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A Matching Theory of Entrepreneurs'
Tie Formation Intentions and Initiation
of Economic Exchange

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by
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Abstract

This study advances our understanding of network dynamics by applying matching theory to examine entrepreneurs' intentions to add new ties to their personal network. I propose that task complementarity and social similarity are important matching criteria that influence entrepreneurs' interpersonal tie formation intentions, and test whether good matches increase the likelihood of initiation of economic exchange ties. The novel research design using data from business cards of new people met by a panel of Indian entrepreneurs reveals effects of matching and suggests that while entrepreneurs intentionally pursue valuable connections they may be only partially accurate in their assessment of value.

Keywords: entrepreneurship; personal networks; tie formation; India; planned behavior

A core finding in the literature on entrepreneurial networks is that success depends, in part, on being well connected. The intuition is that an entrepreneurs' position in a social network determines access to potentially valuable resources (Aldrich, 1999). Research in this area has focused mainly on how the structure and quality of entrepreneurs' *existing* interpersonal ties shape information access and thereby influence outcomes such as capability acquisition (McEvily & Zaheer, 1999), venture launch (Davidsson & Honig 2003), or venture growth (Vissa & Chacar, 2009). A few studies examine *new* tie formation as the behavioral outcome of a referral from existing ties (Shane & Cable, 2002) or due to mutual attraction fostered by similarity (Ruef, Aldrich, & Carter, 2003), but these studies treat the intentions of the actors involved as a "black box". In essence, while this literature sheds light on the performance consequences of existing ties and behavioral aspects of new tie formation, it implicitly assumes entrepreneurs are non-strategic actors that do not *intentionally* pursue valuable new connections (Stuart & Sorenson, 2007).

Filling the gap in our knowledge about the drivers of entrepreneurs' intentions to build new interpersonal ties and about the behavioral consequence of such intentions is important for two reasons. First, understanding how entrepreneurs assess which new people they would like to build a tie to—as well as the accuracy of such assessment—would partially address Stuart and Sorenson's (2007) cogent critique. Entrepreneurs often convert interpersonal ties into economic exchange ties (Larson & Starr, 1993) that are crucial for venture growth and survival (Baum, Calabrese, & Silverman, 2000; Hite & Hesterly, 2001; Venkataraman & Van de Ven, 1998). Therefore, evidence that accurate screening of new people enhances the odds of new economic exchanges would indicate that entrepreneurs are more properly conceived of as strategic actors that maneuver themselves into advantageous network positions. If entrepreneurs are indeed strategic, then much prior research on the benefits of being well connected is theoretically misspecified.

Second, given the combination of high uncertainty and large economic payoffs that typifies their setting, entrepreneurs face a key tension in adding new interpersonal ties. Uncertainty may lead entrepreneurs to connect to socially similar others because similarity fosters attraction (McPherson, Smith-Lovin, & Cook, 2001) and thus trustworthiness (Brewer, 1979). Yet the promise of large payoffs might impel entrepreneurs to connect even with socially *dissimilar* others that represent a significant task complementarity. Task complementarity refers to the extent of overlap between entrepreneurs' current task priorities and the resources potentially available from a new person. The tension between social similarity and task complementarity is likely to be most evident when they conflict – such as when an entrepreneur has to choose whether or not to try to build a tie to a new person that is very high on social similarity but very low on task complementarity.

More broadly, entrepreneurial networking is an appropriate domain to contribute to the theory of planned behavior (Ajzen, 1991) that posits intentions as the primary driver of specific behaviors. Research from this perspective shows the tight link between intentions and behaviors of the focal actor (ego) for tasks—such as voting, dieting, and gift giving—that are driven mainly by ego's motivational factors (see Sutton, 1998, for a review). However, there is less evidence for tasks, like tie formation, that require the voluntary cooperation of the other actor (alter). Illuminating how ego–alter interdependence affects intentions is a contribution to the planned behavior perspective. In sum, clarifying the criteria driving entrepreneurs' intentions to form new interpersonal ties as well as their behavioral consequences in terms of formation of economic exchange ties would contribute to the literatures on entrepreneurship, homophily and planned behavior.

I aim to make these contributions by asking two related questions: Conditional on having interacted with a new person, what criteria determine entrepreneurs' intention to subsequently build a tie to that new person? What are the economic consequences of such tie formation intentions? I answer these questions by using matching theory – which was originally developed

to examine employer-employee matching in labor markets (Jovanovic, 1979; Logan, 1996; Simon & Warner, 1992) and has been more recently applied to the formation of interorganizational alliances (Mitsuhashi & Greve, 2009). According to this theory, actors enter into matches voluntarily when they estimate net positive benefits. Match criteria include not only observable attributes but also signals of unobservable attributes; in the presence of search cost, realized matches are not necessarily optimal. Observable criteria used in labor market applications of matching theory include employees' skills as well as employers' job needs and selection processes.

I propose that both social and task features are important match criteria used by entrepreneurs. In particular, I identify social similarity and task complementarity as relevant match criteria and specify that entrepreneurs judge match quality as a function of the direct and interaction effects of these criteria. This study contributes to matching theory by identifying relevant match criteria in an entrepreneurial context and estimating their joint effects on actors' behaviors *and* on their intentions—a novel application of the matching perspective. The first implication of matching theory I test is that realized matches, although not necessarily optimal, will have a good fit with respect to observable criteria. Specifically, I examine how match quality predicts an entrepreneur's *intention* to form an interpersonal tie to a new person with whom the entrepreneur interacts. Another implication of matching theory is that the benefits of matching are stochastically distributed with a positive mean. I test this prediction by examining an important economic benefit of matching: the formation (or not) of an exchange relationship between the focal entrepreneur's venture and the new person's organization.

Recent work on entrepreneurial networks examines how the focal entrepreneur's actions, such as symbolic behaviors (Zott & Huy, 2007) and networking styles (Vissa, 2009), drive the formation of exchange relationships. However, these findings provide limited guidance to entrepreneurs interested in selecting promising new network contacts from the stream of new people they encounter. In contrast, matching theory focuses on *whom* entrepreneurs try to

connect with. Because entrepreneurs use their personal networks to form new economic exchanges, match quality in interpersonal tie formation intentions determines the focal venture's selection of an exchange partner—a point that has not received sufficient attention in the literature.

I tested the conceptual framework by using a novel longitudinal research design set in the knowledge-intensive sector of the Indian economy. Contemporary India is a cultural mosaic with significant ethnic (caste) and regional (language) diversity (Khilnani, 2003; Srinivas, 2002), and its legal and regulatory institutions that underpin effective markets are comparatively less developed (Chacar & Vissa, 2005; Khanna & Palepu, 1997). Yet India is also an emerging technology powerhouse driven largely by entrepreneurial firms. These features make it an appropriate empirical context for examining the joint effects of social and task factors on tie formation intentions and initiation of economic exchange.

THEORY AND HYPOTHESES

Entrepreneurs' Personal Networks and Resource Assembly

The entrepreneurial network perspective views personal networks as the conduit for the flow of relevant, valuable resources from alters to the focal entrepreneur (Aldrich, 1999). Personal network refers to the set of individuals (alters) with whom the entrepreneur (ego) has direct interpersonal relations and the relations between alters (Aldrich & Zimmer 1986). Research on entrepreneurial networks mainly focuses on how the structure and quality of *existing* network ties influence performance outcomes such as success in launching a new venture (Davidsson & Honig 2003), venture growth (Vissa & Chacar 2009), acquiring competitive capabilities (McEvily & Zaheer 1999) and other resources (see Hoang & Antoncic (2003) for a comprehensive review).

The few studies that examine *new* interpersonal tie formation in entrepreneurial networks emphasize two different causal explanations. The first explanation (termed tie transitivity)

accords primacy to pre-existing social structure by suggesting that formation of new interpersonal ties is a function of prior interpersonal ties. The causal mechanism is a referral process (Cartwright & Harary, 1956) whereby the founder's personal network contact (the referee) connects him to a new network contact. The referral is valuable to the focal entrepreneur because it provides access to and better information about the new contact and because it leads to accelerated trust formation. The evidence suggests entrepreneurs use referrals from existing network contacts to reach new contacts that provide them with valuable resources such as business advice (Baker et al. 2003), seed stage funding (Shane & Cable, 2002) and reliable supply (Uzzi, 1997). In contrast, the second mechanism explains new tie formation without invoking tie transitivity. The essence of the argument is that similarity (homophily) of two individuals leads to mutual attraction and trust and consequently new tie formation. Thus Ruef et al (2003) show that homophily is a strong driver of tie formation in the sense that multi-ethnic founding teams were significantly rarer than mono-ethnic founding teams in a representative sample of new ventures in the United States.

Although the homophily argument implies entrepreneurs are less constrained by their pre-existing ties, this explanation is silent on how *dissimilarity* might matter for new tie formation. In addition, extant research advancing both the tie transitivity as well as the homophily explanations examines only the new ties that are actually formed and treats as a 'black box' the intentions of the individual actors involved. This limits our understanding on the extent to which entrepreneurs are strategic actors that maneuver their way into advantageous network positions (Sorenson & Stuart, 2007). Hence, unpacking the steps that eventually culminate in the initiation (or not) of economic exchange ties becomes crucial to address Stuart and Sorenson's (2007) persuasive critique.

A Matching Model of Tie Formation

This study opens up the black box by exploiting Ajzen's (1991) insight that individuals' intentions provide a strong basis for explaining behaviors that require at least some

premeditation. Ajzen's planned behavior framework stipulates that attitudes, subjective norms, and behavioral control factors determine intention, which is the immediate antecedent of behavior. Attitude refers to a person's disposition toward a behavior and subjective norms refers to the social pressure to perform (or not) a given behavior; both of which are treated as 'ceteris paribus' conditions and are not the objects of theorizing in this study. The theorizing in this study focuses on behavioral control factors which refer to variables that affect a person's perception of the ease or difficulty of performing a behavior. Specifically, as detailed below, the behavioral control factors examined in this study are obtained from a matching theory perspective.

Empirical research applying the planned behavior approach has mainly examined actions whose achievement is less dependent on the cooperation of other people. Thus, Sutton's (1998) review of nine meta-analyses of studies using the planned behavior approach suggests significant effect sizes for the drivers of intention as well as actual behavior for actions such as voting, dieting, job search, cheating etc. To the best of my knowledge there is no prior work that examines entrepreneurs' tie formation actions—which, unlike the actions studied in prior research, require the cooperation of the new person with whom the focal entrepreneur would like to form a tie.

Entrepreneurs encounter a swirling mix of economic agents (Padgett, Doowan Lee, & Collier, 2003) in a context of high uncertainty; they try to build ties to some of the new people they encounter and not others, keeping in mind their professional goals. Ajzen's (1991) framework implies an entrepreneur's selection of a particular person to try to build a tie to would be driven by the entrepreneur's perceived ease of initiating tie formation behaviors to that person. This study argues that social similarity and task complementarity are observable matching criteria that influence an entrepreneur's perceived ease of initiating tie formation behaviors because they enable the entrepreneur to assess a new person's motivation to engage in exchange. Clearly, the exact same matching logic also applies to the new person's decision about whether or not to build a tie to the focal entrepreneur. Thus, initiation (or not) of a new economic

exchange tie can be conceptualized as the joint outcome of the tie formation intentions and behaviors of two “Ajzen actors” who apply their respective match criteria to select-in (or select-out) the other. This reasoning leads to a two-sided Ajzen actor model as shown in Figure 1, which illustrates how matching by entrepreneur (ego) and new person (alter) would lead, respectively, to tie formation intentions and initiation of economic exchange.

[INSERT Figure 1 about here]

Three points highlighted by Figure 1 are noteworthy. First, a matching theory approach enables us to address how the main effects of both similarity and dissimilarity (here complementarity) as well as trade-offs between them may matter for tie formation efforts. Second, task complementarity - which captures the overlap between focal actor’s task priorities and resources potentially available from the other actor, is a match criterion that could in principle differ from ego’s versus alter’s perspective based on their respective task priorities. Third, ego’s match criteria will have greater predictive power while modelling ego’s tie formation intentions as compared to modelling the initiation of economic exchange since the latter outcome is in part, dependent on alter’s tie formation intention choice and its drivers, which were not observed in this study’s research design. I now turn to developing detailed arguments on how the match criteria of social similarity and task complementarity (from ego’s perspective) shown in Figure 1 influence entrepreneurs’ tie formation intentions.

Social Similarity as a Matching Criterion

Individuals prefer to connect with others who are like themselves along socio-demographic attributes for two reasons (see McPherson et al., 2001 for a review). First, similarity improves the odds of creating a trusting working relationship because individuals tend to group themselves with others on the basis of objective attributes such as race, age, and occupation (Turner, 1987) and individuals are more likely to perceive out-group members as dishonest, untrustworthy, and uncooperative than to perceive in-group members this way (Brewer, 1979). In addition, research shows that individuals tend to translate self-perception on one trait (e.g. perceived membership in

a group) into a comparable selectivity of partners on the same trait (Buston & Emlen, 2003). The second reason that social similarity matters for tie formation intentions is ease of communication. A focal individual may want to form a tie to a similar other because communication is easier due to common knowledge, vocabulary, attitudes, and world view (Huston & Levinger, 1978; Rogers & Bhowmik, 1970).

Research on homophily (McPherson et al., 2001) distinguishes between similarity that is based on ascribed attributes (which are largely inherited) such as race, ethnicity, or gender and similarity based on achieved attributes such as occupation or education. However, homophily theory leaves unspecified the precise attributes along which similarity matters in a given setting, leaving it to the researcher to stipulate the relevant attributes based on the study context. In the context of entrepreneurial networks, prior research examining the effect of social similarity has largely been studied under the rubric of ethnic / immigrant entrepreneurship in the United States (see Aldrich & Waldinger, 1990 for a review).

The setting of this study is India, an extremely multi-ethnic and multilingual society (Khilnani, 2003; U.S. Library of Congress, 2004). For example, the 2001 Census of India reports more than 2,000 different subcategories of caste and 29 different languages spoken by more than a million native speakers. In the context of this study, the two salient ascribed characteristics are position in the caste system and language, two sociodemographic dimensions that are important elements of stratification in Indian society (Gist, 1954; Olcott, 1944; Srinivas, 2002). The caste system is defined as a status hierarchy of endogamous groups that individuals enter only by birth (Olcott, 1944; Srinivas, 2002). Indian caste subcategories (termed *jati*) are usually classified into five broad groups (termed *varna*) (Srinivas, 2002): priests (*Brahmin*), warriors (*Kshatriya*), merchants (*Vaishya*), peasants (*Shudra*), and untouchables (*Dalit*). As outlined in the next section, caste-based homophily in India is theoretically analogous to the ethnicity-based homophily documented among immigrant entrepreneurs in the United States. Finally, the salient achieved characteristic in this setting is similarity of occupation. The focal entrepreneur and the

newly encountered person are occupationally similar when the new person is also an entrepreneur. India is experiencing considerable entrepreneurial activity in knowledge-intensive sectors, so this setting offers a salutary counter to what may be the field's overreliance on North American or European samples when researching entrepreneurial networks.

Similarity on ascribed attribute: Caste. Given the pervasive uncertainty surrounding new ventures, trust is an important issue for entrepreneurs assembling resources through their network ties (Granovetter, 1995). The ethnic entrepreneurship literature documents two reasons why trust between in-group members may be greater for immigrant communities in the United States and may thereby facilitate tie formation and resource assembly by entrepreneurs drawn from those communities. The first reason, termed 'bounded solidarity' by Portes and Sensenbrenner (1993) refers to tie formation and resource flow based purely on common group membership because the resource-holder's action is driven by a moral imperative to help a fellow co-ethnic. The second reason identified by Portes and Sensenbrenner (1993) as 'enforceable trust' on the other hand deals with instrumental fear of loss of reputation, whereby a resource-holder forms a tie with the focal entrepreneur based on instrumental reasons of expected economic pay-off in transacting (or not) with a co-ethnic. Kalnins and Chung (2006) provide systematic evidence of both mechanisms. They show that immigrant entrepreneurs from Gujarat, India participating in the Texan motel industry helped each other with tangible resources (e.g. cheap supplies and second hand assets) as well as intangible resources (e.g. valuable trade related advice and information) even in the absence of prior direct or indirect (i.e. referral) ties. Further, Aldrich and Waldinger (1990) review mainly qualitative studies that provide thick descriptions of these mechanisms among other ethnic groups such as Chinese, Korean and Japanese immigrant entrepreneurs in the United States.

Caste based groupings in the context of this study are theoretically similar to ethnicity based groupings studied in the ethnic entrepreneurship studies in the United States. So we should expect similar patterns of more within-caste group tie formation intentions and exchange than

between-caste groups, especially given that greater within-caste group trust might substitute for lengthy and expensive court proceedings because of poorly developed legal institutions in India (Khanna & Palepu, 1997). Ethnographic evidence suggests that caste homophily is indeed important in economic exchange in traditional sectors of the Indian economy and identifies trust engendered by cohesive intra-caste ties (Coleman, 1990; Portes & Sensenbrenner, 1993) as the mechanism. For example, Menning (1997) reports that textile industry entrepreneurs in Surat, India, were more likely to form inter-firm exchange ties with others of the same caste than with outsiders. Similarly, Rudner (1994) shows how entrepreneurs from the “Chettiar” merchant caste of South India built a significant trading and banking network across Southeast Asia during the inter-war period by leveraging their common caste membership. More broadly, Encarnation (1989) outlines the importance of caste homophily in Indian business groups. Despite rich ethnographic accounts of the importance of caste in economic exchange in traditional sectors, we don’t know if this generalizes to high technology / knowledge intensive sectors and further we lack systematic evidence for caste based homophily in network tie selection. Hence, I propose the following testable hypothesis.

Hypothesis 1 (H1): An entrepreneur is more likely to have intentions of forming an interpersonal tie with new people who are from the same caste.

Similarity on ascribed attribute: Language. A second important ascribed attribute is the language in which entrepreneur and new person communicate. Language diversity is a prominent feature of many important economic settings. For example, the European Union officially recognizes 22 languages and the Indian government recognizes 23. In such settings, English is often used as the “working language” through which different language groups communicate, even though it may be a foreign language to all the parties involved.

Evidence from team research points to the challenges associated with the use of English as a working language in multilingual settings. Using English as a second language can mask subtle differences in the parties' intended meanings. For example, in a study on language diversity in international management teams, Henderson (2005: 75) notes that even when a single "surface" language is being used for communication, team members continue to use diverse interpretive mechanisms derived from their respective native languages.

More broadly, the sharing of language and codes (Nahapiet & Ghoshal, 1998) is an aspect of social embeddedness that is often taken for granted. Entrepreneurs who are able to communicate in the language of the new contacts they meet find it easier to establish that they share the same norms, values, and taken-for-granted cultural assumptions. In contrast, only the most basic conversation is possible between two individuals who share a limited language facility, and this fact inevitably constrains the possible depth of information and knowledge exchange. In other words, communication is easier and more efficient when the entrepreneur and new person share a language they both know well. Furthermore, speaking in the native language of the new person is an important symbolic management action (Zott & Huy, 2007) in multilingual settings, an action that entrepreneurs could plausibly use to signal their similarity with the new person.

All these arguments suggest that entrepreneurs may want to form new ties with those who are fluent in the same language. Prior qualitative research on ethnic entrepreneurship has shown that lack of English skills prevents tie formation across language boundaries for first-generation immigrant entrepreneurs in the United States (Aldrich & Waldinger, 1990). But this research has not documented variation in tie formation intentions of ethnic entrepreneurs that had English language skills. In short, there is little systematic empirical evidence on language homophily in entrepreneurial networks. I therefore propose:

Hypothesis 2 (H2): An entrepreneur is more likely to have intentions of forming an interpersonal tie with new people who speak the same language.

Similarity on achieved attribute: Occupation. Prior research first identified similarity of occupation as an important criterion in expressive relations such as friendship formation (Verbrugge, 1977). There are two reasons why occupational similarity likely matters for new tie formation intentions, even in economic settings. First, individuals that are occupationally similar are likely to have similar professional interests and hence tend to congregate around similar foci (Feld, 1982), making it more likely that they meet and want to form ties. Second, occupationally similar individuals also find it easier to communicate with each other because of their shared professional and career experiences.

There is little prior work examining occupational similarity in an entrepreneurial context. However, recent qualitative research by Zott and Huy (2007) suggests that ease of communication makes it easier for entrepreneurs to access resources from resource holders who are also business founders. Although theory predicts that occupational similarity matters for tie formation intentions in entrepreneurial networks, there is no systematic evidence to this effect. Hence I propose the following hypothesis.

Hypothesis 3 (H3): An entrepreneur is more likely to have intentions of forming an interpersonal tie with new people who are also business founders.

Task Complementarity as a Matching Criterion

Because new ventures have less-developed organizational routines and structures, it's likely that entrepreneurs have more discretion than top management teams of established firms in defining their tasks and in allocating their time and attention (Hambrick & Abrahamson, 1995). Moreover, the uncertainty that is characteristic of new venture settings implies the flow of specific issues

(Barnard, 1938) confronting entrepreneurs is likely different even for ventures at the same stage of organizational development (Kazanjian, 1988). All else equal, the fluidity of issues combined with greater discretion in response implies considerable variation in entrepreneurs' task priorities.

There are two reasons why this variation in the structuring of task priorities has implications for the focal entrepreneur's intention to form a tie with a new person. First, due to bounded rationality decision makers engage in problemistic search (Cyert & March, 1963) by looking for solutions in the proximity of the perceived problem. This means that a focal entrepreneur will prefer trying to form ties with new people who could potentially provide resources that match her current task priority areas and will not seek to form ties with all the new people she encounters. The second, related reason is the budget constraint in forming new ties. Given that the time and energy available to form new ties is limited (Burt, 1992: 273), entrepreneurs will prefer trying to form ties with new people who match up well with their current task requirements. Both these explanations suggest that an entrepreneur is more likely to pay attention to new people with greater task complementarity—that is, to those who are from organizations that are role-congruent with the entrepreneurs' current priority areas. For example, an entrepreneur whose current task priority concerns market penetration will more likely pay attention to newly encountered individuals who are from potential customer organizations. More formally, I propose the following hypothesis.

Hypothesis 4 (H4): An entrepreneur is more likely to have intentions of forming an interpersonal tie with new people who have greater task complementarity

Task Complementarity as a Moderator of Social Similarity

Thus far, I have argued for the main effects of the two match criteria on entrepreneurs' tie formation intentions. One straightforward implication of this argument is the likely consequence when match criteria reinforce one another. Specifically, the joint occurrence of ease of

communication and greater trust (caused by greater similarity) and opportunity to work together (caused by greater task complementarity) should increase the odds that a focal entrepreneur intends to form an interpersonal tie with those socially similar new persons who also have greater task complementarity. A more interesting issue is how entrepreneurs' trade off these match criteria when the two are in conflict.

Recent research suggests that, even in instrumental settings, social aspects overwhelm rational task considerations in the formation of interpersonal ties. Thus, Casciaro and Lobo (2008) argue that employees within established organizations select partners for task interactions based on their liking of that person, rather than on task appropriateness. Applied to the context of this study, the implication is that social similarity, which leads to liking and mutual attraction, likely trumps the effects of task complementarity. However, unlike employees within established organizations, entrepreneurs face high-powered incentives (Williamson, 1985)—which is to say that, all else equal, choices in allocation of networking efforts lead to more significant effects on financial payoffs for entrepreneurs than for employees. I argue below that entrepreneurs' natural tendency to want to form new ties to homophilous others is counterbalanced by task considerations because their high-powered incentives act as a kind of dampening device.

Consider the case where an entrepreneur encounters a new person who is similar socially but has low task complementarity. Social similarity leads to lower communication costs and lower transaction costs, but low task complementarity means that there is much less opportunity to meaningfully collaborate and hence that the possible gains are lower. Thus, the net benefits of forming a tie are less and, given the high-powered incentive structure, the focal entrepreneur's tie formation intentions are attenuated. The same logic when applied to the symmetrical situation of very low social similarity and very high task complementarity implies entrepreneurs' tie formation intentions will be enhanced. More formally:

Hypothesis 5 (H5): The positive (negative) effect of very high (very low) social similarity on entrepreneurs' tie formation intentions will be weakened when task complementarity between entrepreneur and new person is very low (very high)

Initiation of Economic Exchange

Formation of new economic exchange ties is an important outcome in the context of this study, since adding exchange partners is critical for the survival and growth of new ventures (Baum et al., 2000; Hite & Hesterly, 2001; Venkataraman & Van de Ven, 1998). Although the formation of new economic exchange relationships results from a wide range of individual, organizational, and environmental factors, one research stream examines the impact of individual characteristics. This literature has examined how pre-existing interpersonal ties between founders and resource holders influence formation of the exchange relationship between new ventures and professional investors. Thus Shane and Stuart (2002) find that new ventures whose founders had direct or indirect ties to investors were more likely to secure venture capital funding, although Hallen (2008) reports that this effect decreases with venture age. Likewise, Shane and Cable (2002) show that prior network ties between founders and seed-stage investors positively influenced the latter's decision to fund the new venture—although this effect was mediated by founders' reputation in that highly reputed founders did not depend on their network connections to secure funding. In essence, this literature suggests entrepreneurs' interpersonal ties lead to the formation of economic exchange relationships.

In this paper I extend this stream of research by examining how *new* interpersonal tie formation efforts by entrepreneurs influence economic outcomes. Specifically, no research has empirically examined the impact of matching in interpersonal networks on objective measures of interfirm relationship formation. Testing effects on organizational performance outcomes (e.g., the formation of an interfirm exchange relationship) is important because a comparison of the findings on *interfirm* tie formation with those on *interpersonal* tie formation intentions helps

clarify whether the criteria that drive entrepreneurs' interpersonal tie formation intentions reflect actual drivers of performance. Given the complexity of predicting interfirm consequences of interpersonal tie formation intentions and given the constraints that entrepreneurs face in finding appropriate alters who match up well along multiple criteria, entrepreneurs may end up using poor matching criteria, which may lead them to form new interpersonal ties that are not effective from an economic standpoint. Even though Nohria (1992) provides anecdotal evidence of a positive association between interpersonal matching based on mutual attraction (termed "chemistry" in that study) and qualitative measures of interfirm tie formation, it is still necessary to show systematically that this effect is influenced by the quality of interpersonal matching and to provide objective evidence of interfirm tie formation.

When a focal entrepreneur acts on his or her tie formation intentions (Ajzen, 1991) and initiates behaviors to build a relationship with those new people that he or she wanted to form a tie to, those actions will be reciprocated only by a *subset* of the target individuals: those who also find collaborating with the focal entrepreneur beneficial. In other words, as evident in Figure 1, only some of a focal entrepreneur's interpersonal tie formation intentions will be subsequently realized as actual joint interactions. There is a gap between intention and the actual interaction behavior (Ajzen, 1991) because the new person may decide not to reciprocate. The reasoning put forth for the previous hypotheses suggests that this sub-set of new people are likely to have a good match on social or task characteristics with the focal entrepreneur. Better match quality on social characteristics between focal entrepreneur and new person implies greater mutual attraction which leads to greater mutual concessions while negotiating (Griffin & Sparks, 1990; Thompson, 2005: 131) and hence increased odds of initiating an economic exchange tie. Likewise, better match on task complementarity between focal entrepreneur and new person increases the odds of a successful bargaining process because shared goals (a correlate of greater task complementarity) facilitates successful negotiation (Thompson, 2005: 130). Both these arguments suggest successful initiation of an inter-firm economic exchange relationship between

the focal entrepreneur's venture and the organization represented by a new person when the focal entrepreneur and new person are well matched. Put another way, better-matched interpersonal ties increase the odds that an economic exchange relationship will be formed. Thus, I predict as follows.

Hypothesis 6 (H6): Greater fit between entrepreneur and new person on the match criteria improves the odds of the entrepreneur initiating an economic exchange relationship with the organization represented by the new person.

METHODS

Site and Participants

I obtained from well-known venture capitalists and entrepreneurship associations a list of entrepreneurs running business-to-business (B2B) service ventures, operating largely in the information technology and enabled services (ITES) sector that were less than six years old and had at least one paying customer. There were 75 entrepreneurs (drawn from 73 ventures) who fit the criteria and also chose to participate in the project. All but two of these participants identified themselves as founder or cofounder of their ventures, and the two nonfounders had joined their ventures as CEOs less than a year after founding. There were only three women in the sample. The average entrepreneur in the sample was 35 years old and had 12 years of work experience. Although 37% of the entrepreneurs in this sample had worked as early employees or had cofounded a new venture prior to the current one, none of them had prominent exits (say, by selling an earlier venture for a significant amount of money). In other words, the sample was relatively homogenous in terms of the entrepreneurs' personal reputations. There was also little variation in their educational backgrounds: all had at least an undergraduate college degree. The average venture was 3.6 years old, employed 31 persons, and experienced annual revenue growth of 87%.

Research Protocol

After securing their agreement, I had my first (two-hour) face-to-face meeting with the entrepreneurs to gather initial data and establish rapport. For the next two months (Phase I) entrepreneurs reported—in one of two ways—their interactions with new people who were potentially relevant to their professional life. In the first option, research assistants (RAs) visited the entrepreneur's workplace once a fortnight and photographed the business cards of the new people with whom the entrepreneur interacted during the period. In addition, the RA captured in a Word document the details of new people met for whom the entrepreneur did not have a business card because these individuals were encountered either electronically (online, over the phone, etc.) or in settings where cards were not exchanged (e.g., an informal dinner party where only phone numbers were exchanged). The second option was for the respondents to e-mail the research team a templated Excel file containing the details (name, gender, title, organization name, location, etc.) of the new persons they encountered. In all cases, entrepreneurs received follow-up phone calls, e-mails, and site visits from the research team. Most in the sample (85%) chose the first option, and there was no significant difference in the number of new people met between the two reporting options. Although this research design yields data on entrepreneurs' networking actions that is of unprecedented granularity, an important limitation is that entrepreneurs were willing to participate in this research project only on the condition that I *not* get in touch with either their existing contacts or the new people they met.

Entrepreneurs sometimes reconnect with dormant ties: people whom they knew before but subsequently lost touch with (an example would be meeting an old high school friend at an airport). For this study, "new people" were defined as complete strangers or individuals whom the entrepreneur knew earlier but had no interaction with during the previous three years. Of the new people met in this study, 92% were complete strangers.

Shortly after reporting the new people they met, entrepreneurs received a customized link to a brief Web survey. This survey asked entrepreneurs to report: whether their venture had an existing or potential relationship with the organization represented by each of the new people met; the nature of the relationship (i.e., customer, alliance partner, competitor, investor/banker, supplier, or none of these); whether interaction with the new person was due to a referral and, if so, the name and organizational details of the referee; location of the interaction with the new person; and, finally, whether the focal entrepreneur and new person were alumni of the same educational or work organization. Soon after Phase I data collection on the new people met, I had another (one-hour) face-to-face meeting with the entrepreneurs to collect additional sociometric and qualitative data on entrepreneurs' networking actions. Finally, 12 months after Phase I ended, I held the final face-to-face meeting with the entrepreneurs; at this time I administered a structured survey on the status of relationships with the new people met during Phase I.

Analysis Approach

The unit of analysis in this paper is the dyad consisting of entrepreneur and new person. Of the 75 entrepreneurs in the initial sample, 10 did not provide any data on new people met and hence were dropped from the study. The remaining 65 entrepreneurs reported interacting with a total of 2,092 new people of potential relevance to their professional lives during the two-month period of Phase I; of these, the entrepreneurs wanted to keep in touch with 1,495 new people. After dropping observations with missing data on some of the independent variables, I was left with 1,644 entrepreneur–new person dyads with full data to model the first dependent variable.

I used fixed-effects logit models¹ to control for unobserved heterogeneity across entrepreneurs. The data from face-to-face interviews, logged business cards, templated Excel files, and Web surveys were used to code the variables used in this study, as outlined in the next section. Also, task complementarity and both caste and language homophily were measured as continuous variables. Evaluating predictions of the interaction effects of match criteria require a

¹ The analysis was implemented using “clogit” in Stata. Results are robust to a probit specification.

dummy variable approach for identifying the extreme cases of similarity and task complementarity. This necessitated separate analysis of the main and interaction effects as elaborated in the results section.

Measures

Tie formation intention. The first dependent variable in this study, entrepreneurs' intention to form a tie to a new person they interacted with, was coded as follows. During each fortnight of Phase I, entrepreneurs provided the business cards of the new people with whom they interacted in that period. At this time, the focal entrepreneur was asked to indicate which of those new people he *wanted* to stay in touch with. In other words, after at least one interaction with a new person, entrepreneurs were asked to evaluate whether they intend to follow up with subsequent interactions and thereby attempt to build a relationship. Initial semistructured interviews suggested this as an effective method of capturing entrepreneurs' intentions to build a new interpersonal tie. In order to minimize bias stemming from social desirability reasons, entrepreneurs were briefed (in the initial face-to-face meeting) that it was perfectly acceptable for them to want to keep in touch with all of the new people they meet, none of them, or anything in between. *Tie formation intention* was then coded as 1 for the entrepreneur–new person dyad if the entrepreneur wanted to remain in touch with the new person and was coded 0 otherwise.

Exchange relationship formation. The second dependent variable in this study addresses an important economic consequence of entrepreneurs' networking actions: the formation (or not) of an interfirm exchange relationship between the focal entrepreneur's venture and the organization represented by a new person. This variable was coded as follows. First, from the Web survey I identified the entrepreneur–new person dyads for which no exchange relationship existed between the venture and the organization with which the new person was affiliated. For

the 1,437 such dyads in the sample,² I coded *exchange relationship formation* as 1 if the entrepreneur reported that the focal new person was responsible for the establishment of an interfirm relationship between their respective organizations during the 12 months subsequent to Phase I of the study; otherwise, *exchange relationship formation* was coded 0. In all cases, I physically inspected the relevant documents (e.g., purchase or alliance contract, e-mail) that provided objective evidence of an interfirm exchange relationship, and in some cases I also obtained “sanitized” copies of those documents. Note that 1,082 of the 1,437 dyads (75%) exhibited a one-to-one mapping between the entrepreneur–new person interpersonal tie and the venture–organization interfirm tie.

Caste homophily. The similarity in caste between entrepreneurs and the new people they met was calculated in three steps as follows. First, I dropped the five entrepreneurs in the sample that identified themselves as non-Hindu because caste was likely less important for them.³ Second, based on entrepreneurs’ self-reports of their caste, I placed each Hindu entrepreneur into one of the following caste categories: Brahmin, Kshatriya, Vaishya, Shudra, and Dalit. Using this procedure, I identified 52% of the entrepreneurs as Brahmins, 26% as Kshatriya and 22% as Vaishya.

As described previously, I could not directly interact with (and thus could not ascertain the caste of) the new people that were met. However, the sociological literature on Indic names provides evidence that Indian names vary *systematically* with caste and region (Kaushik, 2000; Singh, 1996). I therefore adopted a strategy of probabilistically inferring new peoples’ caste from their last names. I did this by obtaining data⁴ from the two largest Indian online matrimonial agencies that maintain details on the last name, caste, religion, and mother tongue of

² The fixed-effects logit modeling approach entailed dropping from the estimation procedure all entrepreneurs who did not initiate any exchange relationships. Also, I dropped five non-Hindu entrepreneurs because caste may be less important for them. The result was a final $N = 792$ for modeling the formation of interfirm exchange ties.

³ Recent research suggests that caste considerations transcend religious affiliations in India. The results reported here are robust to including the non-Hindu entrepreneurs in the analysis.

⁴ The information was obtained (after following due process with respect to data confidentiality) as a one-time raw data dump. The procedures employed for data cleanup prior to use in this study are available from the author.

approximately 2.1 million individuals who are looking for marriage partners. The reported data identifies the profile of the prospective bride or groom; the individual providing the data is the prospective bride or groom (or an immediate family member) when signing up to become users of the matrimonial service.

Using this database, I coded the relative frequencies with which a particular last name maps to different caste categories. For example, the 11,486 occurrences of the last name “Gupta” in the matrimonial database map to the following caste categories (relative frequencies in parentheses): Vaishya (92%), Brahmin (5%), and Kshatriya (3%). I interpret these relative frequencies to mean that a person whose last name is “Gupta” belongs to the Vaishya caste with 92% probability, to the Brahmin caste with 5% probability, and to the Kshatriya caste with 3% probability.

Since this is a novel methodology for identifying an individual’s caste category, I assessed its validity by examining the correlation between actual caste data and inferred caste data for the study’s entrepreneurs (for whom I have self-reported data on their actual caste). The inferred caste data yielded, on average, a probability score of 0.59 for the known caste category; a probability score of 0.2 would indicate that Indian surnames bore no systematic relation to caste (i.e., assuming equal chance for each of the five caste categories). This suggested that probabilistically inferring caste from last names is a reasonable, albeit noisy, approach.

For each entrepreneur–new person dyad, I calculated *caste homophily* as the joint probability of the entrepreneur and new person belonging to the same caste. It should be emphasized here that this study does not focus on the determinants of the *initial* interaction⁵ between entrepreneur and new person, so identification of baseline versus inbreeding homophily (cf. McPherson et al., 2001) is not relevant. Thus, *caste homophily* ranges between 0 and 1 (inclusive) depending on the extent of overlap between the entrepreneur’s caste (known with probability of 1) and the new person’s probabilistically inferred caste. For example, consider a focal entrepreneur who belongs to the Brahmin caste and who interacts with a new person whose

⁵ Robustness tests on the determinants of the initial interaction are available from the author.

last name is “Gupta”. For this entrepreneur–new person dyad, *caste homophily* would be coded as 0.05 ($= 1 \times 5\%$). Note that *caste homophily* is set to 0 for 14% of the new people in the sample who are not of Indian ethnicity, since caste is not relevant in such cases. In order to test for interaction effects, I used indicator variables *high caste homophily* and *low caste homophily* to respectively code for observations that were one standard deviation above and below the mean.

Language homophily. The similarity in language between entrepreneurs and the new people they met was coded in a manner similar to that used to code caste homophily. First, I created indicator variables to code the Indian languages in which an entrepreneur could carry on a business conversation (in addition to English, which all of them were proficient in). This self-reported data showed that 55% of the sample was fluent in Hindi, 27% in Kannada, 24% in Telugu, 20% in Tamil, and 7% in Malayalam.⁶

As before, I used the matrimonial database to probabilistically infer a new person’s language from his last name. Continuing with the same example, the 11,486 occurrences of the last name “Gupta” in the matrimonial database map to the language of Hindi (98%) or Telugu (2%). I interpret these relative frequencies to mean that a person whose last name is “Gupta” knows Hindi with 98% probability and knows Telugu with 2% probability.

For each entrepreneur–new person dyad, I calculated *language homophily* as the joint probability of the entrepreneur and new person being proficient in the same Indian language. Thus, *language homophily* ranges from 0 to 1 (inclusive) depending on the extent of overlap between the entrepreneurs’ language set (known with probability of 1) and the new person’s probabilistically inferred language. Continuing with the same example, consider a focal entrepreneur fluent in Hindi and Telugu who interacts with a new person whose last name is “Gupta”. For this entrepreneur–new person dyad, *language homophily* would be coded as 1.0 ($= 1 \times 98\% + 1 \times 2\%$). Again, *language homophily* is set to 0 for 14% of the new people in the

⁶ The total exceeds 100% because some entrepreneurs were fluent in more than one Indian language. In particular, 54% were fluent in one language, 30% in two languages, and 16% in three or more languages.

sample who are not of Indian ethnicity, since they are unlikely to know an Indian language. In order to test for interaction effects, I used indicator variables *high language homophily* and *low language homophily* to respectively code for observations that were one standard deviation above and below the mean.

Entrepreneur homophily. I coded *entrepreneur homophily* as 1 whenever the focal respondent and the new person he met were both business founders and as 0 otherwise. In some cases the formal title of the new person clearly indicated that he was a founder or cofounder. In other cases, I examined the Web site of the new person's organization—in addition to Web sites (such as www.zoominfo.com) that track individuals' career histories—in order to code whether a new person was a business founder.

Task complementarity. I used a two-step procedure to measure the overlap between entrepreneurs' current task priorities and the resources potentially available from the new people they met. I first estimated entrepreneurs' current task priorities through their self-report. Specifically, during the initial face-to-face meeting (prior to Phase I), entrepreneurs reported their best estimate of the percentage of their working time that they intended to allocate in the subsequent three months to the following activities (sample averages reported in parentheses): (1) working with existing customers (25%); (2) seeking new customers (25%); (3) working with existing alliance partners (9%); (4) seeking new alliance partners (10%); (5) working with existing investors (2%); (6) seeking new investors (8%); (7) working with existing suppliers (4%); (8) seeking new suppliers (5%); (9) interacting with competitors (3%); and (10) other activities (e.g., internal team building) (9%). Initial interviews suggested that this set of activities was appropriate to the study's context.

Second, I used the Web survey data to assess the resource potentially available from each new person with whom the focal entrepreneur interacted during Phase I. During that phase,

entrepreneurs categorized (on a fortnightly basis) the organizations represented by the new people they met as existing or potential alliance partner, customer, investor, supplier, competitor, or none of these. I coded the categorizations using indicator variables and defined *task complementarity* as the product of these indicator variables and the proportion of time the focal entrepreneur intended to spend on the ten activities just listed. Thus, the *task complementarity* of entrepreneur–new person dyads ranged from 0 to 1 (inclusive) depending on the extent of overlap between the focal entrepreneur’s task priority areas and the new person’s organization.

For example, consider a focal entrepreneur who intended to spend 80% of his time searching for new customers and 20% of his time working with existing alliance partners. For this entrepreneur, *task complementarity* would be coded as 0.8 ($= 1 \times 80\%$) for a new person whose organization is categorized as a potential customer and would be coded as 0.2 ($= 1 \times 20\%$) for a new person whose organization is categorized as an existing alliance partner; *task complementarity* would be coded as 0 for all other new persons met by this entrepreneur. In order to test for interaction effects, I used indicator variables *high task complementarity* and *low task complementarity* to respectively code for observations that were one standard deviation above and below the mean.

Control variables. The research design controlled for industry effects because the sample is based on ventures operating in the broad knowledge-intensive sector. The fixed-effects logit modeling approach controlled for factors such as entrepreneurs’ personality traits, attitudes and subjective norms related to networking (Ajzen, 1991), networking styles (Vissa, 2009), slack resources (George, 2005), and the venture’s position in the existing interfirm network⁷ (Powell, Koput, & Smith-Doerr, 1996). All these factors have been theorized to affect tie formation events, but I assumed their effects were time-invariant for the duration of this study.

⁷ The average exchange relationship in this data was initiated six months after the entrepreneur’s interaction with a new person. It seems reasonable that a venture’s position in the interfirm network would not have changed significantly during this period. Further, data granularity in prior research on interfirm networks is typically no finer than the firm-year, which justifies the fixed-effect assumption of this study.

I controlled for the location of the first interaction between entrepreneur and new person because Shipilov, Labianca, Kalnysh, and Kalnysh (2007) show that individuals are more likely to maintain relations with new people met at informal occasions than with those met at formal clubs. I use indicator variables to code the location of first interaction as being either in offices (omitted category), at professional events, at social events, via electronic means (e.g., e-mail, telephone, online networking sites), or elsewhere (e.g., elevator, airport).

To account for “old boy network” effects (Simon & Warner 1992), I also controlled for shared affiliation between entrepreneur and new person. *Shared affiliation* was coded as 1 if the entrepreneur reported that he and the new person are alumni of the same educational institution or workplace and was coded as 0 otherwise. In 3% of the cases, entrepreneurs responding to this question reported “don’t know”, which was also coded as 0.

Prior research (Gulati & Gargiulo, 1999) suggests that referral from existing network ties is an important mechanism underlying new tie formation. I controlled for the effect of prior network structure on current tie formation by coding *met through referral* as 1 if the entrepreneur reported meeting the new person through a referral. Activating dormant ties could also be an important mechanism through which entrepreneurs form exchange relations. I controlled for this by using the indicator variable *dormant tie*, which was coded as 1 if the entrepreneur reconnected with a dormant contact (a person he knew before but subsequently lost touch with).

Preferential attachment is an important mechanism driving tie formation (Barabási & Albert, 1999). I control for this alternative explanation by using an indicator variable to code a new person’s organizational rank—given that higher rank indicates both greater status and greater resources, which a focal entrepreneur would want to access. I assigned new people into one of three rank categories (*low rank*, *medium rank*, and *high rank*) based on the formal titles shown on their business cards (or reported in the Excel files) collected during Phase I.

To control for the effects of cultural differences between Indian and non-Indian contacts, I set an indicator variable *Indian* to 1 for new persons of Indian ethnicity. Finally, I set *multiple*

new persons per organization dummy to 1 for all new persons met by a focal entrepreneur that belonged to the same organization.

RESULTS

Table 1 summarizes the descriptive statistics and correlations for all the variables used in the analysis of the first and second dependent variables. As expected, the indicator variables for extreme values of task complementarity, caste homophily, and language homophily are highly correlated with their respective continuous variables. Since the indicator variables (used to test interaction effects) and the continuous ones are never in the same model, this is not a concern. Also as expected, the indicator variable *Indian* is moderately negatively correlated with *low caste homophily* and *low language homophily* because the non-Indian contacts in the sample were coded as 0 on the caste and language homophily variables. Finally, *high rank* and *medium rank* are negatively correlated, as expected. All other correlation coefficients are small. Overall, I conclude that multicollinearity is not a concern.

[INSERT Table 1 about Here]

Main Effects of Match Criteria on Intention to Form an Interpersonal Tie

Panel A of Table 2 reports the results of the logit analysis examining the main effects of the match criteria on entrepreneur's intention to form an interpersonal tie with a new person encountered during Phase I of the study. Model 1 reports the base model with only the control variables. Model 2 reports results after the introduction of the social similarity variables, while model 3 reports the full main effect model that includes task complementarity as well. I interpret only model 3 because the coefficients are fairly stable across all three models. Hypothesis 1 predicts that greater caste homophily increases the odds of tie formation intentions; the coefficient of *caste homophily* is positive and significant ($p = 0.04$) in model 3, suggesting strong support for H1. The coefficient of *language homophily* is positive and strongly significant ($p = 0.02$), providing strong support for Hypothesis 2 that greater language homophily influences

entrepreneurs' tie formation intentions. Hypothesis 3 predicts that entrepreneurs are more likely to form a tie to other business founders. The coefficient of *founder homophily* is positive but not significant at conventional levels ($p = 0.20$) indicating that H3 is not supported by the data. Finally, the coefficient of *task complementarity* is positive and highly significant ($p = 0.01$), strongly supporting Hypothesis 4 that entrepreneurs want to form ties with new people who match their current task priority area.

[INSERT Table 2 and Table 3 about here]

The control variables show three interesting patterns. First, there is strong evidence that prior network structure influences tie formation intentions. The positive and significant coefficient for *met through referral* suggests that entrepreneurs want to form ties with new people who have been referred by their existing network contacts. Interestingly, the positive and significant coefficient for *dormant tie* suggests that entrepreneurs are more likely to want to reconnect to a contact they knew before but had lost touch with. Second, rank of the new person has a strong effect on tie formation intentions. The coefficient of *high rank* is positive and strongly significant, which suggests that entrepreneurs are more likely to have tie formation intentions to a new person of high rank than to one of medium or low rank. Third, the location of the initial interaction between entrepreneur and new person has a significant influence. The negative and significant coefficients for *met at professional event*, *met at social event*, *met electronically* and *met elsewhere* indicates that meeting a new person at an office makes it more likely for the entrepreneur to want to form a tie, compared to other locations. In addition, chi-square tests to compare the equality of coefficients suggest that entrepreneurs are more likely to form a tie with new people met at professional events than at social events, electronically, or otherwise. This finding is consistent with prior research on the importance of voluntary association membership in linking people with one another (Davis, Renzulli, & Aldrich, 2006).

Interaction Effects of Match Criteria on Intention to Form an Interpersonal Tie

Panel A of Table 3 reports the results of the logit analysis examining the interaction effects of the match criteria on entrepreneur's intention to form an interpersonal tie with a new person encountered during Phase I of the study. Model 1 reports the full main effects specification in order to validate that using indicator variables for task complementarity, caste homophily, and language homophily replicates the previously reported results that were based on continuous variables (in model 3 of Table 2). As evident from model 1 of Table 3, the indicator variable *low task complementarity* is negative and significant, suggesting that entrepreneurs are less likely to have tie formation intentions when task complementarity is low. The positive and highly significant coefficients for the indicator variables *high caste homophily* and *high language homophily* suggest that entrepreneurs are more likely to have tie formation intentions when similarity on these criteria is high. This replicates the main effect findings reported in model 3 of Table 2, where continuous variables were used for task complementarity and for caste and language homophily.

Model 2 of Table 3 reports the results of the interaction effects to test Hypothesis 5 that the effect of greater (lower) social similarity on tie formation intentions is attenuated by lower (greater) task complementarity. The first step in testing these hypotheses is to examine the joint significance of the interaction term with the main effect variable. The results suggest that only *high caste homophily* and *high caste homophily x low task complementarity* are jointly significant (chi-square = 12.6, $z < 0.001$), which shows that task complementarity moderates the effect of caste homophily on tie formation intentions. The coefficient of the interaction term *high caste homophily x low task complementarity* is negative, suggesting that low task complementarity weakens the positive effect of high caste homophily. Figure 2 displays the predicted probability of interpersonal tie formation intentions for the interacting variables computed when the level of all other covariates is set to zero. I also used the "inteff" command in Stata to check the magnitude and sign of the interaction term across all observations, since these can differ

substantially in nonlinear models such as logit or probit (Norton, Wang, & Ai, 2004). I find the interaction effect to be nominally negative across all observations but significantly so for 8% of the observations; this corresponds to a predicted probability range of 0.14 to 0.65. I conclude that the data provides reasonable support for H5 of a trade-off in match criteria.

[INSERT Figure 2 and Figure 3 about here]

Economic Consequence of Matching: Formation of Exchange Relationships

Panel B of Table 2 shows the results of the logit analysis examining the main effects of interpersonal matching on the formation of economic exchange relationships between the focal entrepreneur's venture and the organization represented by the new person met during Phase I. Model 4 reports the base model with only the control variables. Model 5 reports results after the introduction of the social similarity variables, while model 6 reports the full main effect model that includes task complementarity. I interpret only model 6 because the coefficients are fairly stable across all three models. The positive and strongly significant coefficients for *task complementarity* ($p = 0.001$) and *language homophily* ($p = 0.03$) suggest that these two interpersonal tie matching criteria significantly improve the entrepreneur's odds of initiating an exchange relationship with a target organization. Yet *caste homophily* is not significant, which suggests that fit on this criterion is less important. Likewise, *founder homophily* is not significant, indicating that this match criterion too is not a driver of interfirm tie formation.

Panel B of Table 3 shows the results of the logit analysis on drivers of interfirm exchange ties after including the interaction effects of the match criteria. Again, model 3 reports the base model with only the main effects; it can be seen that this analysis with indicator variables replicates the main effect analysis with continuous variables reported in model 6 of Panel B in Table 2. Model 4 of Table 3 reports the results of the interaction effects of match criteria on exchange relationship formation. The first step in testing these hypotheses is to examine the joint significance of the interaction term with the main effect variable. The results suggest that only

high language homophily and *high language homophily x low task complementarity* are jointly significant (chi-square = 4.5, $z < 0.10$), which shows that task complementarity moderates the effect of language homophily on exchange relationship formation. The coefficient of the interaction term *high language homophily x low task complementarity* is negative, suggesting that low task complementarity weakens the positive effect of high language homophily. Figure 3 graphically displays the predicted probability of interfirm exchange tie formation for the interacting variables computed when the level of all other covariates is set to zero. Again, using the “*inteff*” command in Stata revealed the interaction effect to be nominally negative across all observations but significantly so for 3% of the observations, corresponding to a predicted probability range of 0.10 to 0.57. Overall, I interpret the pattern of results reported in model 6 of Table 2 (main effect of match criteria) and model 4 of Table 3 (interaction effect of match criteria) as strong support for Hypothesis 6 that greater fit on match criteria improves the odds of forming an exchange relationship.

As can be seen from model 6 of Table 2, the control variables also show some interesting patterns. Contrary to past research that stresses the importance of referrals, *met through referral* is positive but not significant at conventional levels, suggesting that this particular aspect of prior social structure is less important in initiating new exchange relationships. In contrast, the positive and significant coefficient for *dormant tie* ($p = 0.10$) indicates that entrepreneurs who reconnect to dormant ties are more likely to successfully form an exchange relationship. Finally, the strongly significant coefficient of *medium rank*, in contrast to the weakly significant coefficient of *high rank*, suggests that connecting with new persons of intermediate rank may be more useful from the entrepreneur’s perspective.

The magnitude of effect sizes was large. In logit models, the dependent variable is the probability of a successful outcome (and so varies between 0 and 1) while the independent variables’ effects are nonlinear. For illustrative purposes, for model 6 of Table 2, I calculated the standardized marginal effects from a base probability of 0.05 (obtained by using the “*mfx*”

command in Stata). The marginal effect of *task complementarity* was 0.03, so if task complementarity increases by a single standard deviation then the probability of forming a new exchange relationship increases by 0.03 (an increase of 60% from the base case). Similarly, the marginal effect of *language homophily* was 0.02. The control variables also had substantial effects: the marginal effect of *dormant tie*, *medium rank*, and *high rank* were (respectively) 0.06, 0.10, and 0.05.

DISCUSSION AND CONCLUSION

Prior research on entrepreneurial networks has either examined the consequences of existing network ties or examined new tie formation as a behavioral outcome, treating the intentions of the actors involved as a black box; thus limiting our understanding on whether entrepreneurs are more properly conceived as strategic actors that contrive to get into advantageous network positions. This study opens up the black box by exploiting Ajzen's (1991) insight that individuals' intentions partly explain their premeditated behaviors. Specifically, this study advances the view of entrepreneurs' tie formation intentions as a matching process with match criteria that include both social aspects (similarity in language, caste, and occupation) and task priorities (task complementarity). This view is useful and important because entrepreneurs often deploy their personal networks to form new economic exchange ties; hence match quality in interpersonal tie formation intentions helps determine exchange partner selection for the focal venture.

Effects of Match Criteria on Tie Formation Intentions

I found that language similarity, caste similarity, and task complementarity have a strong additive effect on entrepreneurs' intentions to form interpersonal ties whereas occupational similarity was not significant. In addition, I found interaction effects. Specifically, the intention to form a tie to a new person from the same caste was strongly dampened when there was little task

complementarity. In other words, after at least one interaction with a new person, the entrepreneur mainly focused on individuals who spoke the same Indian language or whose objectives were congruent with his immediate task priority areas, and traded off caste similarity against task complementarity.

Although not directly comparable, these main effect findings are at variance with the only prior study that examines the additive effects of task and social similarity considerations in entrepreneurial settings. Ruef, Aldrich, and Carter (2003; hereafter RAC) argue that homophily is a significant driver of founding team formation but that functional task considerations are not. Their analysis differs from this study in three important ways, which could account for the difference in findings. First, whereas I study the formation of exchange relationships, RAC focus on the formation of founding teams. To the extent that founding teams are formed during venture emergence, where considerations of trust may take priority over efficiency, this study's results complement those in RAC by highlighting how task considerations become important match criteria during the growth stage of a new venture. Second, RAC's representative sample included new ventures drawn from diverse industry sectors, including both high-potential and less-promising ventures. This study's results suggest that functional task considerations are more important match criteria in knowledge-intensive, high-potential ventures than in the set of all new ventures. Third, RAC's methodology involved comparing the composition of realized founding teams with hypothetical teams that could have been formed but were not: a comparison between observed data and imputed data. However, this study's design enabled observation of both realized and unrealized matches and so had no need to impute data on unrealized matches, providing perhaps a stronger test than the earlier, pioneering work.

In addition, the interaction effect findings of this study are at variance with the only prior study that examines the multiplicative effects of task and social considerations in instrumental tie formation. Casciaro and Lobo (2008) find that, in task interactions, employees prefer to form a tie to a person they like, irrespective of her task competence, rather than a task expert whom they

dislike. In contrast, this study's findings suggest that even though social aspects are important for entrepreneurs' tie formation intentions, task considerations weaken the effect documented by Casciaro and Lobo. The theoretical logic advanced in this study to explain this variance is that entrepreneurs face high-powered incentives (relative to employees), which act as a dampening device that counterbalances entrepreneurs' natural tendency to want to form new ties to homophilous others.

More broadly, the use of matching theory distinguishes this study from prior work on tie initiation. I have built on Mitsuhashi and Greve's (2009) pioneering use of a matching lens to study alliance formation by established firms. Matching theory assumes that actors instrumentally use observable match criteria to further their goals. This orientation makes it possible to articulate mechanisms behind entrepreneurial network tie selection not only with socially similar strangers but also with *dissimilar* strangers. I contribute to matching theory by outlining match criteria in the context of entrepreneurial networks and examining their effects on actors' behaviors as well as their intentions—a novel application of matching theory. I also extend Mitsuhashi and Greve's work by examining both the main and the interaction effects of match criteria. In addition, this study extends Ajzen's (1991) planned behavior framework by conceptualizing the initiation (or not) of new economic exchanges as the joint outcome of the tie formation intentions and behaviors of two "Ajzen actors" who apply their respective match criteria to select-in (or select-out) the other.

Accuracy of Entrepreneurs' Matching

My findings on the performance consequences of matching reveal that entrepreneurs had a greater chance of initiating an economic exchange relationship when their interpersonal ties matched well on task complementarity or language similarity. In addition, the interaction effect analysis provided evidence that task complementarity trumps language similarity. However, matching on founder homophily or caste homophily did not significantly influence the formation

of exchange relationships. In other words, an entrepreneur improved his odds of initiating economic exchange with those new persons that spoke the same Indian language or whose objectives were congruent with his immediate task priority areas, and when these were in conflict, by trading off language similarity against task complementarity.

Comparing the two dependent variables, I find that the match criteria—task complementarity and language similarity—that significantly influenced the initiation of economic exchange relationships were also important drivers of entrepreneurs’ intentions to form an interpersonal tie; this suggests that entrepreneurs were accurate in judging the performance consequence of these match criteria. Nonetheless, caste homophily was a significant driver of interpersonal tie formation intentions but had no effect on interfirm exchange relationship formation. And even though pursuing individuals with greater language similarity but little task complementarity decreased the odds of initiating economic exchanges, entrepreneurs’ tie formation intentions did not reflect this trade-off. In other words, comparing the match criteria in use by entrepreneurs and the drivers of economic exchange tie initiation suggests that entrepreneurs either had mistaken beliefs about the consequences of these match criterion and their trade-offs (a result of bounded rationality) or had limited opportunities and so were forced to “make do” with the new people they encountered. Overall, I interpret this pattern of findings as evidence that entrepreneurs intentionally pursue valuable connections but are only partially accurate in estimating which connections might be valuable.

Research in entrepreneurship (Hallen, 2008) and partner selection (Gulati & Gargiulo, 1999) suggests that pre-existing ties are an important driver of new exchange relationship formation, a view that finds mixed support in this study. Even though referrals from pre-existing ties were a strong driver of entrepreneurs’ tie formation intentions, referrals did not predict exchange relationship formation. In other words: entrepreneurs in this sample valued referrals, but the economic utility of these referrals seems questionable. In contrast, dormant ties were significant predictors of both tie formation intentions and exchange relationship formation.

Research on networks has paid scant attention to the reactivation of dormant ties, and the findings here imply this could be a useful arena for future study.

Shedding Light on the Indian Context and Practice

This study's entrepreneurs are drawn from the burgeoning middle classes of India that are located mainly in the cities, are highly educated and operate businesses in high technology sectors. In contrast, the *average* entrepreneur in India is poorly educated, located in a rural area, operates an imitative, low technology, low growth potential business (Manimala, 2003) and probably transacts in the economy largely on the basis of his caste affiliations. Clearly this sample is more representative of the vanguard than the average in this rapidly modernizing society. As one of the study participants put it: "This is the 'New India' and caste does not play a role in business because we see ourselves as middle class professionals – and in fact where you graduated from or which company you worked in earlier is more important than caste⁸". So, the "non-finding" that caste is irrelevant to commerce in the knowledge intensive sectors of the Indian economy is good news for Indian policy makers since enlarging the set of potential economic exchange partners has positive welfare implications.

This study also offers insights for practitioners that can be generalized beyond the Indian context. Prior work identifies the importance of referrals from current network contacts as the path to success, but this study shows that establishing well-matched interpersonal ties is an alternate route. The matching route could be particularly important for entrepreneurs who don't already have a good network. In addition, the importance of task complementarity suggests a pathway for entrepreneurs from socially disadvantageous locations to succeed based on task-related attributes rather than social resources.

⁸ As it happens, prior shared affiliations did not have a significant effect in this study's sample.

Limitations and Future Research Opportunities

These results must be treated as exploratory because they are based on a relatively small sample of new ventures drawn from one broad industry sector in a developing country and because a relatively novel research design and measurement methodology was used. Nevertheless, this study makes two theoretical contributions. First, the findings suggest that although both social similarity and task considerations matter in entrepreneurs' tie formation intentions, when they conflict, task trumps similarity. Second, entrepreneurs are partially accurate in their tie formation intentions; while matching on language similarity and task complementarity matter for initiation of new economic exchange ties, matching on caste similarity does not.

These findings are a useful starting point for future research along several paths. First, the partial accuracy of entrepreneurs' judgments suggests an important role for network brokers (such as lawyers and accountants), on whom entrepreneurs may rely to match them with an appropriate counterparty. Second, an important implication of matching theory is that well-matched ties tend to be more stable. Determining whether or not matched interpersonal ties lead to interfirm ties of greater stability would shed light on the relative importance of initial match quality versus subsequent trust building (Larson, 1992) as the driver of exchange tie longevity. In addition, the strong effect of language homophily in this study is interesting and is worthy of further investigation in other settings, such as new ventures that are "born global" or are rapidly internationalizing (McDougall & Oviatt, 2000).

In conclusion, extant research on entrepreneurial networks has been subject to the persuasive critique (Stuart & Sorenson, 2007) that it conceptualizes entrepreneurs as nonstrategic actors. This study takes a step toward addressing their critique by using a matching perspective to model explicitly the drivers of entrepreneurs' tie formation intentions and by estimating the accuracy of match criteria in terms of their organization-level outcomes. The evidence suggests that although entrepreneurs may be only partially accurate in their assessments of value, they are more properly conceived as strategic actors who intentionally pursue valuable connections.

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TABLE 1
Descriptive Statistics and Correlations^a

Variable	Mean	Std dev	1	2	3	4	5	6	7
1. Tie formation intention	.7/na	.5/na	-						
2. Inter-firm tie formation	na/.1	na/.3	na/na	-					
3. Met at professional event	.2/.3	.4/.5	-.1/na	na/-.0	-				
4. Met at social event	.1/.1	.3/.3	-.2/na	na/-.1	-.2/-.2	-			
5. Met electronically	.1/.1	.3/.3	-.2/na	na/-.0	-.2/-.2	-.1/-.1	-		
6. Met elsewhere	.1/.1	.3/.3	-.2/na	na/-.0	-.2/-.2	-.1/-.1	-.1/-.1	-	
7. Shared affiliation	.1/.1	.3/.3	.0/na	na/-.0	-.0/-.0	.0/0	-.0/-.0	.1/0	-
8. Multiple new persons per organization dummy	.3/.2	.4/.4	.1/na	na/.1	-.1/-.1	-.1/-.1	-.1/-.1	-.1/-.1	-.1/-.0
9. Met through a referral	.3/.3	.4/.4	.3/na	na/0	-.3/-.3	-.1/-.1	-.1/-.1	-.0/-.0	-.0/-.0
10. Dormant tie	.1/.1	.3/.3	.1/na	na/0	-.1/-.1	.1/.1	.0/0	-.0/-.0	.2/.2
11. Ethnic Indian	.9/.9	.3/.3	-.1/na	na/0	.0/0	.0/0	.0/0	-.0/-.0	.1/.1
12. Task complementarity	.1/.1	.1/.2	.3/na	na/.2	-.2/-.2	-.1/-.1	-.1/-.1	-.0/-.0	-.0/-.0
13. High rank	.7/.7	.5/.5	.1/na	na/-.0	.1/.1	-.0/-.0	-.1/-.1	.0/0	.1/.1
14. Medium rank	.3/.3	.4/.5	-.1/na	na/0	-.1/-.1	.0/0	.1/0	-.0/-.0	-.1/-.1
15. Founder homophily	.2/.2	.4/.4	.1/na	na/0	.1/.1	-.0/-.0	.0/0	-.0/-.0	.0/0
16. Caste homophily	.2/.2	.3/.3	.0/na	na/.1	-.0/-.0	.0/0	.0/0	.0/0	.0/0
17. Language homophily	.4/.4	.4/.4	.1/na	na/.1	.1/.1	.0/0	.0/0	-.0/-.0	.1/.1
18. High task complementarity	.2/.2	.4/.4	.1/na	na/.1	-.1/-.1	-.1/-.1	-.0/-.0	.0/0	-.0/-.0
19. Low task complementarity	.4/.4	.5/.5	-.3/na	na/-.2	.2/.2	.1/.1	.1/.1	.0/0	.1/.1
20. High caste homophily	.2/.2	.4/.4	.1/na	na/.1	-.0/-.0	.0/0	.0/0	.0/0	.0/0
21. Low caste homophily	.2/.2	.4/.4	.0/na	na/-.1	.0/0	.0/0	-.0/-.0	-.0/-.0	-.0/-.0
22. High language homophily	.3/.3	.4/.5	.1/na	na/.1	.1/.1	.0/0	-.0/-.0	-.0/-.0	.1/.1
23. Low language homophily	.2/.2	.4/.4	-.0/na	na/-.1	-.0/-.0	.0/0	-.0/-.0	-.0/-.0	-.0/-.0

	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
8.	-														
9.	.1/.1	-													
10.	-.1/-.1	-.0/-.0	-												
11.	-.0/-.0	-.0/-.0	.1/.1	-											
12.	.2/.2	.2/.2	-.1/-.1	-.0/-.0	-										
13.	-.1/-.1	.1/.1	-.0/-.0	-.0/-.0	.0/0	-									
14.	.1/.1	-.0/-.0	.0/0	.1/.1	-.0/-.0	-.8/-.8	-								
15.	-.2/-.1	.0/0	.1/.1	.0/0	-.0/-.0	.4/.4	-.3/-.3	-							
16.	-.0/-.0	-.0/-.0	.0/0	.3/.3	-.0/-.0	-.0/-.0	.0/0	-.0/-.0	-						
17.	-.0/-.0	-.0/-.0	.1/.1	.3/.3	-.0/-.0	-.0/-.0	-.0/-.0	.2/.2	.1/.1	-					
18.	.1/.1	.1/.1	-.0/-.0	.0/0	.8/.8	.0/0	-.0/-.0	.0/0	-.0/-.0	-.1/-.1	-				
19.	-.3/-.3	-.2/-.2	.0/0	.0/0	-.7/-.7	-.0/-.0	.0/0	.0/0	.0/0	.0/0	.0/1	-.4/-.4	-		
20.	-.0/-.0	-.0/-.0	.0/0	.1/.1	-.0/-.0	.0/0	.0/0	.0/0	.8/.8	.1/.1	-.0/0	-.0/-.0	-		
21.	.0/0	.0/0	-.0/-.0	-.6/-.6	.0/0	.0/0	-.0/-.0	-.0/-.0	-.5/-.5	-.2/-.2	-.0/-.0	-.0/-.0	-.2/-.2	-	
22.	-.0/-.0	-.0/-.0	.1/.1	.2/.2	-.0/-.0	.0/0	-.0/-.0	.2/.2	.1/.1	.8/.8	-.1/-.1	.0/0	.1/.1	-.1/-.1	-
23.	.0/0	.0/0	-.1/-.1	-.6/-.6	.0/0	.1/.1	-.1/-.0	-.1/-.0	-.2/-.2	-.6/-.6	.0/0	-.0/-.0	-.1/-.1	.6/.6	-.4/-.4

^a Table reports data for models predicting entrepreneurs' tie formation intentions (**left** of slash) & inter-firm economic exchange tie formation (**right** of slash). Reported means and standard deviations are before standardization. Correlations with absolute value > 0.1 are significant at 5% level; N = 1644 for data to the left of the slash & N=792 for data to the right of the slash. "na" = not applicable

TABLE 2
Logit Analysis Results: Main Effects of Task complementarity and Social Similarity^{ab}

	Panel A: Interpersonal Tie Formation Intentions			Panel B: Formation of Inter-Firm Exchange Ties		
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Met at professional event	-2.6*** (-10.7)	-2.6*** (-11.0)	-2.5*** (-10.5)	-1.1** (-2.7)	-1.2** (-2.8)	-0.89* (-2.1)
Met at social event	-3.2*** (-11.0)	-3.3*** (-11.4)	-3.2*** (-10.8)	-1.9* (-2.4)	-2.0** (-2.6)	-1.7* (-2.2)
Met electronically	-3.5*** (-10.8)	-3.5*** (-11.1)	-3.5*** (-10.7)	-0.59 (-1.2)	-0.71 (-1.4)	-0.47 (-1.0)
Met elsewhere	-3.2*** (-10.8)	-3.2*** (-11.0)	-3.2*** (-10.8)	-0.67 (-1.3)	-0.73 (-1.4)	-0.56 (-1.1)
Shared affiliation	0.07 (0.3)	0.06 (0.3)	0.04 (0.2)	0.28 (0.5)	0.24 (0.4)	0.09 (0.2)
Multiple new persons per organization dummy	0.22 (1.3)	0.25 (1.5)	0.20 (1.1)	0.59 [†] (1.8)	0.57 [†] (1.8)	0.38 (1.2)
Met through a referral	0.76*** (3.6)	0.76*** (3.6)	0.74*** (3.5)	0.02 (0.4)	-0.02 (-0.5)	0.09 (0.8)
Dormant tie	0.79** (2.8)	0.77** (2.8)	0.81** (2.8)	0.65 (1.3)	0.60 (1.2)	0.87 [†] (1.7)
Ethnic Indian	-0.33* (-1.2)	-0.74* (-2.4)	-0.73* (-2.4)	0.26 (0.5)	-0.19 (-0.4)	-0.43 (-0.8)
High rank	1.2*** (4.1)	1.1*** (3.7)	1.0*** (3.5)	0.91 [†] (1.8)	0.93 [†] (1.6)	1.1 [†] (1.9)
Medium rank	0.58 [†] (1.9)	0.57 [†] (1.9)	0.55 [†] (1.8)	1.1* (2.1)	1.1* (2.0)	1.4** (2.4)
Founder homophily		0.09 (1.2)	0.10 (1.2)		-0.01 (-0.1)	-0.03 (-0.2)
Caste homophily		0.16* (2.2)	0.15* (2.0)		0.07 (0.5)	0.06 (0.4)
Language homophily		0.23* (2.4)	0.24* (2.4)		0.38* (2.0)	0.45* (2.2)
Task complementarity			0.29** (3.0)			0.59** (3.4)
Entrepreneur fixed effects	Incl.	Incl.	Incl.	Incl.	Incl.	Incl.
Number of observations	1644	1644	1644	792	792	792
Log pseudolikelihood	-637	-631	-626	-206	-203	-196
Chi square	338***	355***	366***	103***	100***	105***
Pseudo R ²	0.35	0.36	0.36	0.21	0.22	0.24

^a Table reports fixed effect logit analysis coefficients (standardized for the independent variables) with t-statistics based on robust standard errors in parentheses

^b [†] p < 0.10 * p < 0.05 ** p < 0.01 *** p < 0.001 (all two tailed tests)

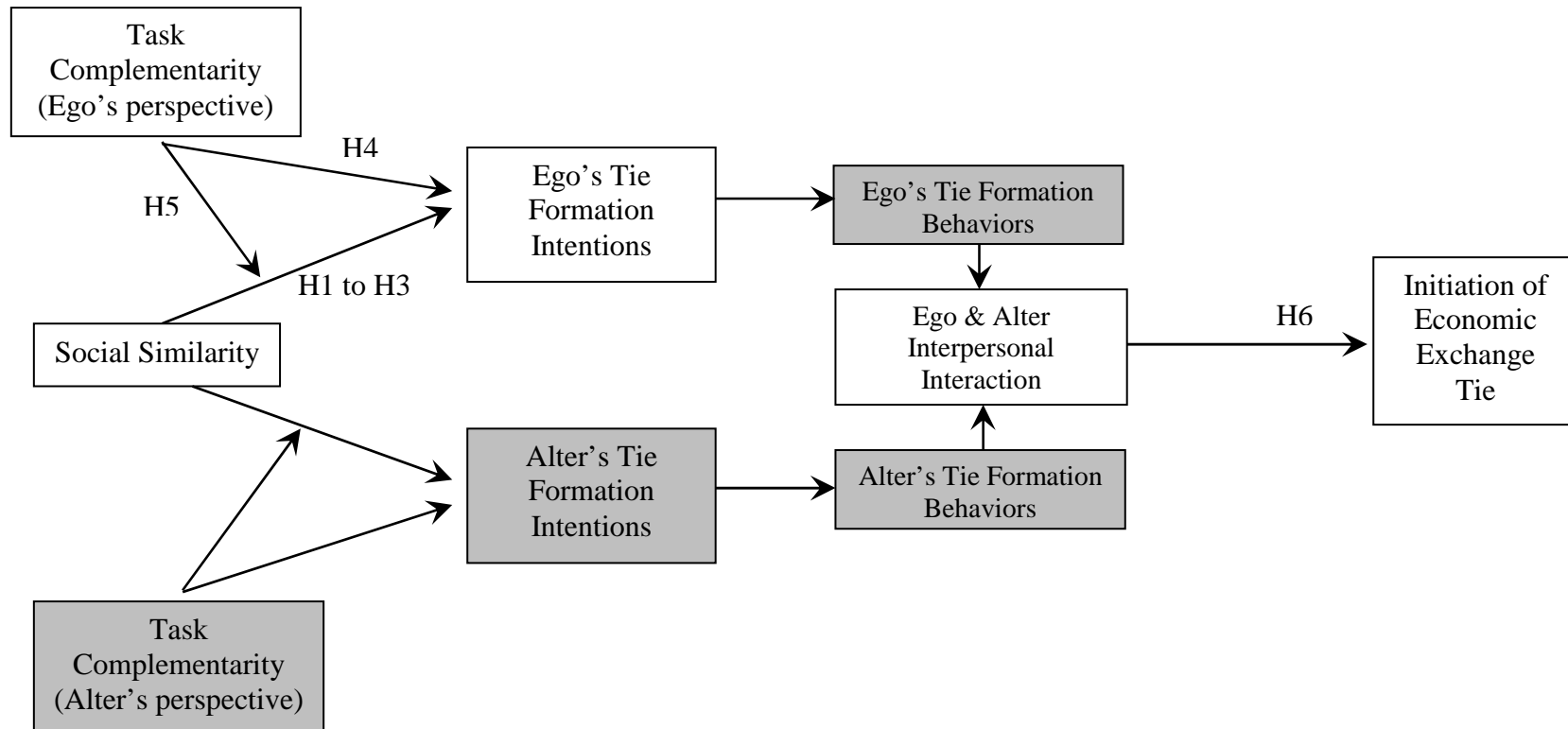
TABLE 3
Logit Analysis Results: Interaction Effects of Task complementarity and Social Similarity^{ab}

	Panel A: Inter-personal Tie Formation Intentions		Panel B: Formation of Inter-Firm Exchange Ties	
	Model 1	Model 2	Model 3	Model 4
Met at professional event	-2.5 ^{***} (-10.5)	-2.5 ^{***} (-10.5)	-0.68 (-1.6)	-0.66 (-1.6)
Met at social event	-3.2 ^{***} (-10.9)	-3.2 ^{***} (-11.0)	-1.2 (-1.5)	-1.2 (-1.5)
Met electronically	-3.4 ^{***} (-10.6)	-3.4 ^{***} (-10.5)	-0.18 (-0.40)	-0.13 (-0.30)
Met elsewhere	-3.2 ^{***} (-10.9)	-3.2 ^{***} (-10.8)	-0.37 (-0.70)	-0.34 (-0.64)
Shared affiliation	0.03 (0.20)	0.03 (0.10)	0.19 (0.30)	0.21 (0.37)
Multiple new persons per org. dummy	0.16 (0.90)	0.17 (0.93)	0.27 (0.8)	0.32 (1.0)
Met through a referral	0.73 ^{***} (3.5)	0.73 ^{***} (3.4)	0.04 (0.40)	0.03 (0.10)
Dormant tie	0.75 ^{**} (2.7)	0.77 ^{**} (2.7)	0.76 (1.5)	0.86 [†] (1.6)
Ethnic Indian	-0.50 (-1.4)	-0.47 (-1.3)	-1.1 (-1.5)	-1.3 [†] (-1.7)
High rank	1.1 ^{***} (3.6)	1.0 ^{***} (3.5)	1.2 [†] (1.8)	1.2 [†] (1.8)
Medium rank	0.56 [†] (1.9)	0.55 [†] (1.8)	1.4 [*] (2.3)	1.5 [*] (2.2)
Founder homophily	0.19 (1.0)	0.44 (1.5)	-0.05 (-0.20)	-0.06 (-0.10)
High caste homophily	0.66 ^{**} (3.0)	1.1 ^{**} (3.4)	-0.05 (-0.10)	-0.15 (-0.30)
Low caste homophily	0.28 (1.2)	0.27 (1.1)	-0.82 [†] (-1.7)	-0.54 (-0.94)
High language homophily	0.39 [*] (2.0)	0.04 (0.1)	0.80 [*] (2.2)	0.86 [*] (2.1)
Low language homophily	-0.25 (-1.0)	-0.22 (-0.8)	-0.29 (-0.50)	-1.20 (-1.3)
High task complementarity	0.08 (0.3)	0.09 (0.3)	0.29 (0.70)	-0.03 (-0.10)
Low task complementarity	-0.58 ^{**} (-3.0)	-0.53 [*] (-2.4)	-1.9 ^{***} (-4.0)	-1.96 ^{**} (-3.0)
Founder homophily x low task complementarity		-0.46 (-1.2)		0.15 (0.20)
High caste homophily x low task complementarity		-0.87 [*] (-2.0)		0.65 (0.70)
Low caste homophily x high task complementarity		-0.05 (-0.10)		-0.91 (-0.94)
High language homophily x low task complementarity		0.65 (1.6)		-0.49 (-0.70)
Low language homophily x high task complementarity		0.01 (0.01)		1.96 [†] (1.8)
Entrepreneur fixed effects	Incl.	Incl.	Incl.	Incl.
Number of observations	1644	1644	792	792
Log pseudolikelihood	-622	-618	-188	-186
Chi square	354 ^{***}	355 ^{***}	125 ^{***}	128 ^{***}
Pseudo R ²	0.36	0.37	0.28	0.29

^a Table reports fixed effect logit analysis coefficients with t-statistics based on robust standard errors in parentheses

^b † p < 0.10 * p < 0.05 ** p < 0.01 *** p < 0.001 (all two tailed tests)

FIGURE 1
Proposed Matching Model of Entrepreneur (Ego)’s Tie Formation Intentions and Initiation of Economic Exchange Tie with Alter^a



^a Constructs in the shaded boxes were not observed in this study.

FIGURE 2
Effects of Caste Similarity and Task Complementarity on Inter-Personal Tie Formation Intentions

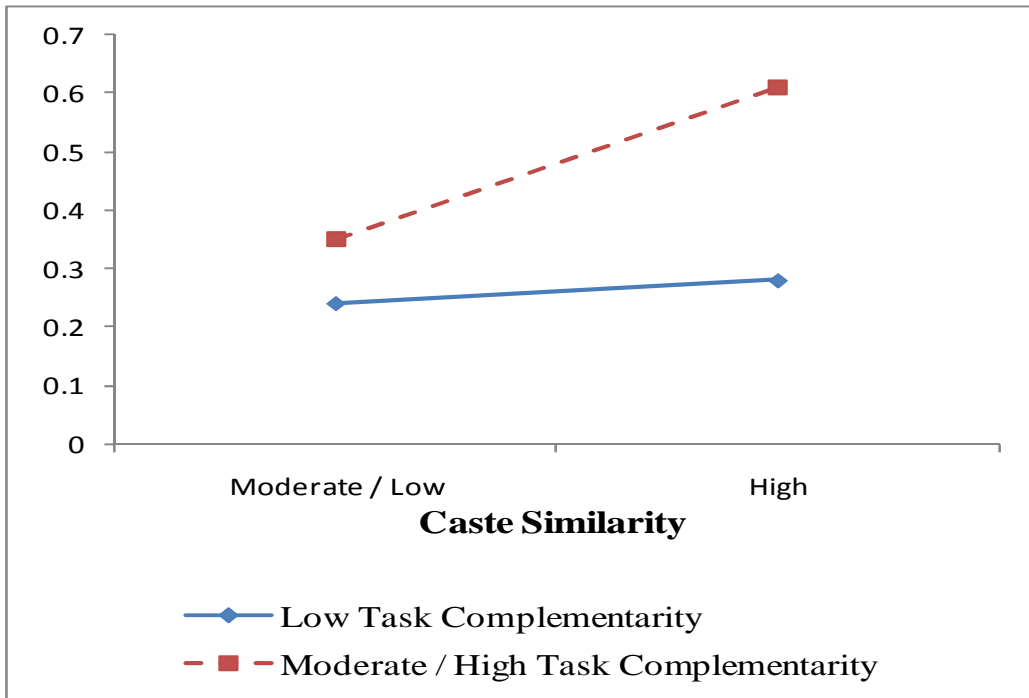
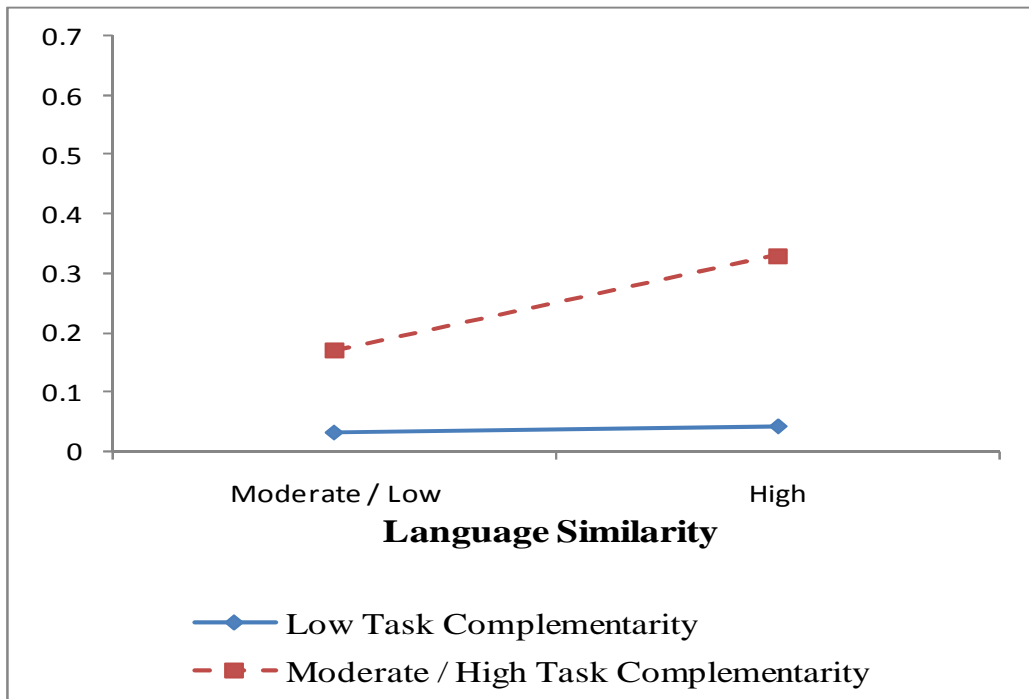


FIGURE 3
Effects of Language Similarity and Task Complementarity on Inter-firm Exchange Tie Formation



Biographical Sketch

Balagopal (Bala) Vissa is Assistant Professor of Entrepreneurship and Family Enterprise at INSEAD. He received his Ph.D. from London Business School. His research examines the link between social ties and entrepreneurial action in emerging economies – both in the context of new ventures by business founders as well as in business group networks.

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