The Experts, Explorers and Brokers: How Do U.S. Venture Capitalists Choose Partners When They Expand into Europe?

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We contrast the two dominant logics of alliance formation and partner selection: embeddedness-affiliation and unembeddedness-innovation, and posit that new entrants may follow one of these two logics depending on the level of market vs. firm uncertainty. Our analysis of U.S. venture capitalist firms' entry into Europe during the period of the 1980s –2000s shows that the resulting network exhibited both the logic of embeddedness-affiliation practiced by VC firms acting as experts and the logic of unembeddedness- innovation practiced by VC firms acting as explorers. Finally, we contend that VCs acting as brokers helped increase the efficacy of information exchange by linking the experts and explorers into a more cohesive network.

INTRODUCTION

How do firms mutually select one another as alliance partners? Economic theories (Axelrod, 1984; Harrigan, 1986; Powell, (1990)) commonly emphasize the benefits of alliances accruing from joint payoffs, strategic interdependence and enhanced flexibility in choosing an ownership structure. These theories, however, do not examine how firms choose particular partners. In contrast, social theories (Granovetter, 1986; Gulati, 1995a, b; Gulati & Gargiulo,1999) emphasize the influence of the past upon current choices (such as preference for familiar partners), the formative nature of embeddedness (Granovetter, 1980), that is, of being rooted in a particular social structure, and the role of homophily (similarity) and transitivity (similarity by association). In this paper, we seek to integrate economic and social approaches toward alliance formation and contrast the two dominant logics of partner choice: the logic of embeddedness- affiliation and the logic of unembeddedness-innovation. Consequently, we propose a new model of partner choice. Previous studies have proposed that market uncertainty vs. firm uncertainty affects firms' willingness to take on familiar vs. new partners (Beckman, Haunschield, & Philips,2004). According to this theory, market uncertainty leads to choosing familiar partners (or "friends") whereas firm uncertainty (regarding the firm choosing a partner) leads to choosing unfamiliar partners (or "strangers"). While adopting the dichotomy of market vs. firm uncertainty, we suggest that the choice described in previous studies is atypical because strong doubts with regard to the ability of the chooser to survive could make the company willing to accept any partners. In contrast, we reconceptualize firm uncertainty as uncertainty regarding partners. Consequently, we contend that firms would choose different strategies in terms of partner choice depending on whether they operate in

environments characterized by high (low) market uncertainty vs. high (low) firm (partner) uncertainty. We apply the resulting theory to new entrants seeking to penetrate new geographic markets. Using the population of U.S. venture capitalist (VC) firms that entered Europe from 1979 to 2006, i.e. provided financing to European ventures, we examine U.S. VCs' alliances (called syndicates) forming U.S. VCs' networks overseas.

THEORY

Research on the Reasons of Alliance Formation

There are a number of alternative explanations within the areas of strategic management and entrepreneurship why firms establish interorganizational relationships collectively known as alliances, and how firms make differentiating choices among potential partners considered for various types of collaborative activities (Oliver, (1990); Gulati, 1995; Gulati & Gargiulo, 1999; Sorenson & Stuart, 2008; Hallen, 2010). Eisenhardt and Schoonhoven (1996) first contrasted strategic and social theories of alliance formation and proposed how to integrate them. Thus, economic theories explained the reasons for alliance formation by expectations of greater payoffs (Axelrod, 1984; Parkhe, 1993); the need to establish industry standards (Porter, (1990); Van de Ven & Polley, 1992); the objectives of risk sharing, cost conservation and attainment of market power (Ohmae, 1989; Hamel et al., 1989), the perceived rewards of gaining access to partners' resources and capabilities (Hennart, 1991; Hagedoorn, 1993); the strategy of creating beachhead for future investment opportunities (Kogut, 1991; Kogut & Kulatilaka, (1994)); and the tasks of restructuring and optimizing transaction costs (Hennart, 1989; Shan, (1990)) and increasing firm flexibility in choosing an appropriate ownership structure: alliance vs. acquisition (Powell, (1990)).

In contrast, social theories approached alliances as a vehicle for enhancing firm legitimacy (Weiwel & Hunter, 1985; Baum & Oliver, 1991); a way of capitalizing on firm status (Podolny, (1994); (2001); Piskorski, (1997)); an action embedded in a social structure with the potential to subsequently transform it (Gulati, 1993; 1995a; b); a reflection of the nature of communities especially conducive to collaboration (Nohria, 1992); and an object of institutional influences and temporary fads contagiously making alliances more or less attractive during some periods (Abrahamson, (1997)). Synthesizing economic and social theories of alliance formation, integrated approaches combined both types of arguments in explaining the reasons for alliance formation. For instance, scholars pointed to managers' social connections as firms' resources or strategic assets (Granovetter, 1992; Heimer, 1992; D'Aveni, (1994)) that could be used for building productive alliances. Respectively, Eisenhardt and Schoonhoven (1996) proposed that companies may develop different rationales for alliance building depending on their available resources, and consequently, strategic strengths or weaknesses. Thus, poorly performing vulnerable firms may use alliances to find a way out of their predicament. In contrast, strong and competitive firms may forge alliances to take advantage of new opportunities. Other studies have examined the impact of firm-specific uncertainty (regarding the adequacy of the chooser's own resources and capabilities) vs. market uncertainty (regarding exogenous changes in the marketplace) on companies' choice of old partners ("friends") vs. new partners ("strangers"). In what follows we will attempt to both reconceptualize and expand this preceding model of partner choice.

The Logic of Embeddedness-Affiliation vs. the Logic of Unembeddedness-Innovation

One could ask four key questions with regard to partner choice. The first question is: should we rather choose an old partner with whom we have worked before or should we rather choose a new partner with whom we have never worked before? This is the old friend vs. new friend query (Beckman et al., 2004). The second question is: should we choose an actor that comes to us recommended by our friends or should we choose someone completely new? In other words, should our choices be influenced by transitivity? This is the familiar face or total stranger query. The third question is: should we choose someone who shares some important similarities with us or choose someone who has nothing in common

with us? In other words, should our choices be influenced by homophily (Gulati, 1995)? This is the look-alike or nothing- like-us query. Finally, the fourth question is: should we choose a friend or enemy as partner? This is the friend or foe query. In what follows, we will argue advancing prior research on alliance formation and partner selection (Podolny, (2001); Beckman et al., 2004; Sorenson & Stewart, 2008; Mitsuhashi & Greve, 2009; Hallen, 2010) that the choice of one of the two opposite logics of embeddedness-affiliation vs. unembeddedness-innovation is influenced by the level and interface of market uncertainty, on the one hand, and firm uncertainty, on the other hand.

Do firms prefer to form alliances with previously selected or new partners? Applying the embeddedness-affiliation logic one can argue that firms commonly prefer repeat partners whom they know personally and with whom they have formed a positively flavored emotional association. This is because choosing tried and true partners allows mitigating uncertainty regarding partner's trustworthiness. In addition, one may argue that old friends are preferable due to informational advantages (Shane & Cable, 2002; Borgatti & Cross, 2003; Gulati & Kettler, 2003). Knowledge about previously chosen partners is readily available. In contrast, new partners may be completely unknown and thus require additional cognitive efforts in order to understand them. One can add to these benefits the existence of common routines that would take time to develop in a fledgling partnership with a new friend (and that may never materialize due to potential culture clashes and the habitual difficulties of culture integration and status quo biases).

Furthermore, old partners may develop useful mental schemas regarding their counterparts' resources and capabilities as well as their expected responses to new ideas, ways of interaction, and their organizational and cultural peculiarities that need to be taken into account. Such expectations are recurrently enacted and confirmed in the process of partner collaboration. The advantage of practical knowledge and readily available if schematic conceptualization of partners' behavior is that they allow quickly getting a new alliance with former partners up to speed. To summarize:

Proposition 1a: Employing the embeddedness-affiliation rationale, firms are more likely to choose repeat partners, or old friends over potential new partners or new friends due to the merits of personal knowledge; common cultural background; informational advantage; collaboratively developed routines and capabilities; decreased anxiety regarding the break of trust and fairness issues; positive emotions concerning concrete individuals and collectives; and fully developed and enacted schematic representations of old friends that allow strengthening a new collaborative engagement.

At the same time, an opposite approach toward choosing new vs. old partners could be based on the logic of unembeddedness-innovation. One may point out that the initial distrust when starting a new relationship could be quickly overcome by using the signs of reputation and legitimacy that are readily available in the professional context (Shane & Cable, 2002; Rindova & Pollock, 2004; Certo, 2005). Moreover, positive emotions could be generated almost immediately if a new alliance is mutually enriching (new friends may be more exciting than old ones!); that new contacts may provide intellectual stimulation so that collaboration with novel partners may result in enhanced productivity and innovation. Along with these benefits that may potentially accrue to a synergistic new relationship, selection of new friends can be spurred by the intention to elude some negative aspects of the existing relationship (just like the selection of old friends is often facilitated by fears that making new friends would initially necessitate hard work and potentially present some problems of rigidity, cultural differences and creeping opportunism). The dark side of old friendships includes cognitive boredom and lack of stimulation leading to lethargy and routinization of interactions resulting in a lack of refinement. Hence, new alliances may benefit in comparison with the negative manifestations of old alliances. To summarize:

Proposition 1b: Employing the unembeddedness-innovation rationale, firms are more likely to choose new partners, or new friends over repeat partners since they can effectively use the appropriate professionally salient signs of legitimacy and reputation to reduce partner uncertainty and potentially gain access to more advanced and innovative partners compared to old friends, and consequently engender a competitive advantage by developing new collectively held routines and capabilities better fitting the transforming competitive landscape while overcoming the

lethargy and cognitive boredom often associated with the long-standing collaborative relationships.

In a similar vein, the Familiar Face or Total Stranger question can be resolved using the embedddedness-affiliation logic to argue that friends of friends would be easier to comprehend. In other words, getting to know familiar faces (people with whom you have not previously worked but heard about from mutual acquaintances) would require less cognitive effort. The mental schemas formed in prior relationships may often be successfully applied to new friends that share the same background and come recommended by mutual friends. This also provides a good reason for choosing familiar faces over strangers. Familiar faces could be expected to act responsibly since acting otherwise would jeopardize their relationships with allies or friends. Furthermore, familiar faces may allow some element of novelty thus providing a jolt to the existing routines and capabilities that may need to be readjusted. Yet, they guarantee sufficient commonality so that the necessary changes could be accomplished through affable, open communications. To summarize:

> Proposition 2a: Employing the embeddedness-affiliation rationale, firms are more likely to choose familiar faces, or new friends referred by old friends over total strangers due to the merits of common background, previous if less involved interactions, similar behavioral patterns, residual knowledge, decreased cognitive effort, and expectations of trustworthiness; the transitivity of affiliation and new partners' embeddedness in the same or similar network could be expected to provide an additional advantage of capabilities renewal through interactions with new partners that can facilitate the process of change in the most affable and accommodating manner.

Naturally, the question of whether familiar faces or total strangers would provide superior opportunities may also be resolved applying the unembeddedness-innovation logic. Concerns about professional reputation are typically sufficient to make companies behave in a dependable manner (since information about their previous activities can easily be obtained). In addition, total strangers may offer a very valuable approach that may not be available from the familiar faces. New partners may induce switching to radically different and even revolutionary modes of practice instead of merely helping to upgrade previously existing resources and capabilities. Furthermore, familiar faces may create some threats of new knowledge spillover to former contacts. Total strangers are unlikely to channel new knowledge back since their own network may be different and unlikely to benefit from such information. In addition, they can help establish contacts with their familiar faces. That would provide advantages to the firm within its network. The firm could outsmart its own old friends, and expand and enhance its area of influence. To summarize:

> Proposition 2b: Employing the unembeddedness-innovation rationale, firms will be more likely to choose total strangers over familiar faces since they can mitigate partner uncertainty by gaining access to potential partners' previous collaborative activities while potentially benefiting from new approaches and distinct routines developed by strangers; such strangers may not spill over new routines developed in the alliance back to the existing network and could provide access to their familiar faces which would fortify the focal firm's positioning in its own social network.

Answering the third question (Look-alike or Nothing like me?), the embeddedness- affiliation logic would suggest embracing look-alikes, that is partners with similar attributes or structural roles. Thus, large firms may prefer collaborating with other large firms and well- connected firms may prefer collaborating with other well-connected firms. The advantage of such a homophilic approach is that similar partners are likely to experience similar problems and encounter similar opportunities. This could facilitate the process of information and knowledge exchange, help in establishing common objectives, and formulating agreed-upon implementation schedules. To summarize:

> Proposition 3a: Employing the embeddedness-affiliation rationale, firms are more likely to choose a look-alike over a nothing-like-me partner because of expected exposure to the same opportunities and threats, an enhanced potential for information and knowledge exchange and the prospects of mutual understanding and setting common objectives and implementation methods.

Applying the unembeddedness-novelty logic, though, would cast into doubt the creativity of an alliance between similar partners and emphasize the advantages of collaboration between and among dissimilar partners that may enjoy unequal power within the same network or come from different networks. Such advantages could accrue due to power and status arbitrage and tradeoffs. Thus, high-flying partners could obtain some important benefits in return for their endorsement of less powerful parties as allies that they would not receive in a more balanced relationship (Piskorski, 2006). In turn, less powerful partners could be able to gradually boost their reputation and obtain other important endorsements through their contacts with higher status allies. Hence, ventures may overpay for their association with top-notch venture capitalist firms (Florin, 2005; Hsu, 2000), but in this way they may also gain access to important resources (such as prestigious investment bankers) that would not otherwise be available to them. As a result, a certain amount of sacrifice (overpaying for benefits compared to those available from less prestigious partners) could pay off by giving access to benefits unavailable from other partners. To summarize:

> Proposition 3b: Employing the unembeddedness-novelty logic, firms are more likely to choose a nothing-like-me than a look-alike partner due the possibilities of using power and status arbitrage and respective tradeoffs in which partners higher in power and status could pay less to obtain some new privileges whereas partners lower in power and status could obtain access to other powerful and high in status partners and the associated advantages of their patronage as well as potentially increase their own status through cumulative interactions with more prestigious partners.

Finally, the fourth (Friend or Foe?) question could be resolved by using the embeddedness-affiliation logic in favor of friends. Applying theory of social capital (Bourdieu, 1987; Coleman, (1990)), one could argue that collaboration with friends creates a chain of reciprocal acts of favor asking and giving that cement social cohesion. Partners can also accumulate social capital and transfer it into other forms of capital as they enjoy enhanced access to friends' friends throughout the entire social fabric. Alluding to the six degrees of separation approach, one could argue that in the resulting small world friends can reap the substantial advantages of having the right kind of currency – social capital – to make their dealings run smoothly. To summarize:

> Proposition 4a: Employing the embeddedness-affiliation logic, forming new alliances with friends is superior in value to forging alliances with enemies due to the fact that credit obtained in interactions with friends could be built and aggregated over time (accumulation), used in dealings with friends' friends (transitivity), and moved to other forms of capital if needed (transferal).

While these arguments may seem compelling, the unembeddedness-innovation logic may provide equally attractive alternatives. Of course, sleeping with the enemy may be interpreted as breaking trust with existing friends and allies. However, it can help neutralize enemies and potentially try to convert them into friends and allies. Switching from confrontation to cooperation may afford numerous advantages such as peace and lack of conflict not only in the areas of explicit collaboration but also in other areas where partners may tolerate one another. It can also entail some long-term benefits by creating a reputation of being a reasonable and sensible actor that can forge a compromise and truce with the enemy and can be trusted to honor agreements. To summarize:

> Proposition 4b: Employing the unembeddedness-innovation logic, one can argue that collaboration with enemies is superior in value to collaboration with friends since it ensures peace and ability to operate without fear of an unexpected attack, and can neutralize even inveterate enemies and turn them into allies; alliances with enemies can also provide an exposure to a contrary mindset and help develop some new resources and capabilities as a result of cross-fertilization.

Alliance Formation and Partner Selection

Firms may face two types of uncertainty (Beckman et al., 2004). The first type of uncertainty loosely associated with the notion of nonsystematic risk in finance ("firm-specific uncertainty") relates to the firm's resources and capabilities and questions their adequacy for developing effective solutions and prevailing over other firms in the industry. The second type of uncertainty (similar to systematic risk in finance) is called market uncertainty. It relates to broad market conditions, for instance, fluctuating demand for industry products. Beckman et al. (2004) argued that firms are more likely to select old (or repeat) partners (or apply the logic of exploitation) when responding to enhanced market uncertainty that makes partner quality critical for survival (Podolny, (1994); (2001)). Conversely, firms respond to enhanced firm-specific uncertainty by selecting new partners (or applying the logic of exploration) since the broadening of their network (by employing weak ties) may furnish valuable methods for solving difficult problems (Beckman et al., 2004).

Building on prior research (Podolny, (2001); Beckman et al., 2004), we propose that firms may either use the embeddedness-affiliation logic (choose old allies rather than new allies, choose familiar faces rather than total strangers, choose look-alike partners rather than nothing- like-me partners and choose friends rather than foes) or use the unembeddedness-innovation logic (choose new instead of old allies, choose total strangers instead of familiar faces, choose nothing-like-me partners instead of look-alike partners and choose foes instead of friends). Under what circumstances are firms more likely to utilize these two opposite logics? Beckman et al. (2004) argued that choosing new suppliers could be more likely under enhanced firm-specific uncertainty than under increased market uncertainty. When companies facing increased firm- specific uncertainty want to prove to clients that their technology works, they may endorse not very reputable suppliers if the latter are in possession of some unique even if novel and untested products (Bide, 2002; Beckman et al., 2004).

This explanation rings true but appears to represent a very particular case when firms face such difficult problems that they are ready (seemingly out of desperation) to endorse new and unfamiliar partners (or even agree to alliances with the enemy). In contrast, we propose a broader conceptualization of the relationship between market and firm uncertainty (we prefer the term firm uncertainty to firm-specific uncertainty). First of all, uncertainty may concern not only the firm itself and the market as whole but also potential allies. In fact, we suggest that this is a more typical situation (when the firm itself is in such trouble that it is ready to endorse any ally as a savior, it is apparently experiencing some crisis that deserves a separate consideration). Normally, uncertainty may relate to markets or individual partners. We propose that that there are four types of interaction between market and firm uncertainty that dictate endorsing different strategies. Table 1 below presents the four different scenarios regarding market vs. firm uncertainty. (See Appendix – Table 1)

The first situation is when both market uncertainty and firm uncertainty is high. In other words, a firm is considering entry into a new market and it needs partners but does not have enough information about the incumbents. We propose that in this situation, firms may consider four types of candidates: (1) old friends (repeat partners); (2) familiar faces (new partners recommended by old friends or sharing the same background but without prior history of collaboration); (3) total strangers (partners coming from a different background that cannot be recommended by friends or acquaintances who are not familiar with them); and (4) foes (actors that could be familiar because of previous hostilities but that do not have prior history of collaboration). Due to the fact that both market uncertainty and firm uncertainty is high (regarding the incumbents), new entrants are likely to choose either friends or at least friends of friends. The choice of friends (old partners) is dominant because it allows greatest reduction of firm uncertainty. Therefore, new entrants could use the logic of embeddedness-affiliation I (choose old friends over new friends) and try to enter the industry in alliances with their former partners.

The second situation is when market uncertainty is low but firm uncertainty is high. Let us say the firm has the same four choices. Since market uncertainty is low, a new entrant could feel more at ease and be more willing to experiment. Under these circumstances, choice of familiar faces could be superior to choice of old friends. This is because one could learn more from familiar faces without encountering too much risk (fortunately, market uncertainty is low). Therefore, the new entrants would choose familiar

faces over old friends, total strangers and enemies and apply embeddedness-affiliation strategy II. The third situation is when market uncertainty is high and firm uncertainty is low. Under these conditions, new entrants are likely to use industry incumbents since information about them is readily available and they may have specific skills or resources to help cope with high market uncertainty. Alternatively, new entrants may form alliances with other new entrants that are, however, total strangers to them. Thus, the new entrants would use unembeddedness-innovation strategy. The final situation is when both market uncertainty and firm uncertainty is low. In other words, the market may be quite stable and information about the incumbents is readily available. In this situation, there are few additional advantages to using the logic of embeddedness-affiliation and the strategy of unembeddedness-innovation I could be used instead. Furthermore, alliances with enemies could be sought to maximize the learning advantage without encountering unduly risks or potential problems. Hence, the strategy of unembeddedness-innovation II could be practiced by new entrants. To summarize:

> Proposition 5a: When market uncertainty and firm uncertainty is high, new entrants are likely to utilize the logic of embeddedness- affiliation I, i.e. to invite old friends to eliminate at least firm uncertainty.

> Proposition 5b: When market uncertainty is low and firm uncertainty is high, new entrants are likely to utilize the logic of embeddedness- affiliation II, i.e., use familiar faces to reduce firm uncertainty while also be able to experiment to a larger degree than would be feasible with old friends.

> Proposition 5c: When market uncertainty is high and firm uncertainty is low, new entrants are likely to use the logic of unembeddedness- innovation I, i.e. use total strangers (for instance, the incumbents or other new entrants with different background) in order to enhance the cognitive advantage.

> Proposition 5d: When market uncertainty and firm uncertainty is low, new entrants are likely to use the logic of unembeddedness-innovation II, i.e. utilize enemies to improve their overall situation since alliances with former enemies could be advantageous both cognitively and strategically.

Table 1 summarizes the four scenarios: high (low) market uncertainty vs. high (low) firm uncertainty.

Let us focus on the first situation, that is, when market uncertainty and firm uncertainty is high so that the new entrants decide to come in with their own partners. This may lead to the creation of close-knit clusters that would be difficult for outsiders to penetrate. However, the new entry will gradually reduce the level of market uncertainty so that subsequent new entrants could make different choices. Instead of using their old partners, such newer entrants could form more opportunistic alliances and use the logic of unembeddedness-innovation instead of the logic of embeddedness-affiliation. Facing close-knit networks of the first-mover new entrants and the considerable uncertainty regarding the incumbents they may form alliances with other new entrants. As the industry landscape may become increasingly motley with the incumbents, first- mover-entrants and super-nova entrants forming different and hardly interacting clusters, some firms may decide to take on the role of brokers and help connect previously unconnected clusters. As a result, the industry may consist of four distinct types of players: (1) the incumbents; (2) the experts (first-mover entrants with the most experience of operating in the industry compared to other new entrants); (3) the explorers; and (4) the brokers or exchange agents. To summarize:

> Proposition 6a: First-mover new entrants into industries characterized by high market uncertainty-high firm uncertainty will act as experts unwilling to mix with subsequent new entrants and will use the logic of embeddedness-affiliation rather than unembeddedness-innovation.

> Proposition 6b: As high market uncertainty subsides, subsequent new entrants will act as explorers and use the logic of unembeddedness-innovation rather than that of embeddedness-affiliation.

> Proposition 6c: As the industry composition changes to that of diverse and unconnected clusters, a new category of players will act as brokers or exchange agents to form a suitable compromise

between the two opposite logics of embeddedness-affiliation rather and unembeddedness-innovation.

U.S. VCs Expand into Europe

To test our hypotheses, we chose U.S. VC firms' financing of European new ventures that represent greater market uncertainty (Europe is a new market for U.S. VCs) and greater firm-specific uncertainty with regard to European VCs as potential allies. Venture capital is actively globalizing these days (Megginson, 2004; Wright, Pruthi, & Lockett, 2005). For instance, in Europe 45% of VC's inflows and 29% of VC's outflows is international (Wright et al., 2005). Yet little is known about how venture capitalists (VCs) strategize when they go overseas. Do they form interorganizational relationships or alliances (called syndicates in the VC industry) as they typically do in structuring their domestic transactions and if so, do the patterns of syndication change when they go overseas? While syndication is very common in the VC industry, its modes significantly differ by region and country. U.S. VCs syndicate more often than VCs in other countries. Furthermore, U.S. VCs understand their responsibilities to a new venture differently compared, for instance, with European VCs. While European VCs describe syndication as an effort to share risk and expenditures, U.S. VCs emphasize that they collaborate with each other to enhance the added value of their collective contributions to the financed ventures (Manigart et al., 2000; Wright & Lockett, 2005). Given the fact that there is a substantial difference in the way U.S. VCs and European VCs approach interorganizational alliances or syndicates, it appears quite plausible that U.S. VCs would prefer to syndicate with each other even when they go overseas or at least keep some of their U.S. partners on board (literally, on board of directors of financed companies) even as they may use some local VCs to filter through the available candidates for financing. Having more U.S. partners in the syndicates formed for financing European companies could make it easier for U.S. VCs to insist on their mission to provide value-added services to financed companies. An additional rationale for asking old friends instead of looking for new friends could be that the European marketplace for VC investment presents a number of challenges that enhance firm uncertainty compared to operating in the U.S. European VCs prefer to finance established businesses rather than startups and this could dramatically increase the number of early-stage European companies applying for U.S. money. U.S. VCs operating in Europe could be inundated by such new venture proposals and yet be less culturally savvy than at home which would make it harder to differentiate between worthwhile and worthless proposals. Because of the enhanced firm uncertainty (will we be able to cope with the increased ambiguity of choices and the so called liability of newness in the foreign markets?), U.S. VCs may rely on the logic of embeddedness-affiliation in their choice of syndication partners (other VCs they ask to join a syndicate). Facing such increased firm uncertainty, U.S. VCs may decide to stick to their established partners with whom they share a common learning experience and form a community of experts that is gradually becoming more and more apt at dealing with the complicated issue of financing foreign companies. Putting in so much effort to learn the ropes, U.S. VCs may feel that they do not want to share their expertise with other U.S. VCs, super-nova entrants coming into the European market and rather repeatedly choose the same established, tried and true VC partners. This is because the first-move entrants may develop additional complementarity with their partners and begin to feel like experts in the new, uncertain market unwilling to share their competence with other U.S. VCs that have not sacrificed as they have to enter these uncertain markets. To summarize:

> Hypothesis 1: Under high firm uncertainty combined with high market uncertainty, U.S. VCs will use the logic of embeddedness-affiliation I, i.e. invite former U.S. partners to join their alliances.

An interesting question remains, however: on what grounds will U.S. VCs choose their initial partners out of the entire population of U.S. VCs expanding into Europe? We propose that the metaphor of a class of students could provide us some guidelines for answering this question. Members of a graduating class often keep in touch and maintain useful social and professional connections. By analogy, it is possible to hypothesize that VC firms founded around the same time would have a chance to forge social contacts through seminars and conferences common in the VC industry. Subsequently, VCs could rely on their old network in forming alliances. To summarize:

Hypothesis 2: Under increased market uncertainty combined with increased firm-specific uncertainty, U.S. VCs will invite other U.S. VCs founded around the same time to join their syndicates.

Once first-mover VCs enter the European markets, they could be followed by new and new waves of U.S. VCs following into their footsteps. Since the first generation of U.S. VCs may form difficult to penetrate cliques, and the incumbents exhibit high firm uncertainty due to their different understanding of VCs' duties and responsibilities, the new entrants may act as explorers rather than as experts and apply the logic of unembeddedness-innovation. Hence, they will form opportunistic alliances with one another based on common purpose rather than prior history. To summarize:

Hypothesis 3: Subsequent U.S. VCs entering the European market will form alliances with one another and use the logic of logic of embeddedness-innovation II (choose familiar faces over total strangers).

As the market becomes increasingly diverse with different groups of VCs forming distinct and isolated networks, some U.S. VCs may decide to build relationships with both groups, and therefore, begin acting as brokers as opposed to acting as experts or as explorers. Since all the groups may benefit from such intermediation and brokerage, they would be likely to accept an offer. The benefit of brokerage could be that each cluster may retain its separateness but benefit from business communication and information exchange if there is some need for that.

Hypothesis 4: As the industry becomes increasingly diverse, and may benefit from increased connectivity and information exchange, new categories of U.S. VC-brokers will apply the logic of embeddedness-affiliation and the logic of unembeddedness-innovation to accomplish these tasks.

METHODS

To test our hypotheses, we applied the methods of Social Network Analysis (SNA). SNA utilizes quantitative measurement to examine the structure and profile of a network, and the types of interaction among its members. The basic component of SNA is the actor or node. The nodes can designate individuals, organizations, or communities (Borgatti, 1998). The links between nodes can describe multiple types of relations among the actors. They are used to advance understanding of the effects of social structure upon individual members as well as the community as a whole (Freeman, 1979). In this study, we analyzed the network characteristics of the entire population of U.S. VC firms that have invested into European markets from 12/31/1979 to 10/31/2006. We have downloaded our dataset from Venture Xpert, part of SDC Platinum maintained by Thomson Financial. After omitting missing, incomplete or undisclosed data (the identity of many U.S. investors has not been disclosed), we ended up with a dataset including 95 U.S. VC firms that have invested in European ventures and formed an investment network.

SNA typically applies a binary scale which involves assigning a "0" when no relationship exists between two parties and assigning a "1" when a relationship exists. For the purposes of this study, we assigned a "1" if two VC firms have been simultaneously involved in the same investment alliance or syndicate and assigned a "0" when two VC firms have not been part of the same investment syndicate. An example of an adjacency matrix we created is presented in the Appendix - Table 2.

We have analyzed the resulting matrices using UCInet, the software employed for the purposes of SNA. Specifically, we applied a K-core analysis to establish the overall structure and particular clusters of U.S. VCs operating in Europe. The K Core stands for a maximal group of actors, all of whom are connected to some number (k) of other group members. When plotting K-Cores, the varying values of connectedness will create a picture of a subset of the group members of the team (Hanneman, (2001)). This analysis examines actors joining the group if connected by K members. In other words, a K-core is a subgroup in which each node is adjacent to at least a minimum number (k), of the other nodes in the subgroup (Wassermann & Faust, (1994): 266).

Results

Confirming hypothesis 1, SNA shows that U.S. VCs expanding into Europe systematically invited the same U.S. VCs as partners. The recurrent U.S. VCs' syndicates in Europe formed as a result of inviting old friends can be characterized as tightly-knit clusters. Figure 1 presents a typical cluster that provided financing to European new ventures. Since these VCs were the first to enter Europe and continued collaborating with one another (while not collaborating with other U.S. VCs) their behavior fits the previously introduced category of the experts. (See Appendix – Figure 1)

Intriguingly, the group with the highest K core scores was tightly connected internally but not externally. Typically, actors with the highest K-core score will have the highest connectedness within the network. However, in this case actors with the highest K-core scores formed a distinct subgroup, as seen in the Appendix - Figure 2, in which the highest K-core scores were isolated by K-Core score.

This internally cohesive group clearly stands out within the parent network. Curiously, its members did not form consistent ties with the remainder of the network. Typically actors with the highest K-core scores are embedded the most within the network. However, within the analyzed network, the group with the highest K-core score did not play the role of broker in the network but stood apart. This confirms hypothesis 1 that under increased firm uncertainty, U.S. VCs will use the logic of embeddedness-affiliation rather than the logic of unembeddedness- innovation and keep inviting the same partners to their alliances. In contrast, the rest of the network consisted of rather sporadic groups of VCs forming alliances on the spot and changing partners quite often instead of sticking to the same partners. This confirms hypothesis 3 that some VCs may act as explorers and apply the logic of unembeddedness-innovation rather than embeddedness-affiliation. Finally, confirming hypothesis 4, some new VCs played the role of brokers connecting different clusters into a cohesive network. Specifically, network members with the median K-core score, as seen in the Appendix - Figure 3 (black dot cluster), played the broker role in the network.

Seeking an explanation for the patterns of intergroup selection, an attribute analysis was conducted. The following attributes were compared and analyzed within the network model: number of companies in which the VC firms have invested; type of investment preference (early stage vs. later stage), the year a VC firm was founded; amount of capital under a VC firm's management, and the first year of entry into the European market. Importantly, the firms that were founded in the 1980s had a majority of the highest K-core scores as seen in Figure 4 and formed a tightly knit group. This confirms hypothesis 2 that U.S. VCs firms founded around the same time (and thus members of the same graduating class) could be expected to act together in their international expansion. Figure 4 (See Appendix) displays the entire network of U.S. VCs operating in Europe.

DISCUSSION AND CONCLUSIONS

Prior research on strategic alliances has been split between economic approaches that have focused on examining the rationales for alliance formation but not alliance partner selection (Axelrod, 1968; Harrigan, 1985), and social approaches that have focused on the rationales for alliance partner selection (Gulati, 1995; 1999; Gulati & Gargiulo, 1999). Based on the three concepts of embeddedness, homophily and transitivity, social theories heavily emphasized the advantages of choosing familiar and similar partners versus choosing unfamiliar and dissimilar partners. As Shane and Cable (2002) pointed out, social theories of alliance formation have been preponderantly poised against economic approaches, such as transaction cost theory (Williamson, 1987) that regarded markets and hierarchies as the two most important forms of transactional environments. In contrast, social theories emphasized the advantages of alliances as an alternative organizational types based on building trust through strong ties and close collaboration. Even though social theorists acknowledged the dark side of alliances with habitual partners (Gulati, 1995), they were focused on demonstrating the advantages of trust enhancing collaboration.

Shane and Cable (2002) argued, however, that the merits of choosing familiar partners could mostly stem from their informational advantage rather than from the concomitant logic of social obligation. Other scholars attempted to integrate economic and social approaches by arguing that firms' resources

and relative strength or vulnerability could affect their patterns of collaboration (Eisenhardt & Schoonhoven, 1996). In addition, Beckman et al. (2004) developed a contingency approach in the area of partner selection by contrasting choice of friends vs. strangers depending on the prevailing type of uncertainty (market uncertainty vs. firm-specific uncertainty) affecting firms' decisions (Beckman et al., 2004). In contrast, Hallen (2010) argued that partners can be chosen based not only on similarity or transitivity by also based on accomplishment.

Building on studies introducing a contingent approach toward alliance formation and partner selection, we identified four debates in the literature regarding the advantages of choosing familiar versus unfamiliar, similar versus dissimilar and friendly versus previously hostile partners. Contrasting the embeddedness-affiliation logic to the unembeddedness-innovation logic, we argued that both may be compelling and that firms may choose one of these logics depending on whether (1) both market uncertainty and firm uncertainty is high (the logic of embeddedness-affiliation I prevails); (2) market uncertainty is low and firm uncertainty is high low (the logic of embeddedness-affiliation II prevails); (3) market uncertainty is high but firm uncertainty is low (the logic of unembeddedness-innovation I prevails); and (4) both market uncertainty and firm uncertainty is low (the logic of unembeddedness-innovation II prevails); Moreover, we predicted that actors' agents (new entry) may change the situation as market uncertainty could subside as a result. That would lead to subsequent new entry that may follow a different logic of unembeddedness-innovation, that is, form alliances with one another. There are two reasons for this conduct. First, the original new entrants may form exclusive clusters of experts. Second, the incumbents may retain their high uncertainty. Finally, we predicted that brokers will appear to connect the rather separate clusters to benefit from more cohesion.

Our analysis of a particular network formed by U.S. VCs expanding into Europe showed that firms founded about the same time (we described them as the members of a graduating class) formed cohesive clusters within a larger network that was most actively collaborating with each other and not mixing with other U.S. VCs coming into Europe and forming their own subgroups (with much weaker connections). Finally, we discovered the existence of broker firms (with medium K scores) that connected the K-core group with other subgroups in the entire network of U.S. VCs expanding into Europe. Thus, SNA (strategic network analysis) confirmed our hypothesis that firms acting under enhanced market and firm uncertainty choose to band together and form an expert community while refusing to collaborate with less involved and informed actors. Moreover, our analysis provides evidence that market uncertainty may subside as a result of new entry leading to new choices and patterns of behavior practiced by allies and competitors.

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APPENDIX

TABLE 1
MARKET VS. FIRM UNCERTAINTY & PARTNER CHOICE

Firm Uncertainty		
Market Uncertainty	**High**	**Low**
High	Embeddedness-affiliation I: choosing old friends over new friends	Unembeddedness-innovation I: choosing total strangers over look-alikes
Low	Embeddedness-affiliation II: choosing familiar faces over total strangers	Unembeddedness-innovation II: choosing enemies over friends

TABLE 2
MATRIX DATA SET OF INTERACTIONS BY MONTH

	ABN AMRO Private Equity (AKA: ABN AMRO Capital (USA) Inc.)	Accenture Technology Ventures (FKA: AC Ventures)	Advent International	AIG Global Investment Group	Alta Partners	Apollo Management (FKA: Apollo Advisors L.P.)	Astellas Venture Capital (FKA: Yamanouchi Venture Capital)	AT&T Corp	Atlas Venture, Ltd.
ABN AMRO Private Equity (AKA: ABN AMRO Capital (USA) Inc.)	-	0	0	0	0	0	0	0	0
Accenture Technology Ventures (FKA: AC Ventures)	0	-	0		0	0	0	0	1
Advent International	0	0	-		0	0	0	1	1
AIG Global Investment Group	0	0	0	-		0	0	0	0
Alta Partners	0	0	0	0	-		0	0	1
Apollo Management (FKA: Apollo Advisors L.P.)	0	0	0	0	0	-		0	0
Astellas Venture Capital (FKA: Yamanouchi Venture Capital)	0	0	0	0	0	0	-		1
AT&T Corp	0	0	1	0	0	0	0	-	1
Atlas Venture, Ltd.	0	1	1	0	1	0	1	1	-

FIGURE 1
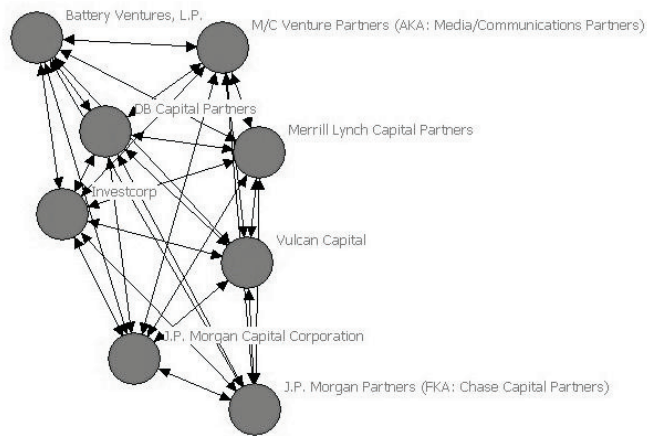## THE EXPERTS (A TYPICAL CLUSTER)

FIGURE 2
THE HIGHLY NETWORKED EXPERTS (THE FIRST MOVERS) SURROUNDED BY
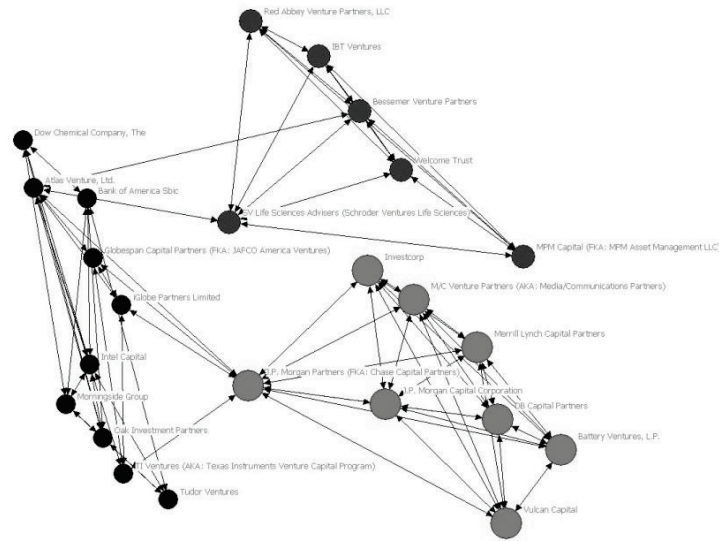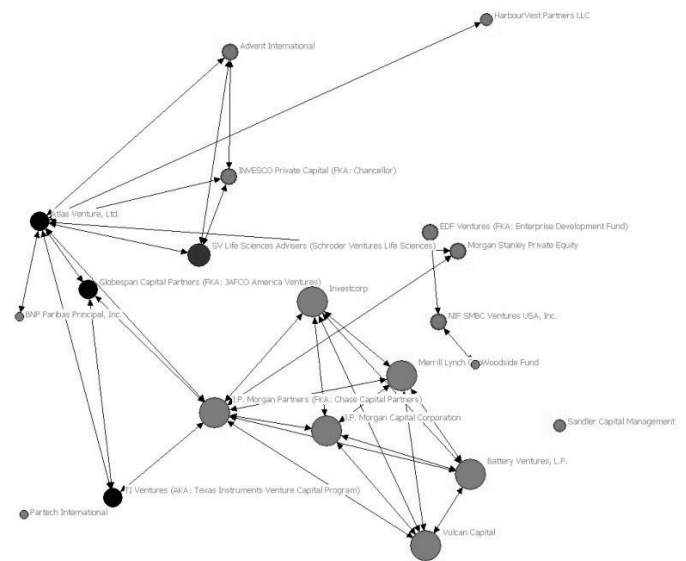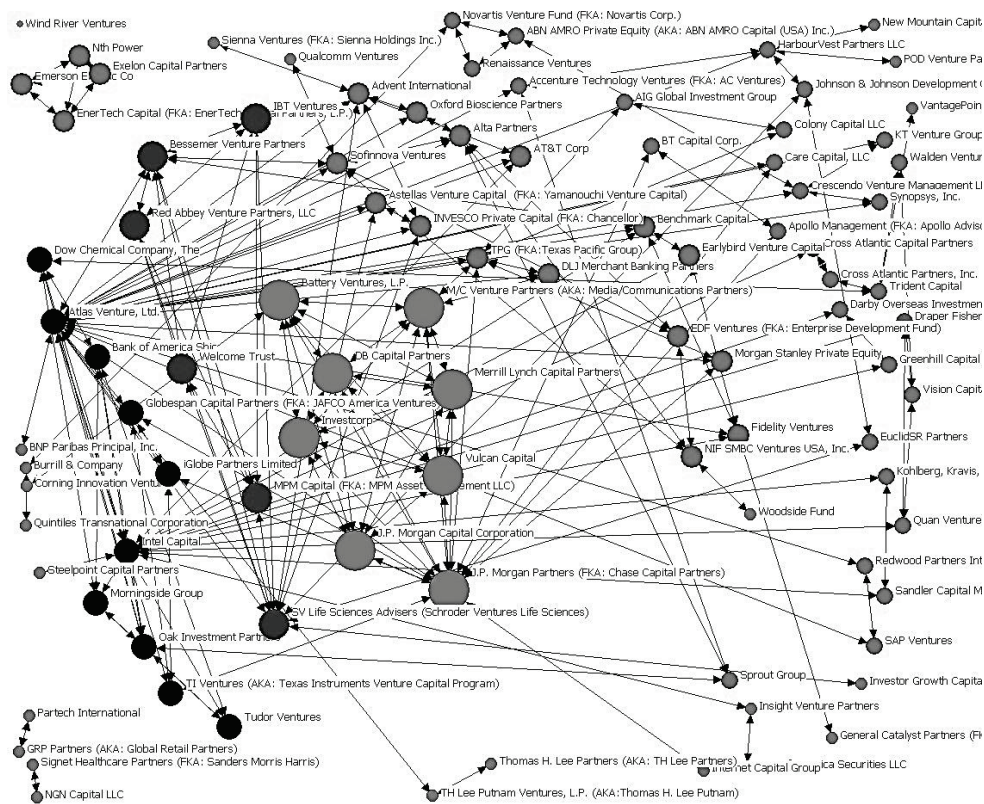**MUCH LESS NETWORKED EXPLORERS (THE SECOND-MOVERS)**

FIGURE 3
THE BROKERS

FIGURE 4
THE ENTIRE NETWORK OF U.S. VCs OPERATING IN EUROPE (95 COMPANIES)