## Table 1: linkage formation

| *Author(s)* | *Focus of study / ION dynamic* | *Description of network* | *Longit.* | *Given theoretical mechanism* | *ET mechanisms* | *Evolutionary analogy* |
|---|---|---|---|---|---|---|
| Ahuja, G. (2000b). Strategic Management Journal, 21(3) | Linkage formation as a function of a firm's inducement and opportunities. | Technical collaborative linkages in the global chemicals industry. (1979–91) | Y | (A: opportunity) The greater a firm's stock of technical and commercial capital, the greater the firm's collaboration opportunities;<br>(B: inducement) However, when both capitals are high, the inducement to form linkages decreases as the need for resources decreases and competitive strength is high;<br>(C: both) Highly embedded firms (with no inducement) and least embedded firms (with no opportunities) will form few linkages relative to moderately embedded firms;<br>(D: alternative) A firm's creation of an important invention provides an additional path to linkage formation for firms that lack the three tenure-based advantages. | (A) Sexual selection (female choice);<br>(B) Ecology (selfish gene);<br>(C) Interplay between female choice and ecology;<br>(D) Variation through mutation. | (A) Firm's with high level of capital (high fitness) are preferred by potential partners increasing it's opportunities to form linkages;<br>(B) When there is no need to acquire resources (or: develop variation) as the organism has higher survival chances on its own, the best survival strategy is that of a selfishness;<br>(C) Firms with no need or no chance to form linkages, form less linkages than mediocre firms;<br>(D) A self developed highly innovative concept (variation) may suddenly increase attractiveness (sexual selection). |
| Stuart, T. E. (1998). Administrative Science Quarterly, 43(3) | Linkage formation as a function of a firm's technological position. | Alliances in semiconductor firms (six year period) | Y | Firms in crowded positions (participate in technological segments in which many firms actively innovate) and those with high prestige (track record of developing seminal inventions) form alliances at the highest rates | Sexual selection;<br>Probability theory | Access to resources/partners (crowded positions) and fitness (prestige) increases desirability of a potential partner and thus its opportunities to form linkages. And crowded populations increase stability (probability theory). |
| Gimeno, J. (2004). Academy Of Management Journal, 47(6) | Linkage formation as a result of a firm's exposure to rival's alliancing activities. | Global airline industry (1994-98) | Y | Firms react strategically to rivals' alliancing activities by either allying with those rival's partners (when rival's alliance is non-specialized) or by building countervailing alliances (when rival's alliance is co-specialized and focal firm is excluded by the alliance). | Ecology / co-evolution;<br>Male competition;<br>Retention; | In order to sustain its survival chances (ecology), the focal firm initiates action, resulting in a co-evolutionary process of trying to establishing a countervailing alliance (male competition).<br>When the rival's alliance comprehends a unique value adding cooperation (co-specialization) enhancing a competitive advantage, both alliance partners are more committed to protect their memetic offspring (retention) from external interference by excluding the focal firm to participate.<br>At the same time, the idea (meme) of this specific alliance is reproduced (again: retention) by the co-evolutionary process. |
| Haunschild, P. R. (1993). Administrative Science Quarterly, 38(4) | Linkage formation as a result of the exposure to a firm in its embedded position. | Acquisitions in medium and large-sized firms listed in 4 industries. (Compustat 1981-90) | ? | Acquisitions activities are influenced (imitated) by the exposure to the acquisition activities of other firm's in which managers take place in their board (embeddedness through directorship). | Retention | The idea of acquisitioning (a memetic variation) is spreaded (retention through imitation) within the population through proximate relationships (mating). |
| Gulati, R. (1999). Strategic Management Journal, 20(5). | Linkage formation as a result of firm's embeddedness. | Alliances in three worldwide sectors. | Y | Proclivity of firms to enter new alliances is influenced more by the amount of network resources (informational advantages obtained through the network) available to them, then by alliance forming capabilities. | Female choice | Firms are selective in their partnerships as they require a considerable investment of resources. Therefore their selection of a partner is based on a wide range of cues telling them something about the fitness of a potential partner (female selection). Through network resources this information is easily available. |
| Axelrod, R., Mitchell, W., *et al.* (1995). Management Science, 41(9). | Firm entry into standard setting alliances. | Alliances to develop and sponsor technical standards | N | Utitlity of a firm to join a standard-setting alliance increases with alliance size and decreases with presence of (close) rivals in the alliance. Result is based on a Nash equilibrium: a final configuration in which no single firm has an incentive to switch to another alliance. | Female choice;<br>Male competition | Firms choose their partner carefully (see Gulati 1999 analogy). Alliance size is a cue for viability (chances of survival) of the technical standard (memetic offspring). Close rivals in the alliance may cost more resources (male competition), in which case joining another alliance may have a better total pay-off (Nash equilibrium). |

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| Burkhardt, M. E., & Brass, D. J. (1990). Administrative Science Quarterly, 35. | Linkage formation as a result of technological innovations. | Federal agency | Y | Results show that early adopters of a new technology increased their network centrality to a greater degree than do later adopters. | Sexual selection of highest fitness | The centrality in population is determined by the attractiveness of (newly) adopted technologies (variation) which indicate higher fitness. |
| Kogut, B., Walker, G., & Kim, D. J. (1995). Research Policy, 24(1). | Firm entry as a result of centrality of technological innovations. | Semi-conductor industry | N | Certainty of established standard/dominant technology (indicated by a high centrality) correlates with entry of (start-up) firms. | Probability theory | When a certain (memetic) variation becomes dominant, its abilities to procreate (infecting new firms) increases (probability theory). |
| Olk, P., & Young, C. (1997). Strategic Management Journal, 18(11) | Firm exit | U.S.-based R&D consortia | N | Performance, the conditions of membership (knowledge-related involvement, network ties, learning) and alternatives are related to the decision to stay in or leave, with an interaction between performance and membership conditions, suggesting performance leads to the conditions of membership, and that the continuity decision for a poorly performing consortium differs from that for one performing well. | Ecology | In order to survive firms want to invest and maintain in high performing partnerships (alliances with high fitness and thus chances of survival). The decision to join/invest in such relationships is a function of resource investments, pay-off and alternatives. |
| Rowley, T. J., Greve, *et al.* (2005). Academy of Management Journal, 48(3). | Firm exit as a function of social similarity and cohesion. | Canadian investment bank cliques | Y | Complementarity and inequality are more powerful antecedents of clique exits than similarity and cohesion. Clique stability seems to be a function of three social and instrumental processes: building social attraction to govern exchanges, developing complementarity to accomplish collaborative tasks, and distributing the value created by a clique among its members | Kin selection, co-evolution | Social attraction triggers cooperative atmosphere (kin selection) and thus network stability (less exits), complementarity enables co-evolution among members, distributing value…. |
| Rao, H., Davis, G. F., & Ward, A. (2000). Administrative Science Quarterly, 45(2). | Firm exit as a function of social identity | Firm exits from NASDAQ to NY Stock Exchange | N | Effect of identity discrepant cues (other group members defect to another group) result in defecting the in-group. Effect is reduced by strong ties to in-group members and enhanced by strong ties to out-group. Proximity to defectors increases cross-over. | Kin selection | Cultural relation (memetic proximity) keeps actors to a group as they favour. Memetic proximity with out-groups or with defecting in-group members enhances the chance of leaving the network. |

## Table 2: Partner selection

| *Author(s)* | *Focus of study / ION dynamic* | *Description of network* | *Longit.* | *Given theoretical mechanism* | *ET mechanisms* | *Evolutionary analogy* |
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| Gimeno, J. (2004). Academy Of Management Journal, 47(6) | Partner selection in reaction to rivals' alliancing activities | Global airline industry (1994-98) | Y | Firms react strategically to rivals' alliancing activities by either allying with those rival's partners (when rival's alliance is non-specialized) or by building countervailing alliances (when rival's alliance is co-specialized and focal firm is excluded by the alliance). | Sexual selection | An alliance partner is selected on the basis of additional value in creating offspring with the highest possible fitness (sexual selection). |
| Gulati, R. (1995b). Administrative Science Quarterly 40(4). | Partner selection resulting from social structures. | Three worldwide sectors (new materials, industrial automotion, automotive products) | Y | Prior chosen partnerships shape partnerships in the future; firms base their partnership selection on the context emerging from prior alliances and considerations of strategic interdependence. | Sexual selection; Female choice; Kin selection | Partners are chosen on the basis of their additional value (sexual selection).<br>Due to the investment of limited resources, firms are selective in their relationship (female choice).<br>Prior relations reflect a certain cultural closeness (memetic (social?) proximity) which is favoured through kin selection. |
| Gulati, R. and M. Gargiulo (1999). The American Journal of Sociology 104(5) | Partner selection resulting from social structures. | Three worldwide sectors (new materials, industrial automotion, automotive products) | Y | Probability of new alliances between specific orgs increases with their interdepence and with social embeddedness aspects (defined as their prior mutual alliances, common third parties, and joint centrality). Differentiation of the emerging network mitigates the interdepence effect and enhances the social embeddedness aspects | Sexual selection; Kin selection | Partners are chosen on the basis of their additional value or: interdependence (sexual selection). Partners with memetic (social?) proximity are preferred (kin selection). |
| Walker, G., Kogut, B., & Shan, W. J. (1997). Organization Science, 8(2) | Partner selection based on structural hole arguments and social capital arguments | Biotechnology network | ? | Indsutry networks are relatively stable as new relationships are guided more by social capital arguments (close relations to many actors), and less by structural hole theory (unique relations to valueable distant actors). | Probability theory; Kin selection | The bigger the network, how more stable it is as variations have lower impact. Also actors tend to prefer close partners (memetic proximate) as they are probably close memetic representatives. |
| Hoetker, G. (2005). Strategic Management Journal, 26(1) | Partner selection in different levels of uncertainty | Supplier-relations in notebook industry (1992-8) | N | Level of uncertainty influences partner selection: (1) low: capabilities determine supplier (firm capabilities theory), (2) moderate: prior relationship and internal supplier (transaction cost theory), (3) extremely high: internal supplier (inter-firm relationships) | Kin selection | With increasing uncertainty, firms decline decision making on the basis of efficiency and start pampering memetic close ones (kin selection). |
| Podolny, J. (1994). Administrative Science Quarterly, 39 | Partner selection under market uncertainty | Investment banking relationships in debt markets (1981-7) | Y | The greater the market uncertainty, the more organisations engage in exchange relations with whom they have transacted in the past and with those of similar status. | Kin selection | High market uncertainty leads to uncertainty about individual survival chances. Therefore it becomes more important to invest in relationships with one's closest partners (kin selection) as they represent similar cultural beliefs/ideas/concepts/etc. Prior relationships (a) withstanded prior tests of proximity, (b) already developed communual ideas/concepts (memetic proximity). |
| Beckman, C. M., Haunschild, P. R., & Phillips, D. J. (2004). Organization Science, 15(3) | Partner selection under different types of uncertainty | Interlock and alliance networks for 300 largest U.S. firms (1988-93) | ? | Whether networks are stable or changing depends on the type of uncertainty experienced by firms.<br>Confronted with firm-specific uncertainty, firms tend to acquire additional resources through new partners (exploration). The instability resulting from market-level uncertainty is dealt with by developing additional ties with existing partners (exploitation). | Ecology; Kin selection | In order to increase their chances of survival, organizations team up with partners with additional beneficial resources (female choice) in case of firm-specific uncertainty.<br>In case of market-level uncertainty actors will then tend to form relationships with others who share similar ideals and values (memes!) (Sjostrand, 1992).. |

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| Zajac, E. J. and J. D. Westphal (1996). Administrative Science Quarterly 41(3) | Partner selection as a function of lower level processes | largest U.S. corporations over a seven-year period | Y | Variation in CEO-board power relations accross orgs has contributed to a segmentation of corporate director network (directors and boards both try to maintain power by selecting a power-accepting opposite partner). | Co-evolution; Selfish Genes | Lower level strategies (personal power strategies) have consequences for higher levels (network relationships), indicating the concept of Selfish Genes. |
| Li, S. X., & Rowley, T. J. (2002). Academy Of Management Journal, 45(6). | Partner selection as a function of… | U.S. investment banking industry | ? | Inertia as well as several evaluation criteria (incl. reciprocity, experience, prior perfomance) influence partner selection. | | |