DISCRETIONARY TIE FORMATION UNDER SUDDEN UNCERTAINTY

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Abstract
Continuous ideation is core to the innovative capacity of any organization. With discretionary exchange of ideas commonly studied under conditions of relative organization stability and growth, it remains unclear how employees take to ideation under conditions of enhanced individual-level uncertainty. Drawing on the literature on social embeddedness and uncertainty reduction theory I assess the impact of enhanced individual level uncertainty on one’s aptitude to establish new discretionary ideation relationships. I propose one’s relational and structural embeddedness to be predictive of the creation of new ideation ties when individuals face sudden change in their discretionary network. Results, based on a unique field experiment at a leading information technology service provider, confirm these hypotheses, indicating the relevance of relational as well as structural embeddedness as foundation for an individual’s future exploratory ideation. An effect reinforced by the extent of suddenly losing established ideation ties under organization downsizing. These findings hold relevance for the literatures on network evolution and organization change, inserting organizational turmoil as exogenous trigger for an individual’s discretionary inclination towards network repositioning.

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DISCRETIONARY TIE FORMATION UNDER SUDDEN UNCERTAINTY:
EVIDENCE FROM A FIELD STUDY OF A DOWNSIZING FIRM

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KEYWORDS: Network Change, Relational Embeddedness, Structural Embeddedness, Intra-Organizational Network Evolution, Exogenous shock, Downsizing, Creative Ideation.

1. INTRODUCTION

Discretionary cooperation among employees is indispensable to propel an organization forward (Birkinshaw, Brannen, and Tung, 2011; Whelan, Parise, De Valk, and Aalbers, 2011). Discretionary interaction has proven to be central in the development of new and innovative knowledge, rendering creative outcome that cannot be achieved merely through formal or quasi-formal organizational arrangements (Chen & Krauskopf, 2013). Were formal networks consist of formally prescribed relationships between employees to perform their workflow related tasks, discretionary, self-chosen informal interaction fuels innovative outcomes as individuals and groups voluntary share information and recombine ideas (Guler & Nerkar 2012; Chen &
A recent meta-analysis confirms the ability to self-determine whom to collaborate with to increase intrinsic motivation and task performance for an array of individual outcomes, including creativity (Patall, Cooper, & Robinson, 2008). Self-determination, leaving social collaboration at the discretion of the individual, has strong positive effects on personal effort and engagement, helping, learning, and task performance (Gong, Cheung, Wang, & Huang, 2012). While network literature has frequently tied discretionary behavior to creative outcome and innovation, individual preference to self-select whom to collaborate with and the organizational conditions associated to such behavior, have been largely neglected (Parker, Halgin, & Borgatti, 2015). The same literature notes a prevailing lack of understanding regarding the events or stimuli that “get the boulder moving” within organizations and argues for further exploration of exogenous mechanisms that effectuate intra-organizational network change (Paruchuri & Eisenman, 2012; Ahuja et al. 2012; Parker et al., 2015). Indeed we still know relatively little about the forces that drive employee-discretionary change within organizational networks, especially under condition of sudden organization turmoil (Ahuja, Soda, & Zaheer, 2012; Paruchuri & Eisenman, 2012). With management literature laying out a variety of instruments engineered to directly intervene, such caveat in the intra-organizational network literature is particularly noteworthy.

Network theory suggests voluntary, optional adjustment efforts to most notably take place through one’s discretionary network. The unsanctioned nature of discretionary networks allows for emediate and managerially unsanctioned individual level action, allowing for swift adjustments of one’s social infrastructure (Srivastava, 2015). From an intra-firm ideation perspective the behavioral effects at the individual level over time are particularly interesting as continuous ideation by individual employees forms the creative impetus to secure a firm’s future
competitive advantage (Whelan et al., 2011; Berg, 2016). In this paper I adopt an organization network lens to better understand the structural mechanisms that explain individual level exploration for new ideas under conditions of enhanced individual level uncertainty as one experiences sudden and egonenously triggered network change. Drawing on the literature on social embeddedness and uncertainty reduction theory, I assess the impact of enhanced individual level uncertainty on one’s aptitude to establish new discretionary ideation relationships. From a social embeddeness perspective, uncertainty reduction at the individual level has been identified as a driving force behind structural network change (Granovetter, 1973; Shah, 2000). Some individuals may be more inclined to take on new discretionary ideation ties as they endure higher degrees of uncertainty - than others, for instance (Saint-Charles & Mongeau, 2009; Lomi & Torló, 2014). Such individual level variance may openly affect the degree to which creative ideation continues within a firm as it recouperates from corporate strain. Thus, in this study, the level of abruptly introduced individual level uncertainty – the extent of one’s discretionary ties suddenly getting disbanded - is hypothesised to drive future network exploration for those that were either relationally or structurally well embedded prior to an exogenous network shock.

This study, firstly, contributes to the literature on evolution and organization change. It introduces organization driven individual-level uncertainty as an important mechanism to understand willingness to reignite discretionary creative activity within a firm. Understanding of the network effects of individual response to exogenous organizational network tremor over time is still thin on the ground in the management literature. This caveat has been attributed to methodological constraint, with prior scholarly work relaying on retrospective network data collection (e.g. Shah, 2000), simulation based data (Krackhardt & Stern, 1988; Lin, Zhao, Ismail,
or descriptive design, as well as the general difficulty of collecting network data in periods of organization ambiguity (Srivastava, 2015). Secondly, it extends recent work that highlights the role of the informal organization as prime modi perandi as organizational ambiguity increases, inserting organizational turmoil as exogenous trigger for an individual’s discretionary inclination towards network repositioning (Srivastava, 2015; Gargiulo & Benassi, 2000).

Based on a rare field experiment at a leading information technology service provider that endured downsizing, this study uniquely accounts for the role of pre-existing discretionary network structure – and derived individual network positioning – in influencing future network (re)activation choices. The reported findings indicate that individuals are more likely to generate new voluntary ideation ties if, prior to a sudden period of enhanced individual level uncertainty, they were relationally strongly embedded in the organization's ideation community. Prior ideation relations predict ability to ignite new relations. Structural embeddedness, one’s prior brokering activity within a organization’s ideation network, also provides foundation for the development of novel ideation activity. Suddenly enhanced degrees of individual level uncertainty accelerate these brokers from reaching out to forge new ideation relationships. These findings are of both scholarly and practical relevance as innovative capacity provides fertile grounds for organizations to veer back from a period of corporate turmoil.

2. CONCEPTUAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

Relational embeddedness and discretionary ideation

Individuals constantly make decisions about whom to interact with in order to achieve their goals (Parker et al., 2015). Echoing classical elements of deliberate goal-oriented agency (c.f.
(Emirbayer & Mische, 1998), recent theoretical work has started to explore the motivating factors that influence social network dynamics, examining the individual-level drivers of comparatively long-term network changes (Parker et al., 2015). Network scholars have set out to explore the preferred mechanisms that drive individual agency (Brass, Galaskiewicz, Greve, & Tsai, 2004; Kilduff & Brass, 2010), resulting in individual network behavior to be associated to either opportunity driven behavior (e.g. Ibarra, Kilduff, and Tsai, 2005); Kilduff and Brass, 2010) as well as more calculative, strategic behavior (e.g. (Borgatti & Cross, 2003; Nebus, 2006), with the collectivity of these mechanisms shaping future networks (ter Wal, Corbishley, Dodgson, & Gann, 2015). Focusing on the front-end of corporate discretionary ideation, and typically examined under conditions of relative stability of the organization (e.g. economic prosperity and growth), the development of new ties is in favor of the structurally well connected.

In general, relational embeddedness benefits the creation of new linkages in the ideation network. Being well informed with new ideas makes it easier to reach out to others, making one an interesting party to get connected to (Burt 2004; Whelan et al. 2011). Prior experience in forging discretionary relations makes one capable to reach out informally on short notice, and positions someone as a potential candidate to get acquainted to as prior established relations provide informational benefits to the receiving party. The literature on social embeddedness suggest the extent of an individual’s social embeddedness to directly impact the circulation of information, the new combinations of ideas and the development of original insights (Stuart and Podolny, 1996; Granovetter, 2005; Whelan et al., 2011; Maggitti et al., 2013). Number of contacts available to an individual – a proxy for one’s relational embeddedness – positions such individual as a valuable gateway to new and original insights for instance (Bovasso 1996; Tsai
Those relationally well embedded in an organization’s ideation network thus can be expected to more easily link to others when deemed desirable. The larger the number of sources of ideas available to an individual, the likelier one is to encounter, combine and further develop new ideas (Ohly et al. 2010). The sheer number of ties an individual maintains relates to the ability to generate new ideas (Burt 2004; Bjork and Magnusson 2009; Ohly et al. 2010). Hence the following baseline hypothesis:

**Hypothesis 1a (baseline):** Relational embeddedness is positively related to the formation of new discretionary linkages in the ideation network.

**Relational embeddedness, discretionary ideation and the effect of individual level uncertainty**

Individual level uncertainty - defined as the extent of suddenly and forcefully being deprived of one’s discretionary relations - is a characteristic that strongly influences the future networking behavior of individuals. Subsequent changes in opportunity structure may profoundly reshuffle patterns of discretionary collaboration (ter Wal et al., 2015). Faced with individual level uncertainty in the form of the sudden and unforeseen crumbling of one’s discretionary ties, employees may adjust their interaction patterns to adapt to increased exogenously driven uncertainty within their firm (Salancik & Pfeffer, 1978; Tushman & Romanelli, 1983; Shah, 2000). Interestingly, little attention has been paid to the idea of formal organizational and managerial action as further constraints on the formation of one’s largely discretionary, informal ideation activity (McEvily, Soda, & Tortoriello, 2014). With individual-level agency mechanisms partially uncovered as drivers for individual network positioning, the
organizational conditions under which such agency occurs have remained largely disregarded (Parker et al., 2015). Individual network agency, however, can be regarded to be in some part exogenous to the individual—an environmental event to which the individual then actively responds; an observation also resonating in recent theorizing on social capital dynamics by Parker et al. (2015). Triggered by the suddenness by which organization change can unfold if management deems such intervention needed, social relations may get upset, offsetting short-term individual-level responses, as suggested by both uncertainty reduction and threat rigidity literatures (Staw, Sandelands, & Dutton, 1981; Berger, 1987; Berger & Calabrese, 1975; Contractor, Whitbred, Fonti, & Steglich, 2012; Srivastava, 2015). As individuals attempt to cope with suddenly enhanced individual level uncertainty they may be expected to generate distinct patterns of social capital activation, network literature suggests (ter Wal et al., 2015; Srivastava, 2015).

Although the exodus of well-connected employees may cause significant network disruption, network ‘shock’ can also create opportunities for individuals to increase one’s exploratory activities within the firm (Tzabbar & Kehoe 2014). Social embeddedness literature suggests those relationally well embedded to be better capable to thrive when conditions become more uncertain (Tushman & Romanelli, 1983; Coleman, 1988; Pescosolido, 1992, Kleinbaum, 2012). Uncertainty reduction theory, in turn, suggests employees to start more proactive communication as a way to reduce uncertainty in their task environment (Berger, 1987; Berger & Calabrese, 1975; Contractor et al., 2012). As individual level uncertainty increases, employees directly affected in their discretionary network will seek more frequent direct interaction to counter immediate social losses (Albrecht & Bach, 1997; Albrecht & Hall, 1991). The process of exchanging information lessens the perception of individual level uncertainty, thereby “tying
people closer together and promoting continued interaction” (Albrecht & Ropp, 1984, pp. 81). A sudden exogenous disruption of one’s discretionary social infrastructure hence can be expected to drive the prompt replacement of one’s initial ties to others within an organization if no other informational sources are available. For instance, prior work on identification during merger trajectories, as example of a corporate setting that displays managerially introduced exogenous shock, points out the importance of a sense of continuity in prior routines (Bartels, Douwes, Jong, & Pruyn, 2006; Knippenberg, Knippenberg, Monden, & Lima, 2002). Such continuity helps to reduce individual level perceptions of enhanced uncertainty and suggests individuals to quickly catch up with prior activity in the post event organization. As individuals pursue a sense of continuity, they seek consistency in past and future activity, quickly associating with the post event organization, reaching out to others (Bartels et al. 2006; Knippenberg et al. 2002; Paruchuri & Eisenman, 2012). Where the formal organization may be still up for permanent relational rearrangement, employees can directly express their individual desire to reduce uncertainty though an organization’s ideation network, given its discretionary and unsanctioned nature (Srivastava, 2015). Suddenly increased actor-level uncertainty therefore is expected to favor the relationally well connected in an organization’s discretionary ideation network as they forge new relations to discuss creative ideas for the future.

As organizational and relational ambiguity increases individuals may opt to behave differently, reevaluating their social infrastructure, leveraging their initial embeddedness in an organization’s network. As formal working relationships are disrupted, discretionary activity may become particularly eminent. As already observed in the early work of Tushman and Romanelli (1983) and echoed in the context of downsizing by Shah (2000), in response to increased uncertainty within their firm, employees adjust their interaction patterns and lean
towards discretionary communication with their immediate peers, generally avoiding engaging in unembedded interactions (Srivastava, 2015; Quintane et al. 2016). Enhanced actor-level uncertainty, the extent of losing one’s established ideation ties due to sudden exogenous shock, hence is expected to moderate the relationship between one’s initial relational embeddedness and the creation of new linkages within an organization in such a way that the positive impact of initial relational embeddedness on the creation of new linkages is stronger when actor-level uncertainty is higher.

This results in the following hypothesis:

**Hypothesis 1b:** Enhanced actor-level uncertainty (extent of suddenly disbanded discretionary ties) positively moderates the relationship between initial relational embeddedness and the creation of new discretionary linkages in the ideation network.

**Structural embeddedness and discretionary ideation**

Structural embeddedness encompasses the action of coordination across structural holes within an organization, with bridging connections amongst employees on opposite sides of such a hole, network brokers, the people who build such bridges (Burt, 1992; Granovetter 1973; Moran 2005). One’s betweenness benefits extend beyond those deriving from one’s local vantage point providing direct individual power, to include extended network benefits such as the bridging of structural holes (Mehra, Kilduff, & Brass, 2001). Not all employees are equally likely to help an organization exploit its existing knowledge (Paruchuri and Awate, 2016). Some resources may contribute more to the firm’s exploitation behavior than others, with individuals with ties across social divides found to gain non-redundant information concerning opportunities and resources (Burt, 2004; Mehra et al., 2001; Granovetter, 1973). Literature on the
psychological foundations of networks, for instance, suggest the structurally well embedded to be better capable to take on the uncertainties that come with new tie formation. Active self-monitoring, as commonly attributed to the structurally well embedded, suggest such individuals to be more alert and adaptive to situational cues (Mehra et al. 2001). Self-monitoring, in turn, is directly related to ongoingly scouting for behavioral motives and intentions of others, even within fleeting social exchanges (Oh and Kilduff 2008, Sasovova et al. 2010; Quintane et al, 2016). Individuals with higher initial levels of structural embeddedness in the discretionary ideation network of an organization thus may be expected to be more likely to create new discretionary linkages within the organization. Hence:

**Hypothesis 2a (baseline):** Structural embeddedness is positively related to the formation of new discretionary linkages in the ideation network.

**Structural embeddedness, discretionary ideation and the effect of individual level uncertainty**

Were relational embeddedness holds advantages of direct information inputs, structural embeddedness allows individuals to strategically diffuse knowledge, perhaps even in retribution to management (Burt, 1992; Obstfeld et al., 2005). The discretionary nature of the ideation network makes strong structural embeddedness particularly suitable as means to express a need to gather social cues that reach beyond one’s direct social environment. Fulfilling a strong betweenness position can seek to interrupt or steer the flow of information that spans the whole organization (Burt, 2015). Structural embeddedness holds information benefits that become particularly salient under conditions of enhanced individual level uncertainty. Distant allies can help to
unlock political influence and provide access to information and resources that can assist to mitigate one’s immediate loss of direct contacts (Tushman & Nadler, 1986; Brass & Krackhardt, 2012). While the intra-organizational network literature is shy of studies on the mitigating role of structural embeddedness on individual level uncertainty reduction, at the inter-firm level, Hallen (2008) identified founders’ indirect ties to lead to the formation of new ties, identifying structural embeddedness as a fruitful ground to counter uncertainty and to gauge for the legitimacy of a future partner when examining new partner selection. Indeed, indirect ties may improve the legitimacy of a network actor in the eyes of a potential partner because of the example set by the common partner (for inter-firm level network based evidence see; Galaskiewicz & Wasserman, 1989; Mizruchi & Galaskiewicz, 1993; Davis & Greve, 1997), making new tie formation less challenging. A reasoning that translates also to partner selection in the intra firm network. Talking about new ideas and future benefits signals commitment to the organization’s future by those engaged in such conversation and instills purpose to the individuals involved. To increase their sense of control and confidence, individuals may seek to counter job-related uncertainty through political influencing via more distant others (Ashford, 1988; Brass & Krackhardt, 2012).

Initial discretionary structural embeddedness, the degree of brokering activity within a organization’s ideation network, provides fruitful bedrock for the flow of nonredundant information, fueling talks about something new and providing the sender with original, non-redundant insights that hold value for political influencing (Granovetter, 1973; Brass & Krackhardt, 2012; Aalbers et al. 2016). Thus, those prior structurally well embedded in the organizations discretionary ideation network become persons of interest for those seeking to counter job-related uncertainty. The incentive to forge new discretionary ties by the sender may be heightened as individual level uncertainty increases. Higher levels of uncertainty increase the
desire to reach out to others one did not hold contacts with before to reaffirm one’s potential to act as informal broker within the organization. Combining arguments from network theory and the uncertainty reduction literatures, the extent of losing one’s established direct ideation ties due to exogenous shock is expected to positively moderate the relationship between initial structural embeddedness and the creation of new linkages in the ideation network in such a way that a positive impact of initial structural embeddedness on the creation of new discretionary linkages is specifically present when actor-level uncertainty is high. At high individual level uncertainty, those that are structurally well embedded are most likely to start exploring for novel ideation ties, as opposed to those that are structurally poorly embedded. The former category saefors te informational benefits derived from prior structural embeddedness to forge new ties. When individual level uncertainty is low however, this latter category does not reach out to new contacts, banking on current informal brokering capacity to access new knowledge domains when desired. Thus I pose the following:

**Hypothesis 2b:** Enhanced actor-level uncertainty (extent of suddenly disbanded discretionary ties), positively moderates the relationship between initial structural embeddedness and the creation of new discretionary linkages in the ideation network.

3. DATA AND METHODS

3.1 Sample and Procedure. The opportunity to establish the empirical value of the above arguments is provided by fieldwork data collected on relations among employees engaged with ideation at the headquarters of Alpha Corporation in the context of a sudden but substantial downsizing event. The corporate restructuring literature provides various examples of managerially engineered shocks to an organization’s operations, with corporate layoffs as one of
the most direct managerial instruments to affect a firm’s labor force composition to improve operational effectiveness (Ocasio, 1995; Mellahi & Wilkinson, 2010). Management often has a deep-seated belief that downsizing increases organizational efficiency and performance (Ocasio, 1995; Mellahi & Wilkinson, 2010; Basuil & Datta, 2015). Downsizing, however, also has been found to exogenously and abruptly trigger individual level uncertainty as social relations suddenly falter due to employees forcefully parting with the firm (Datta, Guthrie, Basuil, & Pandey, 2010; Shah, 2000; Mellahi & Wilkinson, 2010). Discretionary ideation activity amongst those remaining has been suggested to crumble under such conditions (Cascio, 1993; Amabile & Conti, 1999; Mellahi & Wilkinson, 2010). Downsizing provides a prominent trigger for individual level agency as some employees get more directly affected than others as their direct social environment falters – making it fitting to the research scope of this study (Shah, 2000; Datta et al., 2010; Mellahi & Wilkinson, 2010). At Alpha Corporation, the Dutch chapter of an international information technology service provider with a major focus on developing cutting edge infrastructure for financial service providers, downsizing unfolded abruptly. The company had not been exposed to comparable restructuring activity in the prior years – but dwindling profitability and increasing market consolidation amongst its competitors forced management now to act on short notice. In contrast to - rather scarce - earlier network studies that link downsizing to network behavior in knowledge extensive settings (e.g. Shah 2000), Alpha Corporation is characterized by its knowledge intensity and strong focus on innovative solutions for its customers. The company holds a leading position in the market for secure payments and card processing, matching financial services with the most recent advancements in biometrics and wireless mobile technology. Alpha Corporation has continuous innovation taking central stage in the operations of the firm. The company is organized along classical functional groups,
such as IT, Operations, Marketing and Sales, but encourages close collaboration across these various fields of expertise as engine for new business development. The firm’s senior new business development manager brokered access to the firm.

Network data and additional qualitative contextual data were collected before and after a major corporate downsizing event – a unique and unforeseen occasion. The downsizing followed a top-down approach, conducted in cooperation with a strategic change advisory, and unfolded over a period of 6 months, reducing the workforce by over 20%. Layoffs commenced a long period of organizational constancy, introducing corporate and social uncertainty as a relatively new phenomenon. Through a recurrent network survey data was collected at two time intervals focused on face-to-face, personal interaction. Although extant research identifies high correlation between emails sent to a small number of recipients and face-to-face communication (c.f. (Kleinbaum, Stuart, & Tushman, 2008), the most sensitive of interactions is expected to take place through face-to-face interactions (Srivastava, 2015). Compilation of the first network dataset (t=1) rendered the discretionary ideation network of the firm in the month prior to the network formal announcement of reorganization. The collection of the second dataset (t=2) took place directly after downsizing was carried out. Network measurement at t=1 took place 3 weeks prior to formal announcement of the downsizing at Alpha Corporation. In between measurements, a period of 6 months, the company executed the entire downsizing. Measurement at t=2 took place 2 weeks after going concern, with the company resuming regular operations with management fully tending to daily business. With an undefined boundary for the discretionary ideation network from the start, and conform common snowballing procedure, individuals were asked to report with whom they “exchanged new ideas, innovations and substantial improvements of relevance to the company that are not part of your usual day-to-day activities (Borgatti & Cross,
2003; Cross & Prusak, 2002; Rogers & Kincaid, 1981; Rodan, 2010; Aalbers, Dolfsma, & Koppius, 2013). With no maximum on the number of contacts respondents could enter, network
closure was found after two rounds of snowball sampling, reaching the boundary of the informal
ideation community at Alpha Corporation (Friedman & Podolny, 1992). Round one of this
network data collection approach rendered a response rate of 92%. The second round shortly
following the downsizing operation yielded a response rate of 78%. Response rates and data
access to a company in emediate turmoil largely benefitted from prior network research at Alpha
Corporation conducted by the author half a year prior to the event, resulting in trust and
increased understanding of the research method amongst respondents. 152 Individuals were
identified as part of the innovation community at either of these moments in time with 129
individuals represented in the network at both measurement instances, representing the subset
surviving the downsizing event and continuing with ideation post downsizing. Conform
downsizing literature terminology this faction is referred to as the downsizing survivors,
constituting the focal group of this study (Guthrie & Datta, 2008).

**Dependent variable:** Variables were collected as part of the network survey, either derived as
structural or attribute items. The dependent variable Newly formed ideation ties was measured as
the count of newly formed ideation ties corrected for the already existing ties constituting the
discretionary ideation community at t=1. Newly formed ties are thus operationalized as the
number of times someone is reported by others to have a relation with, corrected for the ties that
already existed at t=1.

**Independent variables:** Discretionary relational embeddedness: Relational embeddedness is
measured as the number of direct ideation ties maintained discretionary by an individual at
measurement 1 (indegree centrality) – measured following downsizing. An In-degree approach is
regarded as more reliable than the alternative deployment of a self-reported out-degree measure (Costenbader & Valente, 2003).

Discretionary structural embeddedness: Structural embeddedness is measured as one’s brokerage position in the whole discretionary ideation network pre downsizing, calculated as betweenness centrality. Betweenness measures the strategic importance of an actor by recognizing the importance of the geodesic paths between all actors involved in the total network. Betweenness centrality assesses the proportion of edge-independent paths that involve a given node, measuring paths in the network that would not exist if the particular node were not present (Borgatti & Everett, 2006). In other words, it provides a measure of how often a node in the ideation network of Alpha Corporation at t=1 is located on the shortest path between other nodes in the network, providing an indication of the control a node has over the diffusion of knowledge or information in the total network. I calculated this betweenness measure for each individual in the organization's discretionary ideation network prior to downsizing (Hanneman & Riddle, 2005; Wasserman & Faust, 1994).

Individual level network uncertainty (disrupted ideation ties). Measured as the number of exogenously disrupted direct ideation ties due to the laying off of the individual with whom actor maintained an ideation tie pre restructuring. The extent of disrupted ideation ties is measured as a ratio, reporting the fraction of ties that were forcefully disbanded (thus not reported anymore) at t=2 due to alter being required to leave the firm due to emediate layoff to the number of discretionary ideation ties at t=1.

Control variables: Functional membership controls for group affiliation effects (Shah, 2000). Tenure controls for the amount of time an individual has had to develop relations over the years
employed at Alpha Corporation as measured in years (Gundry, 1993; Shah, 2000). Department includes five functional departments coded as a factor. Hierarchy is included to control for one’s formal power base based on formal hierarchical rank as a proxy for access to company wide information and formal influence on resource flows (Ibarra, 1993; Baldridge & Burnham, 1975). Hierarchy is measured based on 5 hierarchical levels, increasing in level of managerial responsibility and accountability up to level 1. Additionally Gender is included as control, coded as a dummy variable with ‘0’ representing Female and ‘1’ representing Male employees.

3.4 Model Selection and Selection Bias Considerations.

As the dependent variable in this study takes the form of a count — here the number of newly created ideation ties taken on by an individual after downsizing — negative binomial modeling is fitting for hypothesis testing. A negative binominal model is applied as overdispersion in the data makes negative binominal modeling fit the data better over Poisson modeling. The negative binominal model was estimated using the statistical package MASS in R, version 3.1.

Causal inference on how downsizing affects the structure of an organization network is taken into account by introduction of a basic lag structure as downsizing precedes the observed network structure in time. When downsizing a company to the degree as observed in this study Dutch legal charter stipulates an equal representation of layoffs across functional and demographical categories within the firm. Infringement of this principle can lead to prosecution of the company in open court. This institutional context results in comparatively equal chances

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1 A goodness-of-fit test comparison made between the Poisson predictions for a model equivalent to Negative Binominal model 5 in Table 3 shows the Poisson model to fit the data very poorly indeed ($\chi^2 = 455.68, p = .000$). The distribution of the dependent variable (mean = 1.5, SD 4.22) suggests overdispersion in the data.

2 Social economical considerations form the backdrop of this legislation and may be different to layoff conditions encountered in most Anglo Saxon countries where selective firing based on managerial discretion is an option.
amongst employees to be assigned for layoff, implying a relatively random draw from the overall labor force as backed further by review of functional and tenure descriptives.

4. RESULTS

4.3. negative binomial regression results

Table 1 presents summary statistics and correlations on the variables reported in the negative binomial regression model. The results of negative binomial regression are presented in Table 2. Model 1 presents the effects of the control variables. Models 2–5 present the main effects of individual level network uncertainty, structural embeddedness and relational embeddedness on new ideation tie formation. Model 2 shows the degree of disruption of one’s discretionary ideation ties to predict formation of new ties, indicating the substituting of sudden damage to one’s social infrastructure. Model 3 and 4 show embeddedness – structural or relational that, viewed upon in isolation to explain new tie formation ($\beta = 0.04$, $p < .05$) and ($\beta = 0.97$, $p < .01$) respectively. Also when examined in combination with the degree of disrupted ideation ties (Model 5), both structural and relational embeddedness have a positive and significant effect on the formation of new ideation ties post downsizing, ($\beta = 0.05$, $p < .05$) and ($\beta = 0.96$, $p < .01$) respectively. This suggests those structurally well embedded in the ideation community prior to downsizing to be better positioned to reignite their discretionary ideation activities, reviving the company’s ideation network (in support of Hypothesis 1a and 2a).

Model 6 and 8 provide continue the evidence for the role of relational embeddedness as basis for reestablishing one’s ideation network, additionally showing a significant and positive interaction effect between degree of individual level uncertainty (amount of direct ties lost) and newly formed ties post downsizing, ($\beta = 1.46$, $p < .01$) and ($\beta = 0.71$, $p < .05$) respectively. Relative to model 5 log-likelihood ratio testing suggests a significant increase in the goodness-
of-fit of the model. Fig. 4 provides a graphical illustration of the observed interaction effect based on model 6.

As expected, this figure shows that as one’s level of uncertainty increases and one’s direct social environment crumbles, the positive relationship between initial relational embeddedness and new ideation tie formation becomes stronger. The model outcome indicates that the level of sudden individual network disruption, as proxy for individual level uncertainty, significantly affects one’s propensity for new ideation tie formation given prior relational embeddedness in the discretionary ideation network (Model 6). Disruption of one’s initial ideation ties reinforces the propensity for new tie formation for those that were already active in the ideation network prior to downsizing, as displayed by a stronger relational embeddedness. At high individual level uncertainty, those that are relationally well embedded are most likely to start exploring for novel ideation ties, as opposed to those that are structurally poorly embedded. When individual level uncertainty is low however, the relationally well embedded refrain from reaching out to new contacts. A finding in support of hypothesis 1b.

Regarding the moderating effect of individual uncertainty, model 7 and model 8 show that the interaction between structural embeddedness and individual level uncertainty – the degree to which one loses discretionary relations due to exogenous shock - is positive and significant ($\beta$ Model 7 = 19.13, $p < .01$, $\beta$ Model 8 = 23.14, $p < .01$). Also here, relative to model 5, a log-likelihood ratio test suggests a significant increase in the goodness-of-fit through both models. Model 7 and Model 8 thus suggest initial structural embeddedness in the discretionary
ideation network) also to favor the creation of new discretionary linkages in the ideation network than those lacking such brokering position. As hypothesised we find actor-level uncertainty to positively moderate this relationship. To plot this interaction, structural embeddedness and individual level uncertainty took the values of one standard deviation below (i.e. low level) and above (i.e. high level) the mean. The plot of the interaction is shown in Figure 2.

Consistent with hypothesis 2b, the plotted interaction term - based on Model 7 - shows a positive relationship between structural embeddedness and new tie formation when individual level uncertainty is high. Higher levels of uncertainty enforces the desire to reach out to others one did not hold contacts with before if one held a structurally well embedded position prior to downsizing. Moreover, this figure also suggests that those individuals structurally not so well embedded throughout the event, yet not exposed to conditions of high individual level uncertainty (i.e. losing few discretionary relations due to the downsizing as exogenous shock), to partake more in voluntary new tie formation. Hypothesis 2b is thus supported.

DISCUSSION

Over time knowledge recombination processes and communication flows of informal networks may get disrupted by formal organizational change, sometimes abruptly altering network dynamics (Paruchuri & Eisenman, 2012). When knowledge is removed, rearranged, or replaced through change, this represents the migration of critical knowledge that may have significant effects on innovation in the firm (Tzabbar & Kehoe, 2014). In the context of sudden network disruption, this
study makes two contributions to the literature on intra organizational networks. By providing a rare examination of an organization’s discretionary ideation network as it endures corporate downsizing, it advances understanding of how networks reconfigure inside organizations under conditions of enhanced individual level uncertainty.

First, by providing evidence of a link between an individual’s initial discretionary network embeddedness in relation to enhanced individual level uncertainty given sudden exogenous shock, its contribution is to network evolution research. This literature, has long been concerned about exogenous stimuli that trigger individual level network change (Paruchuri & Eisenman, 2012; Ahuja et al. 2012). The findings from this study suggest that enhanced individual level uncertainty – here due to an abrupt downsizing event – can, depending on one’s initial social embeddedness, have a positive impact on on one’s aptitude to establish new discretionary ideation relationships. Findings suggest the relevance of both relational and structural embeddedness as foundation for an individual’s determination to engage with future exploratory ideation. This view contrast with extant explanations in the network and downsizing literatures that suggest exogenous shock to cripple discretionary activity that would be of benefit to the innovative capacity of a firm altogether (Amabile & Conti, 1999; Shah, 2000; Datta et al. 2010; Cascio, 1993; Mellahi & Wilkinson, 2010). Intrapreneurial activity, here partaking in extra role ideation activity, reported findings suggest, is not lost altogether, but resides with those structurally and relationally well connected prior to the exogenous network shock. Individuals that are informally well embedded may be more inclined to take on new ideation ties as they endure higher degrees of uncertainty than less connected others, directly affecting the degree to which creative ideation continues within a firm as it endures corporate strain. This finding is of interest from an intra-firm ideation perspective as continuous ideation by individual employees forms the creative impetus to secure a firm’s future competitive advantage.
It also addresses a recent call to better understand the antecedents behind the differential contribution at the micro-level of the organization to a firm’s exploitative behavior from the strategic management literature (Paruchuri & Awate, 2016). This study provides insights in the micro-level conditions under condition of organizational turmoil, a pronounced condition that commonly follow exogenous driven intervention, nonetheless frequently discarded by network scholars whom twend to base findings on data gathered under relative stable organizational conditions.

Second, while innovation scholars have started to look into the discretionary nature that drives creative ideation, the nature of the ideation process itself largely remains uncharted territory (Harvey, 2014). Uncertainty reduction theory has long documented that enhanced uncertainty improves individuals’ tendency for interpersonal communication. Reaching out to others forms a means of uncertainty reduction, under direct control of the individual involved, reducing cognitive stress and enhancing information alternatives (Berger & Calabrese, 1975; Goldsmith, 2001; Turner and West, 2010). However, little is known how individuals behave over time and in relation to the behavior of others faced with (a)similar individual level changes. This study shows that one’s relational and structural embeddedness are predictive of the creation of new ideation ties when individuals face sudden change in their discretionary network. These findings underwrite the relevance of social embeddedness as foundation for an individual’s future exploratory ideation under conditions of enhanced individual level uncertainty. Consequently, findings from this field experiment allow us to isolate the notion of individual level uncertainty reduction on discretionary ideation activity as networks evolve under organization turmoil in time.

This study helps to draw a more precise picture of the organization network factors that determine the resilience of a firm’s creative capacity in a corporate environment that appreciates
innovative capacity as the basis for competitive advantage. As corporate restructuring is a widely-used lever of organizational change which operates, in part, through its effect on discretionary organizational networks, findings on how to reignite the spark of creativity after drastic intervention have important implications for organizations. Next to theoretical implications, the findings hold practical consequence as insights feed management with the ability to more effectively design future intervention – such as a downsizing event – in a manner that is cognizant of future propensity for discretionary ideation.

**Limitations**

These results show that sudden exogenous managerial intervention may hamper creative activity, but in contrast to prior understanding of downsizing events, suggests that not all are equally negative affected. Findings instead suggest that social embeddedness characteristics may be beneficial to renewed ideation activity in the wake of a downsizing event. Nonetheless other potentially complementary interventions could simultaneously help organizations reignite ideation activity, for instance dedicates task forces or external consultancy inputs to reignite ideaion within a firm. Although such additional interventions simply did not occur at Alpha Corporation at the time of study, future research may consider combined effects of alternative exogenous interventions intended to affect discretionary activity within an organization. Such insight may help organizations to recoup from organizational turmoil more quickly, regenerating the full creative capacity available within an organization as grounds for future competitive advantage.

**LITERATURE**


Kilduff, M., & Brass, D. J. (2010). Organizational social network research: Core ideas and key debates. The Academy of Management Annals, 4(1), 317-357.


Table 1: Descriptive Statistics and Correlation Coefficients.

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<th>4</th>
<th>5</th>
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Table 2: Results negative binomial regression with number of new ideation ties post downsizing (t=2) as dependent variable.

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*** p < 0.001, ** p < 0.01, * p < 0.05

a Compares model 2, 3, 4 and 5 to model 1; model 6, 7 and 8 to model 5.
Figure 1: interaction term between relational embeddedness and new tie formation given individual level of uncertainty (ties lost ratio)

Figure 2: interaction term between structural embeddedness and new tie formation given individual level of uncertainty (ties lost ratio)