitions such as anti-trust laws. Future research should explore potential differences in the influence of executive prior employment ties and unrelated acquisitions amongst firms headquartered in other countries.

Thankfully, the limitation of only public, U.S. firms is not shared by the executive prior employment data. BoardEx collects all available employment history of the current executives for each firm-year even if those firms are outside the firms they are focused on collecting data. This allows for prior employment ties to 16,279 public firms and 194,360 private firms – including foreign firms. One potential limitation of these data for this study is that it does not capture the sent ties of executives that left the firm prior to BoardEx's data collection (2002 for most firms). This left censoring of the executive prior employment sent ties could further account for its weaker influence compared to received ties.

While this study established that executive prior employment ties can serve as a conduit for knowledge and information flow from unrelated industries, it does not

address the absorptive capacity of the focal firm. That is, the ability of the tied-to executive(s) at the focal firm to absorb and process the information flowing through the prior employment tie and turn it into the useful knowledge for the firm. As firms' absorptive capacity can vary (Cohen & Levinthal, 1990), this aspect of this inter-industry knowledge flow should be investigated in future research.

While beyond the scope of this study, it is likely that some firms actively recruit executives from other industries prior to entering that market. Such recruitment is likely for the purpose of gaining access to the executive's human and social capital in that other industry to assist in acquisitions there, and it would not necessarily change the findings of this study. However, future research could explore how often such recruitment occurs and if active recruitment from the non-focal industry increases the post-acquisition performance from those industries.

The current measure of industry relatedness is coarse-grained. Current research classifies an acquisition as unrelated if the bidder and target have different SIC codes (Fan & Goyal, 2006). This is commonly done with 4 digit differences in SIC code considered a related industry and 3 digit differences considered an unrelated industry. (Lim, Das, & Das, 2009). This measure could be improved in future research.

Following prior research (Fan & Goyal, 2006; Lin, 2014), a relatedness index (for industries) can be constructed using the U.S. Bureau of Economic Analysis inter-industry commodity IO flow tables. This allows for the relatedness of two industries to be assessed. The use of such an index would allow for the categorization of various industries and potentially allow for even more granularity than a simple classification of

'related' or 'unrelated'. Once constructed, this relatedness index could be used to further test the information value of prior employment ties. Social capital theory would suggest that ties to less related industries are more likely to provide non-redundant (and therefore valuable) information to the focal firm (Burt, 1992).

As suggested in the above discussion, future research should consider other firm level outcomes that could be influenced by executive relational ties. Strategic alliances are often a precursor to acquisitions and therefore present an obvious next step for scholars. But, many other dependent variables could be considered including the often studied firm performance, or even the formation of new board interlocks.

Lastly, this study considered individual ties and tie level attributes. However, the data are available to analyze the network attributes of executive prior employment ties. This could be done separately or together with board interlock ties in a single relational network. Once constructed, attributes such as a firm's centrality or its number of structural holes could be assessed across many firm level outcomes including firm performance and acquisition activity.

Conclusion

This research builds on and extends social capital theory and our knowledge of acquisition antecedents by considering the relational ties from executives' prior employment across industries. I find that such a relational tie to an unrelated industry increases the likelihood of acquiring an unrelated target in that same industry. The age of the prior employment tie decreases this effect, but at such a rate that suggests relational tie decay is quite slow. The amount of time spent building ties with co-workers in the

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unrelated industry has no impact on the effect, suggesting that most prior employment ties are strong enough for knowledge transfer. I also found the surprising result that sent executive prior employment ties possess comparable influence to their received counterparts, meaning that an executive exiting to another industry can be just as influential on a firm's acquisition activity in that industry as the firm recruiting an executive from that industry. Overall, the effect of executive prior employment ties appears very robust and has important implications for future social capital and business diversification research.

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Figure 1 - Model
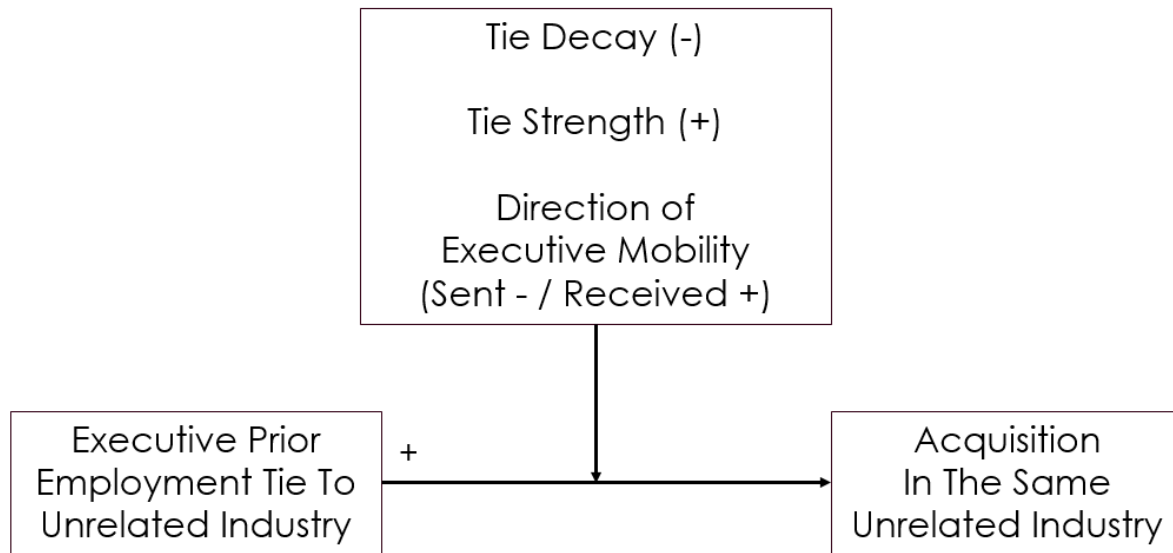
Figure 2 – Figure 1 in Lester, Hillman, Zardkoohi & Cannella, 2008

FIGURE 1
Former Government Officials Serving as Outside Directors
Adjusted for Chronological Age[a]
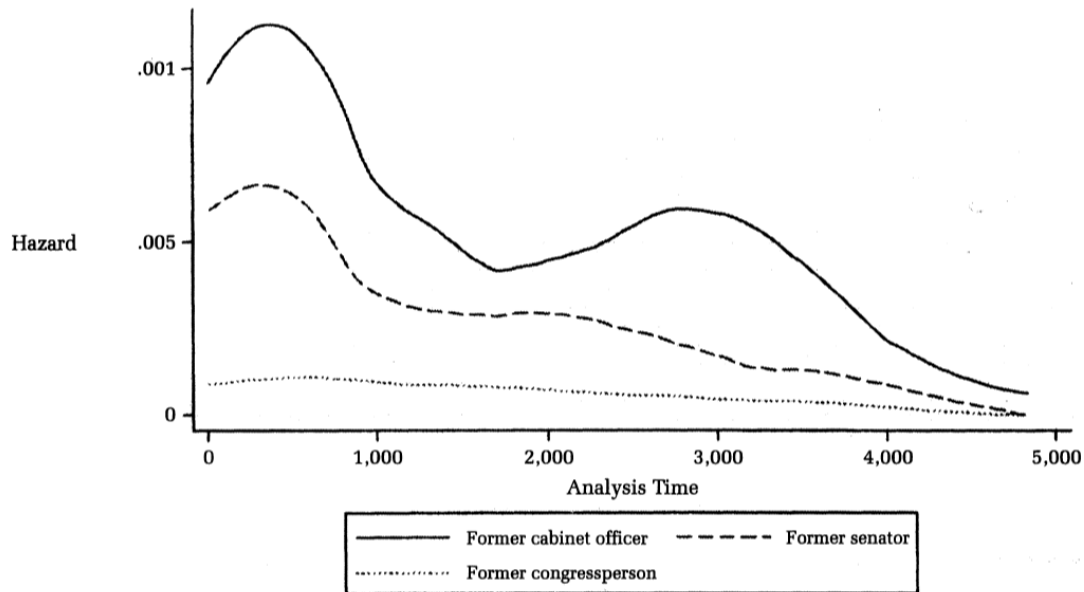
[a] "Hazard" refers to the likelihood that a sample individual will join a board on the given day. We computed this estimate of the hazard function by calculating the hazard contributions at each observed board joining and fitting a density curve to them. "Analysis Time" is the number of days since an official left office; 1,000 days is approximately 2.7 years.

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Figure 3 – Adapted from Figure 1 in Burt, 2007
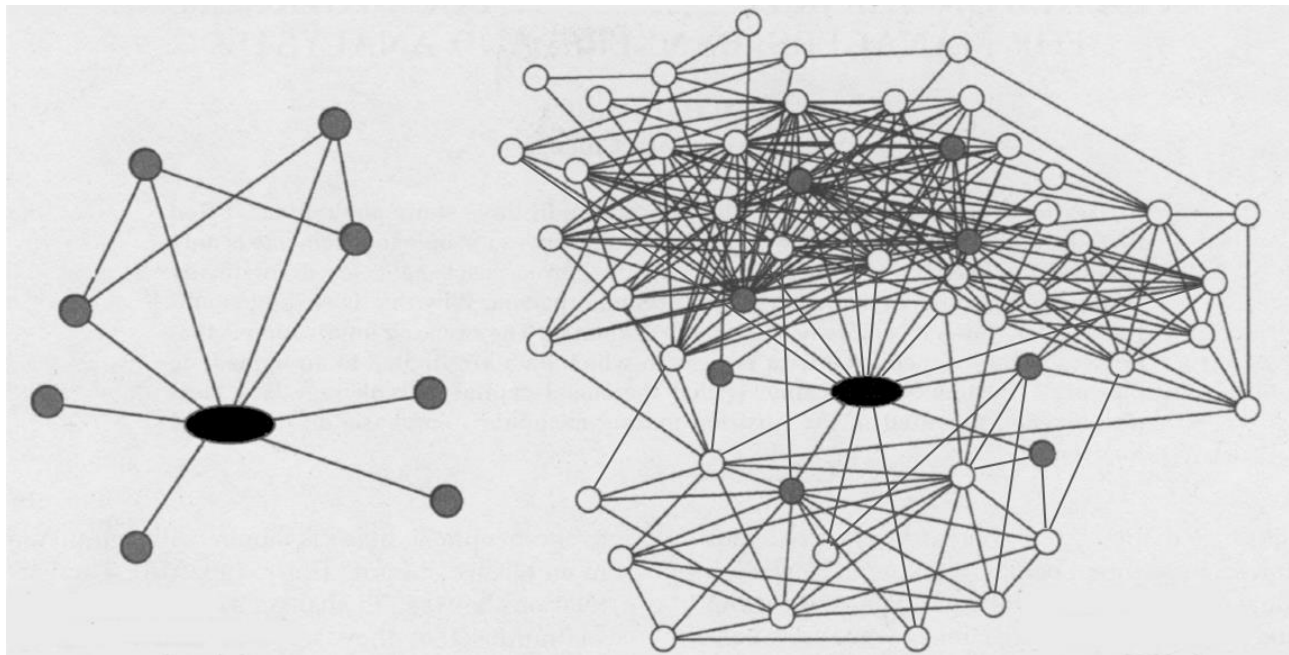
Figure 4 – Odds Ratio Decay Over Time
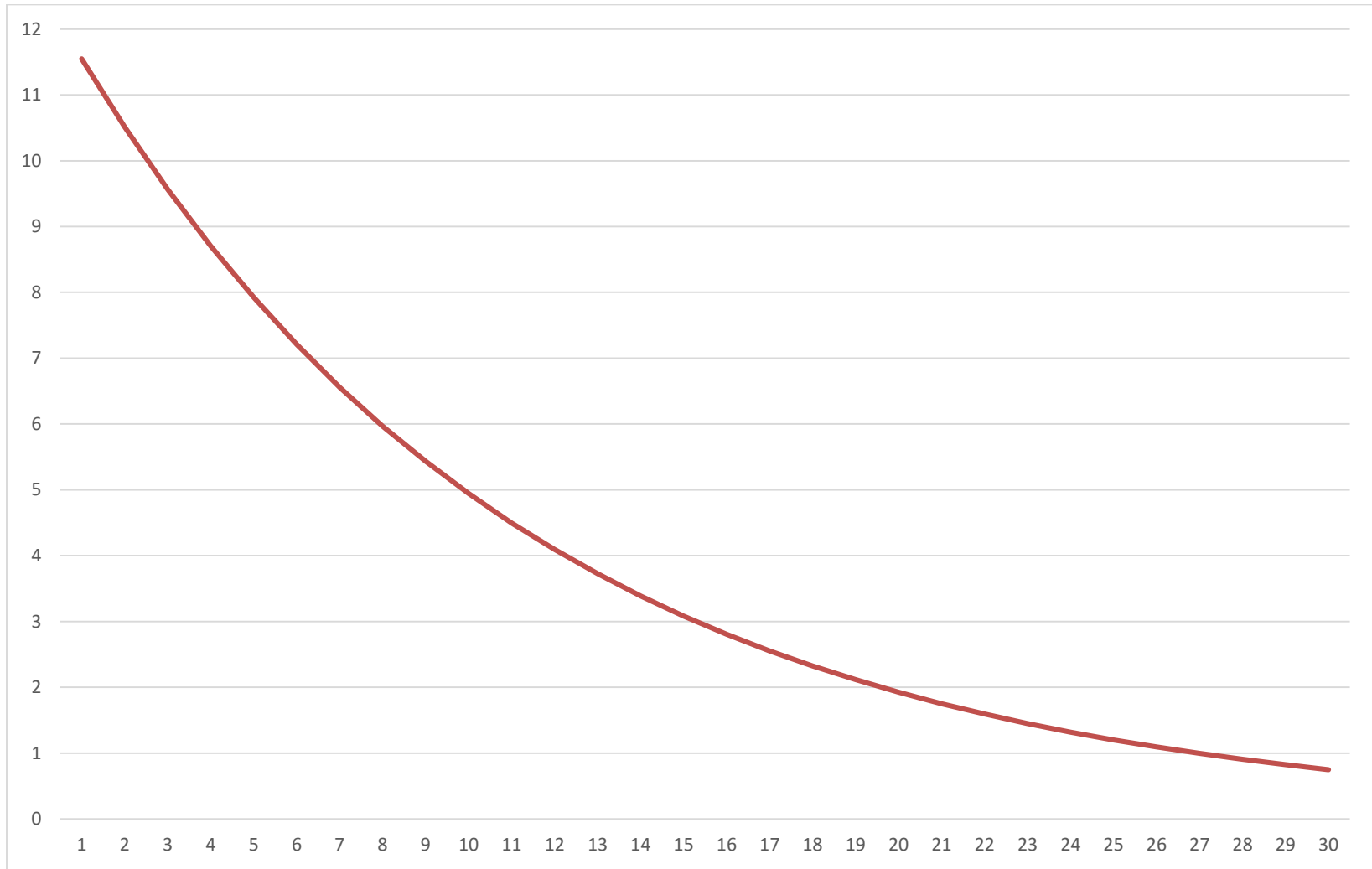
Table 1 – Correlation Table & Summary Statistics (H1-3 models)

	Mean	S.D.	Min	Max	1	2	3	4	5	6	7	8	9	10	11
1 Unrelated Acquisition	0.09	0.29	0	1											
2 Executive Prior Employment Tie	0.52	0.5	0	1	0.22										
3 Executive Prior Employment Tie Age	3.28	4.19	0	23	0.13	0.76									
4 Executive Prior Employment Tie Strength	2.33	3.04	0	20	0.16	0.74	0.65								
5 Board Interlock	0.21	0.4	0	1	0.19	0.35	0.17	0.25							
6 Recent Unrelated Acquisition Experience	0.94	3.15	0	38	0.60	0.16	0.09	0.10	0.09						
7 New CEO	0.09	0.28	0	1	0.02	0.07	0.06	0.06	0.01	0.02					
8 Board Tenure	8.74	3.4	2	14	-0.01	-0.04	-0.20	-0.08	0.13	-0.01	-0.14				
9 Board Size	4.58	2.39	1	16	0.07	0.19	0.06	0.15	0.29	0.06	0.10	0.26			
10 Firm Size	5.36	2.48	0	12.2	0.37	0.43	0.30	0.28	0.22	0.41	0.03	-0.09	0.29		
11 Firm Leverage	0.95	8.24	0.01	261.3	-0.02	-0.06	-0.04	-0.04	-0.04	0.00	-0.01	-0.01	-0.01	-0.12	
12 Firm Slack	3.05	4.18	0	98	-0.06	-0.06	-0.01	-0.09	-0.01	-0.05	-0.02	0.02	-0.05	-0.10	-0.05

VIF < 3

Table 2 – Correlation Table & Summary Statistics (H4 models)

	Mean	S.D.	Min	Max	1	2	3	4	5	6	7	8	9	10
Unrelated Acquisition	0.09	0.29	0	1										
Sent Executive Prior Employment Tie	0.30	0.46	0	1	0.24									
Received Executive Prior Employment Tie	0.40	0.49	0	1	0.26	0.27								
Board Interlock	0.21	0.4	0	1	0.19	0.25	0.39							
Recent Unrelated Acquisition Experience	0.94	3.15	0	38	0.60	0.23	0.21	0.09						
New CEO	0.09	0.28	0	1	0.02	0.01	0.11	0.01	0.02					
Board Tenure	8.74	3.4	2	14	-0.01	0.00	-0.07	0.13	-0.01	-0.14				
Board Size	4.58	2.39	1	16	0.07	0.23	0.18	0.29	0.06	0.10	0.26			
Firm Size	5.36	2.48	0	12.24	0.37	0.49	0.40	0.22	0.41	0.03	-0.09	0.29		
Firm Leverage	0.95	8.24	0.01	261.3	-0.02	-0.03	-0.06	-0.04	0.00	-0.01	-0.01	-0.01	-0.12	
Firm Slack	3.05	4.18	0	98	-0.06	-0.06	-0.08	-0.01	-0.05	-0.02	0.02	-0.05	-0.10	-0.05

VIF < 2

Table 3 – Asclogit Results (H1)

		H1
Unrelated Acquisition - Odds Ratios	1	2
Matching Executive Prior Employment Tie		**3.10****
Matching Board Interlock	2.36*	1.92+
Unrelated Acquisition Industry "Choices"	11	11
Number of Industry Acquisitions Cut Off	>3	>3
Acquisitions	399	399
% of Total Acquisitions	83%	83%
Controlling For:		
Recent Unrelated Acquisition Experience		
New CEO		
Board Size		
Ave Board Tenure		
Firm Size		
Firm Profitability		
Firm Leverage		
*** p<0.001, ** p<0.01, * p<0.05, + p<0.1		

Table 4 – Asclogit Robustness: Other Industry Cut Off Points

Unrelated Acquisition - Odds Ratios	1	2	R1	R2	R3	R4	R5	R6
Matching Executive Prior Employment Tie		3.10**		3.17**		3.24**		2.98**
Matching Board Interlock	2.36*	1.92+	2.27*	1.88	2.08+	1.71	1.98+	1.67
Unrelated Acquisition Industry "Choices"	11	11	8	8	7	7	6	6
Number of Industry Acquisitions Cut Off	>3	>3	>5	>5	>8	>8	>9	>9
Acquisitions	399	399	387	387	381	381	372	372
% of Total Acquisitions	83%	83%	81%	81%	80%	80%	78%	78%
Controlling For:								
Recent Unrelated Acquisition Experience								
New CEO								
Board Size								
Ave Board Tenure								
Firm Size								
Firm Profitability								
Firm Leverage								
*** p<0.001, ** p<0.01, * p<0.05, + p<0.1								
Note: Models 1 & 2 from Table 3 are duplicated in this table for easy comparison to the other models								

Table 5 – Asclogit Robustness: Excluding SIC 737

Unrelated Acquisition - Odds Ratios	1	2	R7	R8	R9	R10	R11	R12
Matching Executive Prior Employment Tie		3.10**		3.17**		3.25**		2.98**
Matching Board Interlock	2.36*	1.92+	2.27*	1.87	2.08+	1.71	1.98+	1.67
Unrelated Acquisition Industry "Choices"	11	11	7	7	6	6	5	5
Number of Industry Acquisitions Cut Off	>3	>3	>5	>5	>8	>8	>9	>9
Acquisitions	399	399	70	70	64	64	55	55
% of Total Acquisitions	83%	83%	15%	15%	14%	14%	12%	12%
Controlling For:								
Recent Unrelated Acquisition Experience								
New CEO								
Board Size								
Ave Board Tenure								
Firm Size								
Firm Profitability								
Firm Leverage								
*** p<0.001, ** p<0.01, * p<0.05, + p<0.1								
Note: Models 1 & 2 from Table 3 are duplicated in this table for easy comparison to the other models								

Table 6 – Xtlogit Results (H2-H4)

				H2		H3		H4	
Unrelated Acquisition - Odds Ratios	3	4	5	6	7	8	9	10
Executive Prior Employment Tie		6.55***		11.55***		6.66***		
Tie Age			1.02					
Executive Prior Employment Tie * Tie Age				0.91*				
Tie Strength					1.09*			
Executive Prior Employment Tie * Tie Strength						1.00		
Only Sent Executive Employment Tie							1.71+	
Only Received Executive Employment Tie								3.66***
Board Interlock	2.68***	1.82*	2.65***	1.66+	2.53***	1.82*	2.38**	1.95*
Recent Unrelated Acquisition Experience	1.92***	1.96***	1.91***	2.00***	1.91***	1.96***	1.90***	1.92***
New CEO	0.82	0.78	0.82	0.76	0.82	0.78	0.84	0.79
Board Tenure	1.08	1.08	1.08	1.06	1.07	1.08	1.06	1.12
Board Size	0.93	0.93	0.93	0.92	0.92	0.93	0.92	0.93
Firm Size	1.26**	1.16*	1.25**	1.17*	1.24**	1.16*	1.20*	1.19*
Firm Slack	0.97	0.97	0.96	0.98	0.98	0.97	0.97	0.98
Firm Leverage	0.80	0.84	0.79	0.90	0.83	0.84	0.73	0.90
Constant	0.01***	0.02**	0.01***	0.01**	0.01***	0.02**	0.01**	0.01**
Observations	1,155	1,155	1,155	1,155	1,155	1,155	1,155	1,155

*** $p<0.001$, ** $p<0.01$, * $p<0.05$, + $p<0.1$; Year dummies not shown

Note: As Executive Prior Employment Tie is binary, the main effect of the moderator drops out due to multicolinearity

Table 7 – Xtlogit Robustness: Clustered Logit Results

Unrelated Acquisition - Odds Ratios	R13	R14	R15	R16	R17	R18	R19	R20
Executive Prior Employment Tie		6.55***		11.55***		6.66***		
Tie Age			1.02					
Executive Prior Employment Tie * Tie Age				0.91*				
Tie Strength					1.09*			
Executive Prior Employment Tie * Tie Strength						1.00		
Only Sent Executive Employment Tie							1.71+	
Only Received Executive Employment Tie								3.66***
Board Interlock	2.68***	1.82*	2.65***	1.66+	2.53***	1.82*	2.38**	1.95*
Recent Unrelated Acquisition Experience	1.92***	1.96***	1.91***	2.00***	1.91***	1.96***	1.90***	1.92***
New CEO	0.82	0.78	0.82	0.76	0.82	0.78	0.84	0.79
Board Tenure	1.08	1.08	1.08	1.06	1.07	1.08	1.06	1.12
Board Size	0.93	0.93	0.93	0.92	0.92	0.93	0.92	0.93
Firm Size	1.26**	1.16*	1.25**	1.17*	1.24**	1.16*	1.20*	1.19*
Firm Slack	0.97	0.97	0.96	0.98	0.98	0.97	0.97	0.98
Firm Leverage	0.80	0.84	0.79	0.90	0.83	0.84	0.73	0.90
Constant	0.01***	0.02**	0.01***	0.01**	0.01***	0.02**	0.01**	0.01**
Observations	1,155	1,155	1,155	1,155	1,155	1,155	1,155	1,155

*** $p<0.001$, ** $p<0.01$, * $p<0.05$, + $p<0.1$; Year dummies not shown

Note: As Executive Prior Employment Tie is binary, the main effect of the moderator drops out due to multicolinearity

Table 8 – Post Hoc: Xtnbreg Results

Unrelated Acquisitions (Count)	PH1	PH2	PH3	PH4	PH5	PH6	PH7	PH8
Executive Prior Employment Tie		0.87*		1.13**		0.96*		
Tie Age			-0.00					
Executive Prior Employment Tie * Tie Age				-0.05				
Tie Strength					0.03			
Executive Prior Employment Tie * Tie Strength						-0.02		
Only Sent Executive Employment Tie							0.37	
Only Received Executive Employment Tie								0.38
Board Interlock	0.62*	0.55*	0.62*	0.51*	0.61*	0.54*	0.58*	0.59*
Recent Unrelated Acquisition Experience	0.10***	0.10***	0.10***	0.10***	0.10***	0.10***	0.10***	0.10***
New CEO	-0.53*	-0.57*	-0.53*	-0.57*	-0.54*	-0.57*	-0.53*	-0.56*
Board Tenure	0.05	0.01	0.05	0.00	0.04	0.01	0.04	0.04
Board Size	-0.11*	-0.10*	-0.11*	-0.10*	-0.11*	-0.10+	-0.11*	-0.11*
Firm Size	0.43***	0.38***	0.43***	0.39***	0.43***	0.38***	0.39***	0.41***
Firm Slack	-0.07	-0.05	-0.07	-0.04	-0.06	-0.05	-0.06	-0.05
Firm Leverage	-0.39	-0.35	-0.39	-0.31	-0.36	-0.36	-0.40	-0.29
Constant	-2.02+	-2.07*	-2.02+	-2.10*	-2.18*	-2.01*	-1.72	-2.25*
Observations	1,155	1,155	1,155	1,155	1,155	1,155	1,155	1,155

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1; Year dummies not shown

Note: As Executive Prior Employment Tie is binary, the main effect of the moderator drops out due to multicolinearity