

LOSING TOUCH: BALANCING COHESION & EFFICIENCY DURING MANAGEMENT TRANSITIONS

This study concerns contingencies in losing ties. Our setting is three professional service firms where we examine changes in relations of recently promoted service professionals (auditors, consultants, and lawyers). Our focus is on tie loss. We take a comprehensive look at driving factors, examining qualities of the alter, the relationship, and social structure. Each contributes to predicating change, but revealing an overarching tendency for balance between cohesion and efficiency logics. Newly promoted professionals will avoid losing high-status contacts (H1), but they don't shed contacts of any rank who bring multiplex resources (H2). They are less likely to lose contacts they trust (H3, H4) and especially embedded ties (H5), but they also pursue efficiency, shedding the most redundant relations (H6). Finally, we parse out the role of different types of trust on structurally redundant contacts by showing that a high level of cognitive trust in one's extant network facilitates the letting go of redundant ties (H7) while a high level of emotional trust hinders the shedding of ties (H8).

INTRODUCTION AND BACKGROUND

Professionals face important transition points in their careers. Substantial transitions are particularly those that involve promotions to leadership positions or increased management responsibility, for example moving from a consultant or analyst role to overseeing a collection of related tasks and project teams. Our concern in this paper is with what happens to the network of relations of service professionals during a promotion to greater management responsibility. It is well established that managers must develop and rely on social networks in order to do their jobs—for resources, insights, and political support (Chua, Ingram, & Morris, 2008). Newly promoted professionals entering management ranks should be especially concerned with their network development. This is because they grow in responsibility for coordinated action, becoming lynchpins in the firm, who must acquire strategic awareness, develop client relations, locate resources efficiently, and ensure the completeness of the project work. Management promotions, then, are an ideal context to study network dynamics. In this paper we examine the changes newly promoted professionals in three service firms experience to their network relations over the course of their first 1½ years in the job. Because the fundamental component of their networks are their contacts, the most essential changes they will experience is the loss of existing contacts (tie loss) and the gain of new contacts (tie gain). Here, we focus on tie loss.

Tie loss is a fact of life. All actors experience some amount of change in the composition of their key contacts if the time horizon is long enough—inevitably, some contacts will fade away from key social circles. Tie decay is especially relevant for actors in professional service organizations, where contacts are essential work resources and each move up the career ladder may require reliance on a changing set of players. Service professionals face perhaps their biggest career shift when they move from individual contributors to project managers, their most important test on the road to partnership. During this transition they face expanded responsibilities and heavy competition for their time, with one or more teams to manage, client engagements, new technical challenges, reporting to multiple partners, and so on. They are therefore likely to lose touch with contacts made while they were individual contributors. Our general research question is “What factors predict which contacts will be lost during management transitions?”

Losing touch with contacts raises important questions about drivers and mechanisms. Two major logics are likely to be in play, and these form umbrella categories for our study which will capture specific mechanisms and constructs. One general logic to losing touch is certainly cohesion. This logic is better understood if we consider the opposite of losing touch—keeping touch—and suggests that we keep in contact with those with whom we are particularly well bonded. This logic provides a euphemistic spin to the social discomfort of an individual considering with which of her contacts should she spend less (or no) time. It emphasizes the positive pull of those already in our midst—we lose touch with those who are simply less bonded with ourselves, a sort of “non-decision,” as we are pulled by strong interpersonal forces, while others fade away, rather than being repelled. In a way, it is the more socially accepted logic to the uncomfortable question of losing touch with people we know and are important to us. But it is not the only logic, and it competes with at least one other major logic: efficiency. Actors may

simply prefer to retain more useful contacts, and in turn shed contacts who are redundant and/or relatively “useless.” The efficiency logic is cold and calculating—the core viewpoint is utilitarian and reduces contacts to “means” to personal ends (the cohesion logic is more likely to treat contacts as inherently meaningful “ends”). As a logic for decision making, it is likely to have lower social acceptance. But, because it is shielded from public scrutiny (these calculations are almost always private and not easy to discern directly), this makes the issue of social acceptance less acute, and so should enable the efficiency mechanism in network dynamics. That is, we expect that both cohesion and efficiency are viable logics for losing touch. Given that individuals may entertain both logics, we are trying to understand how these play out in explaining tie losses during management transitions. Can they coexist, or is one the more powerful logic? Does the power of the logic depend upon some contingency, for example is the efficiency logic more powerful when actors assess the qualities of specific individuals, but cohesion more powerful a force when structural factors are considered? Do these logics interact? These are the types of questions our study will consider, and our specific purpose is to examine how actors resolve these inherent tensions in losing touch.

There is still much to learn about how change takes place in individual social networks (Burt, 2000; Martin & Yeung, 2006). Burt (2000), reflecting on many years of social network research up until the new millennium, notes that “the small number of results on relationship decay is silent witness to the fact that we know very little about decay.” The same has been said about change in personal networks in general (Degenne & Lebeaux, 2005). Burt’s review of the literature to that point summarizes rare studies of network change in the general population, such as tie loss amongst college males over the course of an academic year (Feld, 1997), or tie stability in the first year of widowed life (Morgan, Neal, & Carder, 1997) (see also Reagan’s study of tie loss and cross-race relations, 1998).

Fortunately, social network dynamics has attracted more recent attention (Ahuja, Soda, & Zaheer, 2012). While it is still too early to categorize the developing work, there are roughly three research directions emerging. First, some studies are exploring the life cycle of ties (e.g., young versus old) and their impact on performance (Baum, McEvily, & Rowley, 2012; McEvily, Jaffee, & Tortoriello, 2012; Soda, Usai, & Zaheer, 2004). For example, this includes studies into whether ties which form early in some social context (“imprinting” ties) have particularly long-lasting benefits (McEvily, Jaffee, & Tortoriello, 2012). Second, network dynamics are also being studied by examining how entire structures evolve, such as the emergence of structural holes (Zaheer & Soda, 2009) or whether “small world” networks change over time (Gulati, Sytch, & Tatarynowicz, 2012). Finally, and our focus in this paper, network dynamics are explored by looking at tie formation and, in particular, decay (loss) (Burt, 2000; Burt, 2002; Casciaro & Lobo, 2008; Degenne & Lebeaux, 2005; Feld, 1997; Gulati & Gargiulo, 1999; Martin & Yeung, 2006; Maurer & Ebers, 2006; Reagans, 1998). However, much of the recent work on network dynamics takes teams or organizations as the unit of analysis, not individuals, let alone in the context of management transitions, an important moment during which we would expect disruption to networks and change.

Although tie loss enjoyed early attention, there has been relatively less attention to tie loss and its contingencies as network dynamic research has gained momentum. Burt’s (2000) anchoring work used longitudinal network data from an investment bank and found that that tie loss is rapid in the early going of new relationships (liability of newness) but is less likely to occur where relations are strong, contacts occupy the same division, are prominent in status, and embedded (connected indirectly to ego through many third parties). Tie embeddedness in particular would reappear as a common factor in related studies. For example, Burt (2002) in a follow-up study shows that bridge ties in particular (ties across structural holes) are prone to

rapid decay compared to non-bridge ties, and mostly because of the embeddedness of non-bridge ties (social embeddedness also plays a role in firm level studies of tie loss, see Broschak, 2004). Mixing loss and gain themes, Maurer and Ebers' (2006) qualitative study of new biotechnology firms and how they evolve their relations (or not) found that a lack of novel tie formation will lead to tie inertia. Finally, recent research of tie loss in non-organizational settings have also appeared, such as tie stability amongst 66 young French people transitioning to adult life (Degenne & Lebeaux, 2005), tie stability over 12 years of individuals belonging to urban communes (Martin & Yeung, 2006), and tie stability of Argentinean migrants to Spain (Lubbers et al., 2010). Although these concern non-organizational settings, these studies are consistent with the previous findings in that they point to the importance of strong ties and embeddedness for tie retention.

While the literature on tie loss is still emerging, the general impression across these studies is that three basic factors are at play in predicting network change: properties of the nodes (the focal actor and/or her contacts), properties of the relationship (dyad), and properties of the structure. However, these three factors are generally not examined simultaneously, or to a great depth (e.g., the nature of relationships). The literature lacks a comprehensive investigation of network loss. One goal of our study is to fill this particular void. Using longitudinal network data collected from three professional service firms we examine the tie losses experienced by 68 newly promoted professionals during the first 18 months in their new roles. Our study makes three contributions to existing knowledge of tie loss. First, our study explores qualities of the **node** (or contact) that are under-examined in studies to date: status and multiplexity. The status of contacts in hierarchical organizations should be important to the changes observed. Players, even though driven by pressures for efficiency in their social relations, may be very reluctant to lose high status contacts, such as partners in the firm. Nonetheless, newly promoted professionals

are likely to be efficiency minded and so also less likely to lose contacts who offer more types of exchanges, regardless of rank, a counter-balancing force to status considerations. That is, ties to contacts that offer multiplex exchanges (task-related, social, buy-in, innovation, etc.) should also be more stable. Yet we know little about how these qualities of the node contribute to tie loss/retention.

Second, our study is unique in that it examines an often implied but never measured component of the **relationship** (or dyad): trust levels. Trust is essential to productive exchange. It should also be essential to determining which contacts ego loses/retains, and yet it is not measured when predicting network change. Because trust is multifaceted, we measure both cognitive trust (reason-based trust, grounded in beliefs about alter's competence and reliability) and emotional trust (affect-based trust, grounded in personal liking). By separating the components of trust, we can see if one facet of trust matters more to change dynamics than the other. Moreover, by splitting trust into cognitive and emotional components we are able to assess both the efficiency logic (cognitive based trust) and cohesion logic (emotional based trust) on tie loss.

Third, our study competes the logics of efficiency and cohesion directly in asking how **structure** matters to tie loss. As we have seen, the leading view is that embeddedness matters. Specifically, contacts are less likely to be lost (more likely to be retained) where there are more third-parties joining the connection between ego and alter. The mechanism involves a greater sense of community and bonding, even meaning, when the contact is embedded in third-party ties back to ego. However, too little attention has been given to efficiency in how network changes play out. Efficiency competes with embeddedness, although they are not complete opposites. Embeddedness is about holding onto contacts both close and who are connected to other close third parties. Efficiency is about shedding contacts that simply overlap—are redundant—in the

local structure, precisely what busy, upwardly mobile managers may need to do as they take on greater responsibility. This is particularly relevant to examine in the presence of trust measures of relational quality. Embeddedness and trust are overlapping constructs. Embeddedness is in some ways a proxy for trust, to the extent that greater interconnectedness makes other-regarding behavior, and so trust, more likely (Coleman, 1990). But once dyad-specific trust is actually measured, the question is whether embeddedness retains any explanatory power, or does then some other structural mechanism, such as efficiency, better explain network changes? And even if highly embedded contacts are retained, do actors nonetheless also pursue some degree of efficiency? Our study examines and compares measures of both embeddedness (cohesion) and efficiency in estimating the influence of structural factors, in comparison with relational and node qualities.

Finally, our study contributes insights into tie loss by combining (interacting) trust and structural forces. In particular, we wonder if redundant contacts are more (or less) likely to be lost depending on the trust levels ego maintains with his/her broader network, effectively his/her “options” on the future. This strikes us an important angle: whether an actor is motivated to keep or lose a focal contact is likely to depend on that actor’s relationship with *extant contacts*, not just with what is happening with the focal contact. Our perspective is that actors’ views of redundant contacts are filtered by how much trust is created and stored in other, extant relationships. Actors may be more likely to lose redundant contacts where they have greater trust in what remains. Here we will explore the different ways cognitive and emotional trust may perform this filtering.

To sum, our study contributes a comprehensive model of tie loss, measuring aspects of the node, relation, and structure and competing their influence. It is also unique in exploring the influence of trust, and in competition with other possible mechanisms, such as structure. In turn, we are better able to examine the competing logics of “cohesion” and “efficiency” in tie loss

decisions. Below, we continue by developing our hypotheses concerning tie loss. Our theory follows the framework above, which is to explore properties of the node, relationship (trust), and structure, but considering cohesion versus efficiency logics within each. We deepen each of these elements by developing several hypotheses on tie loss within each category. Finally, we present our results and conclude with a discussion of the overall picture that these results provide of network change during management transitions.

LOSING TOUCH: KEY CONTINGENCIES IN TIE LOSS

Node Attributes: Rank and Multiplexity

High-ranking relations can be valuable because they provide political backing (Brass, 1984; Stevenson & Gilly, 1991). They can also be valuable where they provide access to new information, experience and advice, and connecting to higher ranking brokers has been found to have such spillover benefits for subordinate members (Galunic, Ertug, & Gargiulo, 2012; Sparrowe & Liden, 2005). Newly promoted managers may also benefit from accelerated development when tied to high-ranking contacts, for example newcomers' level of task mastery and role clarity were positively related to the average hierarchical level of their contacts (Morrison, 2002). In other words, there are good reasons for newly promoted managers to avoid losing high-ranking contacts, and these reasons are mostly to do with greater job efficiency. In the context of professional service firms, the rank of partner is especially prestigious and powerful. Partners effect pay and promotion decisions, and only partners make decisions on who else becomes partner. They also represent a status group to which upwardly mobile service professionals ultimately aspire. On the whole, they should be especially prized amongst contacts. Corroborating this view is the finding by Lazega & Van Duijn (1997) that law firm associates tend to seek advice especially from partners. In sum, we expect newly promoted service professionals to avoid losing partners as contacts in the first year of their new roles.

H1: Newly promoted service professionals are less likely to lose contacts who are partners in their respective professional service firms.

Multiplexity denotes the degree to which actors are linked by more than one type of relationship (Burt, 1983). Contacts who provide a plurality of inputs, such as task advice, career advice, political support, as well as friendship, offer an efficient way for busy professionals to manage their time—multiple exchange types come through a single source. The variety of exchanges experienced through one source may also mean more creative exchanges (i.e., greater likelihood of innovative “recombinations”) and multiplex ties have been linked with higher quality exchange (Sias & Cahill, 1998) including high trust and reliability (Ibarra, 1995; McAllister, 1995). Some have even argued that multiplex relationships are “safer” because they help reduce the likelihood of opportunistic behavior (Brass, Butterfield, & Skaggs, 1998). It follows that multiplex relations should be highly prized and less likely to decay. For example, in their theory paper on evolution and change of organizational networks, Kim, Oh and Swaminathan (2006) propose that the more multiplex an organization’s network ties, the less likely they are to change. Similarly, Zou, Ingram, & Higgins (2010) have suggested that a relationship that functions at multiple levels is less likely to suffer from decay. Nonetheless, there is little empirical evidence for these propositions. One exception is a qualitative and longitudinal study of entrepreneurial networks (Steier & Greenwood, 2000), where the authors find that ties that survive tend to become multiplex with time, and propose that this multidimensionality of exchange relationships is positively associated with tie robustness. Importantly, this study suggests that multiplex ties may offer not just greater efficiency but result in more cohesion—people may develop stronger bonds because of the greater scope of interactions with such (multiplex) contacts. We can control for these competing mechanisms within multiplexity by measuring separately interpersonal bonds (next), allowing us to parse-out components related to

efficiency and those related to cohesion. However, the general implication is that multiplex ties should survive longer than uni-dimensional ties. In the context of newly promoted service professionals trying to optimize their management time, alters that provide multiplex relations should be highly prized. Thus, we propose:

H2: Newly promoted service professionals are less likely to lose contacts who offer multiplex ties.

Overall, H1 and H2 are driven by efficiency logics. The focal actor retains ties which make him/her more resourceful (powerful) and efficient. We give efficiency arguments more coverage here because the preponderance of evidence on tie loss has focused on cohesion, and we now turn to mechanisms which consider interpersonal bonds and affinities.

Relational Attributes: Emotional and Cognitive Trust

Trust is a key ingredient for maintaining strong relations (Anderson & Weitz, 1989; Doney & Cannon, 1997; Ganesan, 1994), and yet, to our knowledge, trust has never been explicitly measured and examined as a predictor of tie decay. There have been proxies. In his longitudinal study of senior bankers' network decay, Burt (2000) finds that feelings of closeness are associated with slow decay. Trust goes further in capturing relational quality by examining the acceptance of vulnerability by the focal actor because they hold positive beliefs regarding a relation's motivations and behaviors. It is one of the most compelling ways of capturing relational quality and an important ingredient in relational dynamics (Dirks & Ferrin, 2001). Because trust is a multifaceted concept—we can trust people in fundamentally different ways—differentiation is useful. Research has converged on two forms of trust—emotion-based and cognition-based trust—and has found that each can lead to different outcomes (Chua, Ingram, & Morris, 2008; Levin & Cross, 2004; McAllister, 1995; Ng & Chua, 2006).

Emotion-based trust is essential about interpersonal bonding, whether the alter actively takes interest in the focal actor. It is the less “calculating” of the two forms of trust and is based predominantly on interpersonal experience, liking, or chemistry, leading some authors to claim that it is the longer-lasting form of trust (Lewis & Weigert, 1985). Similarly, our conceptualization of emotional trust concerns the quality of the interpersonal relationship, such as whether sharing of ideas and feelings is freely and easily done, whether the contact is an available and good listener, whether a sense of personal loss would be experienced if the contact disappeared, and so on.

Two network studies imply that high affect levels between contacts should be decisive in preventing tie decay. Martin & Yeung (2006) find that community members who have great affection (what they term as “love”) for one another at time 1 were more likely to persist over a twelve year period. And a recent network study found that emotional closeness between Argentinean immigrants in time 1 predicted relational persistence over a two year time span (Lubbers et al., 2010). High emotional trust relations are also valuable relations, as they promote more extensive knowledge transfer and creation (Hansen, 1999; Reagans & McEvily, 2003; Smith, Collins, & Clark, 2005), both of which are vital for professional service workers. Additionally, ties with high emotional trust have been shown to protect the focal actor from burn-out (Kahn et al., 2006) and to foster social integration and commitment (Morrison, 2002). However, high emotional trust relations have mostly value as “ends” (the relationship itself is of great value, as our measure will capture) rather than just a “means” to career progression. It follows that they should be more likely to be retained during career transitions.

H3: Newly promoted service professionals are less likely to lose contacts in whom they have established higher levels of emotional trust.

The role of cognitive trust is less straightforward. Cognitive-based trust involves estimations of alters' competence, dependability, and dedication (through interpersonal experience, but also partly by reputation). It has been found to be a key criterion for selecting workplace peers (Hinds et al., 2000), and it follows that such peers should be more likely to be retained. However, Casciaro & Lobo (2008) have found that in the presence of negative affect (disliking someone) even high evaluations of potential alters' competence do not result in new tie formation. Regarding tie loss, however, having already formed a tie, affect levels are likely to be at least neutral if not positive to some degree. Presumably alters then who are high on competence, dependability, and dedication will be prized and these relations more likely to be maintained. This is especially important for newly promoted service professionals, who in their more demanding management roles will be particularly eager to identify and maintain competent professionals, upon whom they now depend to successfully complete their mandates and minimize uncertainty over resource quality and timeliness (Hinds et al., 2000). We propose, then, that contacts who establish high cognitive-based trust are less likely to be lost during the transition to a new role in the careers of service professionals.

H4: Newly promoted service professionals are less likely to lose contacts in whom they have established higher levels of cognitive-based trust.

We will also examine interaction effects between emotion-based and cognitive-based ties. The idea is to see if Casciaro and Lobo's (2008) mechanism for new tie formation extends to situations of tie loss, such that relations high in cognitive-trust are not enough to avoid loss but must also be relatively high in emotion-based trust. By distinguishing emotional and cognitive trust, we are also afforded an opportunity to distinguish instrumental or efficient mechanisms (cognitive-based trust) from cohesion-based ones (central to emotional trust).

Structural Attributes: Embedded and Redundant Ties

Network embeddedness is about having close alters who themselves are connected and close (Coleman, 1990). Actors situated in embedded networks are more likely to share common experiences, meanings, and understandings (Uzzi, 1996), conditions that facilitate information-rich interactions and accelerated job or role learning (Morrison, 2002). Embedded networks have been shown to have a positive impact on team viability and performance (Aquino & Serva, 2005; Balkundi & Harrison, 2006), ego's involvement in innovation (Obstfeld, 2005) as well as citizenship behavior (Lee et al., 2004). In general, an actor in an embedded network is likely to have the strength of her/his tie with another contact "multiplied", that is made closer and stronger. For example, network embeddedness has been found to be positively associated with emotion-based trust (Burger & Buskens, 2009; Chua, Ingram, & Morris, 2008). This raises the question whether, once controlling for emotion-based trust, there will be an independent effect of embeddedness on tie loss, something our analysis will allow us to parse-out.

Our approach to embeddedness follows the existing literature on tie decay, which is to examine third-party embeddedness (whether ego and alter share a common and close third party). The most consistent finding in the scarce literature on tie decay is that more embedded ties are less likely to be lost (Burt, 2000), the logic being that the (stronger) bonds formed between ego and alter due to embeddedness in third party ties will be more likely to withstand change and the passage of time and so less likely to decay or break. These triadic effects explained the persistence of ties in the case of Argentinean immigrants over a 2 year period (Lubbers et al., 2010), as well as urban community members over a 12 year period (Martin & Yeung, 2006), and among Indian entrepreneurs over a 14-month period (Vissa & Bhagavatula, 2012). Thus, we propose:

H5: Newly promoted service professionals are less likely to lose a contact who is embedded in common third-party ties.

While embeddedness is likely to be important to tie persistence, professional service firm settings may create counter pressures on professionals. Transitioning to a new role with greater responsibilities should make efficiency and productivity vital. Service professionals are less able to afford comfortable, repeated exchanges with contacts who do not offer novelty of information, knowledge, and perspectives. Their jobs now require them to know more about company direction, the client landscape, new technologies, and the location and quality of internal resources. That information also needs to be reliable so that good decisions are made, meaning some triangulation is required, assessing a diversity of opinions and views before coming to conclusions. In other words, newly promoted service professionals may be sensitive to the redundancy of their contacts. This may not mean the complete opposite of embeddedness—which captures a combination of overlap but also closeness—and so rejecting all embedded ties. However the inertia of embeddedness may require “balance,” that is shedding highly overlapping or redundant ties. That employees should benefit from developing efficient, non-redundant social networks is supported in cross-sectional studies, for example the finding that non-redundant ties ensure broader reach in an organization, which facilitate greater information access and sponsorship opportunities, and, in turn, better career prospects (Seibert, Kraimer, & Liden, 2001). Knowledge-intensive work may be particularly impacted by perspective diversity and breadth of access and has been linked to greater access to new knowledge (Tsai, 2002) and higher individual performance outcomes (Cross & Cummings, 2004). We therefore expect that service professionals transitioning to more senior roles will end-up trimming redundant contacts. In his qualitative study of high-technology firms and their collaborations, Davis (2008) refers to this conscious engagement in network shaping as “network plasticity,” which means pruning ties that

constrain novel information flows and creating novel bridges across partners. At the individual level, “cutting-off” redundant contacts may not come naturally to some, and may even require conscious effort because of the comfort of embeddedness, yet it can be learned (Burt & Ronchi, 2007). In sum, we propose:

H6: Newly promoted service professionals are more likely to lose contacts who are redundant (i.e., overlap/connected to other contacts).

Hypotheses 5 and 6 also provide us with another opportunity to compete and test the logic of efficiency (H6) and cohesion (H5), but now at the structural level.

Trust Modifiers of Redundant Contact Loss

Although we have argued above that overlapping, redundant contacts create inefficiencies which busy service professionals will want to avoid, there are also some possible advantages to redundancy. For instance, through the enabling of social sanctions if requests are not met (at all or on time), overlapping contacts can help secure more reliable access to resources and information (Coleman, 1990; Gargiulo, Ertug, & Galunic, 2009). In other words, network overlap may reduce uncertainty in getting (redundant) contacts to respond.

However, this uncertainty is likely to be moderated by the overall trust that ego has developed in his/her network. In other words, we need to look at the quality of ego’s relational “options” to fully understand how their relationship evolves with a focal contact, a view we believe is important to the question of tie loss and yet unexamined. Furthermore, whether this uncertainty is mitigated or, on the other hand, amplified, may depend upon the type of trust in question. In the case of cognitive trust in extant contacts, uncertainty is likely to be mitigated. The uncertainty reduction (or “opportunity cost”) of losing redundant contacts is likely to be minimal when an actor has a network that is highly competent and reliable. The accelerated

release of resources afforded by redundant contacts may not be necessary given the high reliability of extant contacts. If the focal actor has developed relations which provide reliable access, there is more to be lost from inefficient (redundant) network structures than gained through overlapping ties. The presence of high cognitive-based trust contacts in an ego's extant network reduces the uncertainty of securing those resources. It should therefore make losing redundant contacts more likely. Therefore, we hypothesize as the following:

H7: The higher the level of cognitive-based trust in their network, the more newly promoted service professionals are likely to lose their redundant (i.e. overlapping) contacts.

Trust in the extant network, however, may also work against tie loss. Specifically, high emotional trust in the extant network is likely to make overlapping contact loss less likely. This is because actors who are embedded in high emotional trust relations are more likely to experience the sort of group bonding which favors keeping that group intact. In this case, redundant, overlapping contacts are precisely the ones less likely to be lost. In fact, shunning overlapping contacts may be difficult, as it may push ego towards unbalanced relations (Heider, 1967). That is, cutting off redundant ties which are part of high emotion-based trust relations—exactly the ones which may create special group bonds or sentiments—may be especially painful, disruptive to the extant collective, and possibly attract social reproach. Corroborating this view are related studies that show that in unbalanced social situations (e.g. being a broker), actors need to manage their self-representation and monitor their behavior (Mehra, Borgatti, & Schippers, 2010; Mehra, Kilduff, & Brass, 2001). In sum, we hypothesize that tie loss of redundant contacts is dampened when ego has established greater emotional trust in extant contacts.

H8: The higher the level of emotional trust in their network, the less newly promoted service professionals are likely to lose their redundant contacts.

These final two hypotheses offer a particularly unique perspective on tie decay, arguing that the “option” value of extant ties (i.e., all ties except the focal contact) will help explain whether or not a specific contact is retained. Moreover, these hypotheses interact cohesion and efficiency logics, allowing us to test if one logic (shedding redundant, less efficient, contacts) is modified by others (accelerated decay because of the efficiency of extant contacts or diminished decay because of boosts to cohesion).

DATA AND METHODS

Our target population is composed of all recently promoted individuals in three professional service firms, a consultancy, an auditor, and a law firm, located in Europe and North America. All were moving into the common role of “project managers” for the consultancy and auditor. For the law firm, the promotions were 2/3rd to associate level (both internal and lawyers on secondment) and 1/3rd partners (newest/junior entries to this role). The law firm promotions entailed expanded managerial and professional duties, although the moves were not the same quantum career step as in the case of auditors and consultants. Although the contexts were not identical for consultants/auditors versus lawyers, for the purposes of predicting tie decay they were similar enough, and we control for industry speciality. From this population, we randomly chose a representative sample (age, gender, time with firm, professional area, etc.) from each firm, targeting, finally, 101 respondents (because interviews were required, at two time periods, we had to focus our resources). We interviewed and surveyed the respondents in two waves roughly 18 months apart. Twenty respondents exited their firms during this time, and two respondents failed to respond. Hence, our sample consisted of 79 respondents eligible for our final analysis (37 auditors, 18 consultants, 24 lawyers).

The survey required the respondents to name their key contacts during the previous year, tapping into six conventional network categories: task advice, innovation, political buy-in,

professional growth, social support, and external contacts. Contacts could be named to more than one category. The respondents were then asked about the nature of their relationship with each contact, including items that measured trust levels. Surveys were confidential. Excluding the observations with missing values, we ended up with a total of 1084 contacts at risk of tie decay.¹

Dependent variables Our dependent variable is whether or not a contact is lost from the second network survey, having been present in the first. As our respondents completed the second network survey just before their respective interview, we verified missing contacts during the interviews by asking whether they are left out by mistake, and corrected for those mistakes. This provides a strong check that the missing contacts are indeed lost, rather than being forgotten in the survey process or a mistake made. *Tie loss* equals one if the T1 contact is lost.

Independent variables We are looking for predictors of why contacts from time 1 are lost in time 2, and so all of our variables concerning contacts are necessarily from time 1. We investigated and compared rank descriptions across the three settings and found that the broader categories were comparable, which we coded as *Partner*, *Manager* (including Project Managers or Associates), *Entry* level, *Staff* level (i.e., those who support core functions and are not on partner track), and the *External* category. For our analysis, we set the manager category as the baseline category. *Tie multiplexity* measures the number of different network categories a contact covers of the 6 conventional network types.

We measured trust by asking the respondents 11 Likert-type questions (5-point scales): five for *emotional trust* and six items for *cognitive trust* based on existing trust scales (McAllister, 1995). The items are listed in **Table 1**. We performed an exploratory factor analysis using VARIMAX rotation and found a two-factor structure. *Emotional trust* was formed by

¹ Excluded respondents did not differ from our sample in network size, gender, tenure with firm, and area of expertise.

taking the average of the five items ($\alpha=0.90$). Although the six items of cognitive trust were reliable, excluding item 6 significantly enhanced the reliability of alpha (from $\alpha=0.86$ to 0.88), so we proceeded with 5 items. Cognitive trust is then the average of the five items. To test hypothesis 7 and 8, we also formed *emotional trust on others* and *cognitive trust on others* by taking the average of the respective trust scores in other contacts in the ego's network, excluding the focal contact.

A contact's embeddedness captures whether this contact shares with ego strongly connected third parties. Formally, *network embeddedness* follows Burt's (1992: 54) alter specific constraint measure², which is calculated as:

$$\mathbf{Network\ Embeddedness}_{ij} = p_{ij} + \sum_q p_{i,q} * p_{qj}$$

where $p_{i,j}$ is the proportion of i 's closeness to alter j , and $p_{i,q}$ is the proportion of i 's closeness to alter q , a common 3rd-party with j . $p_{q,j}$ is the proportion of q 's closeness to alter j . This measure approaches 1 as j becomes more embedded in i 's network, meaning j represents high proportional closeness with and is closely connected to third-parties who are also closely connected with focal actor i (closeness was measured on a 5-point scale, 1=Distant, 5=Especially close).

While network embeddedness shows the extent to which a contact is close to both ego and his/her other contacts, *network efficiency* captures whether contacts in ego's network are non-redundant. There are at least two prominent candidates for this measure. One is *proportional density*, a popular measure of network sparseness (Podolny & Baron, 1997). Proportional density

² This measure is a sub-component of Burt (1992)'s widely used network constraint measure. Whereas network constraint captures the extent to which an ego's network is constrained by *all* of his or her contacts, alter specific constraint measures the extent to which an ego is constrained by a *particular* alter. In fact, the sum of the squares of alter specific constraints across all of ego's contact is equivalent to network constraint measure.

is the number of ties among ego's alters divided by the maximum possible number of ties. Networks with low proportional density are more efficient from the point of view of being less redundant. While this measures non-redundancy at ego level, we also constructed an alternative way of measuring efficiency on dyadic level between ego and his/her contact. Alters having a unique connection to ego are non-redundant. Therefore, we measure *network overlap* by counting, for each alter, the number of third persons who connect both ego and that alter. Once again, the higher the network overlap, the more redundant is that alter, because s/he will share similar information and resources with other alters.

Although network embeddedness and network efficiency could be empirically correlated, we argue that they are conceptually different. Figure 1 illustrates the difference between our measure of network embeddedness and network efficiency. Both network A and B contains an ego, a focal alter, and three common third parties who are themselves connected to both the ego and the alter. Therefore, network A and B score the same on proportional density (e.g. density = 1) and network overlap (e.g. overlap = 3). Although tie strength between the ego and the alter is the same, the alter in network B brings more network embeddedness for the ego than s/he does in network A, because ego and the alter in network B are surrounded by stronger ties. Hence, network embeddedness can be differentiated from either relational embeddedness or closed network structure.

Controls We controlled for various other factors that may provide alternative explanations of tie loss, both characteristics of ego and his/her contacts. We controlled for the service professional's *age* in years (older professionals may be more selective in their ties and lose them less easily), *education* (human capital may diminish a person's dependence on social capital, where 0 indicates bachelors degree, 1 denotes masters degree, and 2 denotes doctorate), *foreigner* (those not from the host nation, who may display different networking tendencies complicating

tie maintenance), *female* (males and females may show different proclivities to sever ties), *single* (marital status may influence time and proclivity for networking, which may influence tie turnover rate), *firm tenure* in years and *job tenure* in months (to capture any job experience/learning related factors), *network size* (which may impact ego's ability to maintain a network) and number of *ties gained* (similar to network size, it may indicate more crowding out of existing contacts). Homophily has been considered an important control for tie persistence, although the empirical evidence is weak (Martin & Yeung, 2006; Noel & Nyhan, 2011). Nonetheless, we control for *location homophily* by creating a dummy which captures when ego and alter are in the same office, and *expertise homophily*, a dummy which captures when ego and alter are in the same expertise group. We also control for *tie longevity* (in months) and *tie frequency* (1=a few times a year while 5=daily) to rule out simply familiarity as the explanation for interpersonal trust. Finally, we controlled for differing natural rates of tie dissolution across respondents' job characteristics. Our three sample professional service firms are organizationally divided into different expertise groups (N=23) separated by the industry specialty or functional role. Because these different expertise groups differ in their need and availability for social capital, we introduced dummies for each expertise group in our analysis by setting one of the group as a base category.

Analysis We use logit regression analysis to model the likelihood of tie loss between T1 and T2. However, because our data is at the dyadic level, multiple observations share the same ego, thereby violating the usual assumption of independence between observations. Furthermore, multiple observations can share the same alters as well.³ Previous works have warned that this may create serious heteroscedasticity and artificially depress standard errors (Cameron, Gelbach,

³ Alters are not, of course, entered multiple times per ego. However, respondents from the same office or expertise group may indicate a common person as their network contact. A total of 890 different contacts appear in our data. This makes alters to be listed on average 1.22 times; just a little more than once. We control for this non-independence.

& Muller, 2011; Krackhardt, 1988; Lindgren, 2010). We use a two-way clustering method to account for heteroscedasticity arising at two different levels, e.g. shared ego but also alters. Two-way clustering allows serial correlations among the error terms that share common dimensions at different levels. Therefore, it helps to relax the strict assumption of observational independence and corrects the standard errors for robust inference. Recent works showed that this analytical strategy improves statistical inference (Cameron, Gelbach, & Muller, 2011; Lindgren, 2010), and it has been used in other research in management (Kleinbaum, 2012; Kleinbaum, Stuart, & Tushman, *forthcoming*).⁴

RESULTS

Table 2 contains the descriptive statistics and pair-wise correlations of our variables for the tie loss models, and Table 3 presents our two-way clustered logit regression results. Model 1 presents the baseline model with control variables. Model 2 adds the contact's job rank to test hypothesis 1. Supporting **H1**, partners are less likely to be lost. The risk of tie loss for alters in other ranks did not differ from manager level alters, so the main effect is that contacts who are partners are significantly less likely to be lost. Model 3 adds tie multiplexity to test hypothesis 2. Supporting **H2**, more multiplex ties are less likely to be lost. Both the effects of partner rank and tie multiplexity remain robust across different specifications, even when interpersonal trust is controlled. This implies that tie multiplexity has a utility (efficiency) above and beyond its contribution to interpersonal trust.

Model 4 tests the effect of trust on tie loss. Supporting **H3** and **H4**, both emotional trust and cognitive trust reduces the likelihood of losing that contact. It is worthwhile to note that the coefficient of cognitive trust is roughly twice that of emotional trust, which implies that the

⁴ We use *nway_clus* ado routine with STATA 12 to estimate our logit model, shared generously by Adam Kleinbaum.

efficiency motivation may be stronger than the cohesion motivation at the interpersonal level. Using the fully specified models (model 9 and 10), we also conducted a Wald test by setting our null hypothesis as the equality between the effects of cognitive and emotional trust. The differences were marginally significant in both models ($p < 0.10$). We would also like to direct attention to the significant effect of cognitive trust in (extant) others. Once the dyadic level of cognitive trust is controlled for, ego is more likely to leave that contact out where cognitive trust in others is high. Although we did not hypothesize this effect directly, it offers early support for examining how ego's extant "options" influence tie loss decisions, which we will return to.

In model 5, we further explored a possible interaction effect between the two forms of trust. However, no significant interaction effects were found between trusts. The two forms of trust work independently.

Model 6 tests network embeddedness. Supporting **H5**, the effect of network embeddedness is negative and significant. Alters which are embedded in strong third party ties are less likely to be lost. Noteworthy is also the impact of this structural measure on the effect of emotional trust, which is diminished and now marginally significant, with no impact on cognitive trust. This reveals the overlapping impacts of network embeddedness and emotional trust. However, they remain independent effects. Emotional trust picks up attributes of the relation that overlap with—but are distinct from—the bonding that occurs when alters share strong common connections with ego. Here, we see network embeddedness as being the stronger driving force behind those interpersonal bonds.

Models 7 and 8 test the effect of network efficiency by respectively using proportional density and network overlap. Although conceptually distinct, the network based measure of density and overlap may raise a concern for multicollinearity with network embeddedness. Hence,

in model 7 and 8, we separately included each measure, excluding network embeddedness. Model 7 finds support for network efficiency with proportional density, but model 8 failed to find significance in the network overlap measure. In model 9 and 10, we further tested our hypothesis 6 by now including the network embeddedness measure. Model 9 shows that proportional density retained its effect, giving a strong support for **H6**. However, as in model 8, model 10 fails to show any effect of network overlap.

Finally, hypotheses 7 and 8 are tested in model 11 and 12, again using both proportional density and network overlap. In both models, we find strong supports for **H7** and **H8**. Model 11 shows that the interaction effect of proportional density and cognitive trust in others is positive and significant. In other words, the presence of competent and reliable others further motivates an ego with a redundant network to streamline his/her network. On the other hand, the greater the emotional trust in extant alters causes ego to be reluctant to lose contacts. In parallel, network overlap also shows significant interaction effects in model 12, corroborating the findings in model 11. In sum, we find strong support for **H7** and **H8**.

Surprisingly, in both model 11 and 12, we also found that the main effect of emotional trust in others is positive and significant. This implies that ego is more likely to lose touch with an isolated contact (i.e., a contact who does not share any common third party), when s/he has others who they can emotionally trust. This tendency of dis-embedding continues until the ego shares approximately 7 to 8 network overlaps.

Figure 2 respectively shows the effect of network overlap on the probability of tie loss at three different levels of cognitive and emotional trust in others: at the empirically observed mean, maximum, and minimum. As figure 2 (A) shows, cognitive trust shows a positive moderating effect. While ego with a minimal level of cognitive trust in others relies on network overlap to

ensure resource inflows, actors with other options are bold enough to reshape their networks to be more efficient, leaving the overlapped contact out. Figure 2 (B) demonstrates that ego who has low emotional trust in extant contacts is more likely to leave out a densely connected contact. However, ego who puts greater emotional trust in others is more likely stick to those who are densely connected to his/her other contacts.

DISCUSSION

Relations change, and sometimes must change in order to introduce new responsibilities, opportunities and resources. One instance when relational change is expected and may be necessary is during transitions into new roles, creating new demands on service professionals. Existing relations may no longer be critical and so fade away, while new relations may have to be formed in order to create robust channels for resource exchange and support. In this paper we are seeking to understand which factors predict tie loss, and how needs for cohesion and efficiency intermingle.

While there are many esoteric reasons why each of our service professionals shed existing relations (which we control) our concern is with two major logics, cohesion and efficiency, and across three levels of analysis which may affect tie loss decisions: the contact level (alters), the relationship level, and the overall network level (structure). This study finds that both logics, at times independently and at others interactively, help explain relational change at all three levels, but with twists for each. All our eight hypotheses are supported. The overall impression is of actors seeking some level of equilibrium between cohesion and efficiency while making changes in relations, a “tug-of-war” of sorts in figuring out contact retention.

First, we found that the efficiency logic is certainly at work at the individual node level as newly promoted service professionals prove to be status-conscious in how their relations evolve. They are much less likely to shed existing partners from their network (**H1**). The focus is indeed

on the partner status, not just rank, as we found hierarchy per se is not the driver (entry-level contacts are no more or less likely to be shed than manager-level contacts). This makes sense given the typically large gap in prestige and cachet between partners and all others in professional service firms. Hanging onto high prestige ties during a transition to management may be particularly important as it signals the social circle to which the focal actors ultimately aspire. In fact, the strong appeal of retaining partner contacts per se reveals a desire to associate with roles which most reflect career aspirations and identity, not just pragmatics. In other words, our finding on partner retention, but not on the effect of hierarchy in general (i.e., more senior contacts), suggests that it's not so much efficiency at play but also identity and self-concept formation.

While controlling for this rank/status effect, however, we find service professionals are nonetheless quite pragmatic and practical when it comes to alter features, retaining more multiplex relations (**H2**–efficiency logic) regardless of the rank. Multiplex relations simply bring a greater variety of resources per relation. This efficiency is particularly important to newly promoted professionals, whose work complexity increases, and so the need for efficient relations grows. Interestingly, the effect of tie multiplexity holds across models and even when controlling for trust levels. This is important because prior work has argued that relationships will spillover to different domains of interaction because of strong trusting ties built between actors (Gulati & Gargiulo, 1999), thus essentially downplaying the effect of multiplexity as an epiphenomenon of trust. Multiplexity's independent effect on tie loss points to the raw resource advantages of being connected to relations who bring pluralistic benefits to the focal actor. Our finding on the node level begins to reveal a sense of balance these service professionals exhibit during relational changes, in this case balancing the desire to retain high-status, identity congruent contacts but also highly practical ones, a sensibility to tie loss which is repeated in other findings below.

Second, we found that both the efficiency and cohesion logics operate at the dyadic level. Our data indeed indicates that actors are influenced by more rational, cognitive-based

assessments of those alters (**H4**—efficiency logic) as they are by emotional-based trust (**H3**—cohesion logic)—both matter, and they matter independently (no interaction effects). There is, however, an advantage to cognitive-based trust (efficiency) at this level (based on significance across models and coefficient sizes). It may be that interpersonal (dyadic) considerations have some tendency to favor efficiency logics.

Third, our study also reveals balance between cohesion and efficiency logics at the level of the overall network structure. Embeddedness matters—contacts that are closely connected with common third parties are less likely to be shed by the focal actor (**H5**—cohesion logic). Contacts so embedded are more likely to constrain the focal actor, but they are also more likely to develop thicker and/or more meaningful bonds, the sort of bonds that are less likely to be destroyed during transitions. Nonetheless, we find that, controlling for relational embeddedness, actors are still efficiency minded. Contacts which represent the greatest redundancy—those for whom more alternative contacts exist—are more likely to be shed (**H6**—efficiency logic). This finding once again offers nuance to how actors approach relational change. Embeddedness captures the power of cohesion, of thick, close relations with common third parties (we lose these contacts less), while tie efficiency captures the limits of being tied to those who do not necessarily bring a fresh perspective. Both can matter and they need not be contradictory. The impression is what Kilduff, Tsai, and Hanke (2006) describe as a complex adaptive system, one which exhibits *both* a tendency for persistence but also modification in the face of change.

Fourth, we also find contingencies between trust and structure. We found that efficiency and cohesion work together to explain the loss of redundant ties in an embedded network. Our data shows that an actor is more likely to shed redundant ties when s/he has greater cognitive-trust in other contacts in the network, presumably higher quality relational ‘options’ s/he can substitute for the redundant tie (**H7**—efficiency logic). On the other hand, s/he is less likely to lose redundant ties where there is high emotional-trust in the rest of the network (**H8**—cohesion logic).

More generally, our study contributes to the competing mechanisms of cohesion and efficiency, mechanisms easily thought to be mutually exclusive. Although prior work shows an effect of embeddedness on tie maintenance (Burt, 2000; Lubbers et al., 2010; Martin & Yeung, 2006), the active and parallel striving for non-redundancy—the development of structural holes as an *activity*—has not been well documented (for a simulation study, see Buskens & Van de Rijt, 2008). One reason for our finding may have to do with the context: promotions to new roles offer professionals an opportunity to rethink their social relations. In as much as transitioning service professionals need a sense of security in their social relations, they also need to expand their opportunity sets, and so they may be particularly conscious during these transitions to make their networks more non-redundant, even while retaining particularly embedded ties. In fact, where actors are groups or organizations, studies have shown that network structures can evolve to balance the embeddedness-efficiency trade-off by generating local cliques with short-cuts to new social circles (Uzzi & Spiro, 2005). The micro-foundations or dynamics of how this balance comes about, however, has not been studied. We show service professionals acting upon plural motivations to shed ties, in the context of career transitions. On the one hand, actors retain embedded ties that are strongly connected. On the other hand, they also shed those ties which are structurally redundant, provided they have sufficient cognitive-trust in the rest of their network. Interestingly, they do not lose structurally redundant ties when they have higher level of emotional trust in the rest of the network.

There are various practical implications of our findings, and we highlight several here that concern relational decay. First, there may be individuals in a professional's working life who—for various and personal reasons—they very much want to retain over the long term. One strategy is to try and make these ties multiplex, leveraging the glue-like properties of relational plurality. By broadening the sorts of interactions they offer the other, they are more likely to see these relationships survive the tug-and-pull of career transitions and workplace dynamics. Relatedly,

team managers and HR professionals who want to see working groups retain connections and stick together longer should be encouraged to organize events that help members discover more about each other and build more complex ties (between two members but also embedded ties, involving multiple members) and beyond the narrow confines of the task at hand. Finally, if we assume that establishing trusting relations is desirable, and that it is part of positive interpersonal development but also part wise selection, then some attention needs to be given to making wiser choices. Developing plurality early in one's career—in the sense of greater non-redundancy of contacts—should therefore help a professional make more discerning decisions about future contacts. One way to achieve a desired lower redundancy of contacts also implies to surround oneself with a multitude of highly competent i.e. high cognitive trust contacts which will make the letting go of the most redundant contacts easier.

Future Research Directions and Limitations

Our study has limitations that could be advanced by future research. First, because only ego network data were available, which rely upon ego's assessment of ties between contacts, there may be inaccuracy in assessing these second-order ties (Kilduff et al., 2008). Full network data should offer a more accurate snapshot of both embeddedness and efficiency. Nonetheless, we see no systemic bias across our respondents that should make some more likely than others to recognize either more embedded or more efficient networks among their relations. Second, our study did not measure personality differences in the propensity to shed ties, and this may be consequential. For example, recent work (Sasovova et al., 2010) has shown that differences in self-monitoring influences the degree of network change. Although our sample is drawn from a similar pool, future work should include measures of personality differences and explore the interaction of these differences with nodal, relational, and structural measures.

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TABLE 1: ITEMS USED FOR EMOTIONAL AND COGNITIVE TRUST***Emotional trust (5 point Likert)***

1. We have a sharing relationship. That is, we can freely share our ideas, feelings, and hopes.
2. I can talk freely to this individual about any difficulties I am having at work and know that they will want to listen.
3. We would both feel a sense of loss if one of us were transferred so that we could no longer work together.
4. If I shared my problems with this person, I know that s(he) would respond caringly and constructively.
5. I could say that both of us have made considerable emotional investments in our working relationship.

Cognitive trust (5 point Likert)

1. This contact tends to keep promises and commitments.
2. This contact would not intentionally neglect his or her responsibilities even when not observed.
3. This contact is highly competent in the job he or she is supposed to do.
4. This contact approaches his/her job with professionalism and dedication.
5. Most people, even those not his/her close friends, trust and respect this individual in the firm.
6. This contact is the kind of person who would easily hurt others to serve his or her own interest: (Reverse coded).

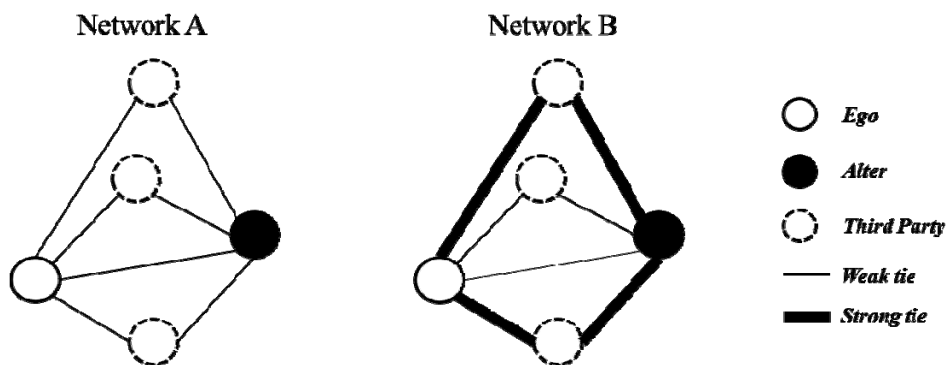
FIGURE 1: THE DIFFERENCES IN NETWORK EMBEDDEDNESS AND NETWORK EFFICIENCY

TABLE 2. DESCRIPTIVE STATISTICS AND PAIR-WISE CORRELATIONS FOR TIE LOSS (A)

Variables	Mean	S.D.	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Age	29.36	3.38	24	38										
(2) Education	0.47	0.61	0	2	0.46**									
(3) Foreigner	0.22	0.41	0	1	-0.18**	-0.12**								
(4) Female	0.32	0.47	0	1	-0.29**	-0.16**	0.10**							
(5) Single	0.26	0.44	0	1	-0.12**	0.01	0.11**	0.11**						
(6) Tenure at firm	3.99	2.42	0.3	10.7	0.18**	-0.19**	0.02	0.01	-0.03					
(7) Tenure at job	6.1	2.71	3	13	0.24**	-0.32**	-0.01	-0.16**	0.11**	0.65**				
(8) Network size	17.64	4.62	7	27	0.03	-0.05	0.21**	0.13**	0.04	-0.17**	-0.12**			
(9) Ties gained	7.92	4.47	1	23	0.06	-0.09**	0.17**	0.07*	0.10**	-0.10**	0.03	0.23**		
(10) Location homophily	0.6	0.49	0	1	-0.07*	-0.00	0.02	-0.08*	-0.04	0.05	0.06*	-0.13**	-0.09**	
(11) Expertise homophily	0.54	0.5	0	1	-0.04	-0.01	-0.07*	0.01	-0.08*	0.02	-0.03	-0.16**	-0.11**	0.57**
(12) Tie longevity	3.18	3.06	0	29	0.08*	-0.10**	-0.12**	-0.02	-0.01	0.21**	0.20**	-0.01	0.03	-0.14**
(13) Tie frequency	3.5	1.17	1	5	-0.16**	-0.02	-0.11**	-0.10**	0.02	-0.09**	-0.04	-0.10**	-0.09**	0.43**
(14) Emotional trust on others	3.36	0.47	1.62	4.33	-0.34**	-0.08*	-0.06	0.30**	-0.01	-0.20**	-0.24**	0.05	0.07*	-0.04
(15) Cognitive trust on others	4.1	0.54	1.65	4.96	-0.09**	-0.13**	-0.02	0.12**	0.13**	0.10**	0.29**	0.02	0.03	-0.03
(16) External rank	0.2	0.4	0	1	-0.02	-0.19**	0.08*	0.02	0.02	0.03	0.12**	0.19**	0.08*	-0.58**
(17) Staff rank	0.05	0.21	0	1	0.19**	0.26**	-0.12**	-0.12**	-0.06*	-0.11**	-0.17**	0.06	0.02	-0.26**
(18) Entry rank	0.22	0.41	0	1	-0.14**	0.04	0.03	0.01	0.07*	-0.22**	-0.16**	0.04	-0.05	0.24**
(19) Partner rank	0.26	0.44	0	1	0.13**	0.06	-0.06*	-0.09**	0.02	0.16**	0.17**	-0.12**	-0.01	0.22**
(20) Tie multiplexity	1.6	0.98	1	6	0.00	-0.03	-0.02	-0.05	-0.03	0.05	0.03	-0.09**	-0.05	0.26**
(21) Emotional trust	3.38	1.04	1	5	-0.15**	-0.05	-0.02	0.15**	-0.00	-0.10**	-0.12**	0.04	0.05	0.00
(22) Cognitive trust	4.14	0.75	1	5	-0.06	-0.11**	0.00	0.10**	0.09**	0.05	0.19**	0.04	0.05	-0.03
(23) Network embeddedness	0.01	0.01	0	0.14	-0.00	-0.00	-0.09**	-0.04	-0.07*	0.12**	0.05	-0.65**	-0.13**	0.21**
(24) Proportional density	0.63	0.28	0.17	1	0.03	0.10**	-0.05	-0.09**	-0.15**	0.33**	0.12**	-0.40**	-0.03	0.15**
(25) Network overlap	9.98	5.72	0	24	0.06*	0.08*	0.10**	-0.01	-0.10**	0.26**	0.09**	0.17**	0.08*	0.30**

TABLE 2. DESCRIPTIVE STATISTICS AND PAIR-WISE CORRELATIONS FOR TIE LOSS (B)

Variables	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
(12) Tie longevity	-0.19**													
(13) Tie frequency	0.42**	-0.08*												
(14) Emotional trust on others	0.04	0.04	0.01											
(15) Cognitive trust on others	-0.02	0.07*	-0.07*	0.20**										
(16) External rank	-0.50**	0.13**	-0.26**	0.03	0.05									
(17) Staff rank	-0.23**	0.17**	-0.14**	-0.07*	-0.09**	-0.11**								
(18) Entry rank	0.14**	-0.16**	0.26**	0.01	0.03	-0.26**	-0.12**							
(19) Partner rank	0.22**	0.01	-0.02	-0.02	0.02	-0.30**	-0.13**	-0.32**						
(20) Tie multiplexity	0.28**	-0.01	0.32**	-0.02	-0.03	-0.21**	-0.11**	-0.12**	0.25**					
(21) Emotional trust	-0.02	0.26**	0.22**	0.34**	0.07*	0.02	0.06	0.19**	-0.26**	0.19**				
(22) Cognitive trust Network	0.01	0.09**	-0.02	0.12**	0.66**	0.02	-0.02	-0.01	0.08*	0.13**	0.23**			
(23) embeddedness	0.29**	0.04	0.25**	-0.07*	-0.00	-0.20**	-0.13**	0.02	0.10**	0.33**	0.21**	0.07*		
(24) Proportional density	0.16**	0.02	0.09**	-0.06	-0.18**	-0.14**	-0.05	-0.12**	0.09**	0.05	-0.04	-0.16**	0.28**	
(25) Network overlap	0.32**	-0.07*	0.18**	-0.05	-0.13**	-0.22**	-0.18**	-0.04	0.16**	0.17**	-0.02	-0.09**	0.01	0.65**

*: p<0.05

**: p<0.01

TABLE 3. RESULTS OF LOGIT MODELS FOR TIE LOSS (A)

	(1)	(2)	(3)	(4)	(5)	(6)						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6						
Age	-0.04	(0.03)	-0.04	(0.02)	-0.00	(0.03)	-0.01	(0.03)	-0.01	(0.03)	0.00	(0.03)
Education	0.43*	(0.20)	0.48*	(0.20)	0.39+	(0.23)	0.46+	(0.24)	0.46+	(0.25)	0.43+	(0.24)
Foreigner	-0.34	(0.22)	-0.40+	(0.22)	-0.34	(0.24)	-0.25	(0.25)	-0.27	(0.25)	-0.26	(0.25)
Female	0.01	(0.19)	-0.02	(0.21)	-0.01	(0.22)	0.06	(0.23)	0.08	(0.24)	0.10	(0.23)
Single	0.12	(0.16)	0.17	(0.16)	0.32+	(0.18)	0.34+	(0.17)	0.37*	(0.18)	0.31+	(0.17)
Tenure at firm	-0.01	(0.05)	0.00	(0.05)	0.04	(0.05)	0.04	(0.06)	0.04	(0.06)	0.04	(0.06)
Tenure at job	-0.13*	(0.06)	-0.11*	(0.05)	-0.17**	(0.06)	-0.19**	(0.06)	-0.19**	(0.06)	-0.20**	(0.06)
Network size	0.04+	(0.02)	0.04+	(0.02)	0.03	(0.03)	0.04	(0.03)	0.04	(0.03)	-0.00	(0.03)
Ties gained	-0.08**	(0.02)	-0.08**	(0.02)	-0.08**	(0.02)	-0.08**	(0.02)	-0.08**	(0.02)	-0.08**	(0.02)
Location homophily	-0.32	(0.23)	-0.27	(0.26)	-0.23	(0.25)	-0.26	(0.26)	-0.27	(0.25)	-0.24	(0.26)
Expertise homophily	-0.73**	(0.21)	-0.64**	(0.24)	-0.61**	(0.24)	-0.65**	(0.25)	-0.65**	(0.25)	-0.59*	(0.24)
Tie longevity	-0.00	(0.03)	0.01	(0.03)	0.01	(0.03)	0.05	(0.04)	0.04	(0.03)	0.05	(0.04)
Tie frequency	-0.43**	(0.09)	-0.51**	(0.09)	-0.34**	(0.09)	-0.30**	(0.09)	-0.31**	(0.09)	-0.28**	(0.09)
Emotional trust on others	-0.11	(0.18)	-0.04	(0.19)	-0.06	(0.21)	0.01	(0.23)	-0.03	(0.23)	-0.05	(0.23)
Cognitive trust on others	-0.01	(0.11)	-0.04	(0.11)	-0.02	(0.12)	0.46*	(0.21)	0.46*	(0.21)	0.49*	(0.21)
External rank			-0.10	(0.36)	-0.38	(0.35)	-0.32	(0.37)	-0.34	(0.36)	-0.31	(0.37)
Staff rank			-0.53	(0.58)	-0.79	(0.58)	-0.54	(0.52)	-0.55	(0.52)	-0.60	(0.52)
Entry rank			0.16	(0.22)	-0.21	(0.23)	-0.06	(0.25)	-0.06	(0.24)	-0.06	(0.24)
Partner rank			-0.85**	(0.20)	-0.74**	(0.21)	-0.84**	(0.21)	-0.85**	(0.21)	-0.83**	(0.21)
Tie multiplexity					-0.73**	(0.09)	-0.61**	(0.10)	-0.62**	(0.10)	-0.58**	(0.10)
Emotional trust							-0.26*	(0.11)	-0.91+	(0.47)	-0.20+	(0.11)
Cognitive trust							-0.57**	(0.17)	-1.07**	(0.41)	-0.57**	(0.17)
Emotional trust * Cognitive trust									0.16	(0.11)		
Network embeddedness											-18.28*	(8.53)
Proportional density												
Network overlap												
Cognitive trust on others * Proportional density												
Emotional trust on others * Proportional density												
Cognitive trust on others * Network overlap												
Emotional trust on others * Network overlap												
Constant	3.98**	(1.35)	3.99**	(1.34)	3.77**	(1.41)	4.39**	(1.39)	6.56**	(1.89)	4.93**	(1.41)
Expertise group dummies	Yes		Yes		Yes		Yes		Yes		Yes	

Two-way clustered standard error by ego (N=68) and alter (N=890) in parentheses

+ p<.10

* p<.05,

** p<.01

TABLE 3. RESULTS OF LOGIT MODELS FOR TIE LOSS (B)

	(7)	(8)	(9)	(10)	(11)	(12)						
	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12						
Age	0.01	(0.03)	0.00	(0.03)	0.02	(0.03)	0.01	(0.03)	-0.01	(0.03)	-0.02	(0.03)
Education	0.40+	(0.24)	0.43+	(0.25)	0.38	(0.23)	0.39	(0.24)	0.52*	(0.24)	0.61*	(0.27)
Foreigner	-0.27	(0.24)	-0.26	(0.24)	-0.27	(0.25)	-0.27	(0.25)	-0.26	(0.25)	-0.21	(0.26)
Female	0.10	(0.24)	0.08	(0.24)	0.14	(0.23)	0.14	(0.23)	0.07	(0.21)	0.11	(0.25)
Single	0.41*	(0.18)	0.38*	(0.18)	0.39*	(0.18)	0.36+	(0.19)	0.39*	(0.17)	0.36+	(0.19)
Tenure at firm	0.03	(0.06)	0.03	(0.06)	0.03	(0.06)	0.03	(0.06)	0.06	(0.06)	0.05	(0.07)
Tenure at job	-0.20**	(0.06)	-0.19**	(0.06)	-0.21**	(0.07)	-0.21**	(0.06)	-0.24**	(0.07)	-0.25**	(0.07)
Network size	0.05+	(0.03)	0.03	(0.03)	0.00	(0.03)	-0.02	(0.03)	-0.01	(0.03)	-0.03	(0.04)
Ties gained	-0.08**	(0.02)	-0.08**	(0.02)	-0.08**	(0.02)	-0.08**	(0.02)	-0.06**	(0.02)	-0.06*	(0.02)
Location homophily	-0.28	(0.26)	-0.27	(0.26)	-0.26	(0.26)	-0.25	(0.26)	-0.24	(0.26)	-0.24	(0.27)
Expertise homophily	-0.66**	(0.25)	-0.68**	(0.24)	-0.60*	(0.24)	-0.62**	(0.24)	-0.64**	(0.24)	-0.64**	(0.24)
Tie longevity	0.05	(0.04)	0.05	(0.04)	0.05	(0.04)	0.05	(0.04)	0.05	(0.04)	0.05	(0.04)
Tie frequency	-0.31**	(0.09)	-0.31**	(0.09)	-0.29**	(0.09)	-0.29**	(0.09)	-0.28**	(0.09)	-0.31**	(0.09)
Emotional trust on others	0.03	(0.23)	0.03	(0.23)	-0.03	(0.23)	-0.03	(0.23)	0.92*	(0.41)	0.92*	(0.37)
Cognitive trust on others	0.52*	(0.21)	0.48*	(0.21)	0.56**	(0.21)	0.53*	(0.21)	-0.07	(0.45)	0.01	(0.41)
External rank	-0.32	(0.37)	-0.30	(0.37)	-0.32	(0.37)	-0.29	(0.37)	-0.31	(0.37)	-0.20	(0.35)
Staff rank	-0.52	(0.52)	-0.48	(0.52)	-0.57	(0.52)	-0.52	(0.52)	-0.58	(0.51)	-0.40	(0.52)
Entry rank	-0.03	(0.25)	-0.04	(0.25)	-0.03	(0.25)	-0.04	(0.25)	-0.02	(0.25)	-0.02	(0.25)
Partner rank	-0.85**	(0.21)	-0.85**	(0.21)	-0.84**	(0.21)	-0.84**	(0.21)	-0.83**	(0.21)	-0.85**	(0.21)
Tie multiplexity	-0.61**	(0.10)	-0.62**	(0.10)	-0.57**	(0.10)	-0.58**	(0.10)	-0.57**	(0.10)	-0.58**	(0.10)
Emotional trust	-0.27*	(0.12)	-0.27*	(0.11)	-0.21+	(0.11)	-0.20+	(0.11)	-0.23*	(0.12)	-0.23*	(0.12)
Cognitive trust	-0.57**	(0.17)	-0.56**	(0.17)	-0.57**	(0.17)	-0.56**	(0.17)	-0.57**	(0.17)	-0.59**	(0.16)
Emotional trust * Cognitive trust												
Network embeddedness					-18.44*	(8.41)	-19.20*	(8.59)	-20.52*	(8.43)	-20.22*	(8.69)
Proportional density	0.52*	(0.25)			0.53*	(0.25)			2.61	(2.58)		
Network overlap			0.01	(0.02)			0.02	(0.02)			0.20+	(0.11)
Cognitive trust on others * Proportional density									0.97*	(0.48)		
Emotional trust on others * Proportional density									-1.81*	(0.74)		
Cognitive trust on others * Network overlap											0.05*	(0.03)
Emotional trust on others * Network overlap											-0.12**	(0.03)
Constant	3.40*	(1.49)	4.06**	(1.55)	3.92**	(1.51)	4.55**	(1.57)	4.73*	(2.39)	5.19*	(2.19)
Expertise group dummies	Yes		Yes		Yes		Yes		Yes		Yes	

Two-way clustered standard error by ego (N=68) and alter (N=890) in parentheses

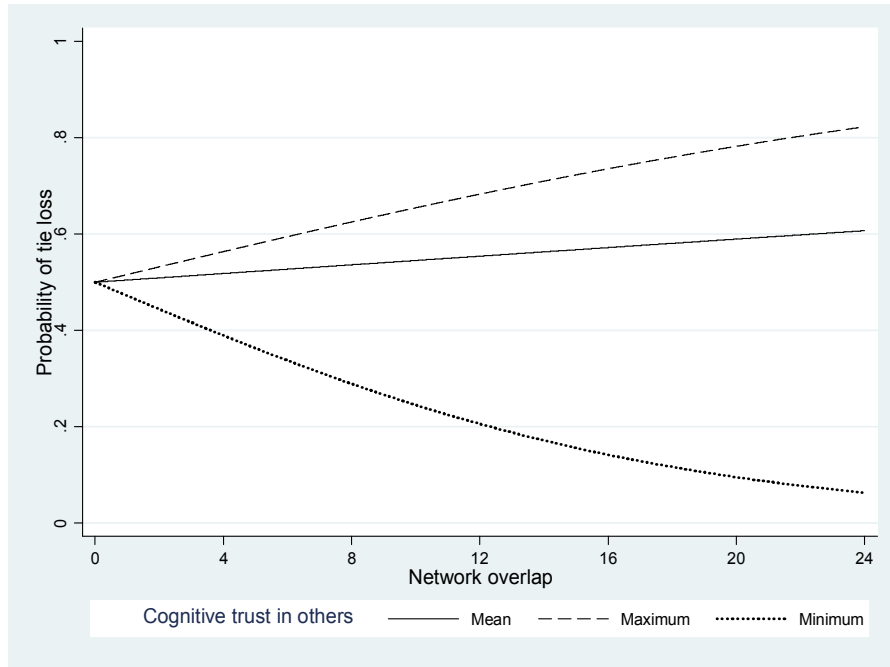
+ p<.10

* p<.05

** p<.01

FIGURE 2. THE JOINT EFFECT OF NETWORK OVERLAP AND COGNITIVE TRUST (A) AND EMOTIONAL TRUST (B) IN OTHERS ON TIE LOSS

(A) Cognitive Trust * Network Overlap versus Tie Loss Probability



(B) Emotional Trust * Network Overlap versus Tie Loss Probability

