Conceptualizing inter-organizational triads

Author(s): Vedel, Mette; Holma, Anne-Maria; Havila, Virpi

Title: Conceptualizing inter-organizational triads

Year: 2016

Version: Accepted Manuscript

Please cite the original version:

Conceptualizing inter-organizational triads

Vedel, Mette, University of Southern Denmark, Department of Marketing & Management
Holma, Anne-Maria, University of Vaasa, Department of Management
Havila, Virpi, Uppsala University, Department of Business Studies

ABSTRACT

Interest in triads and triadic research settings for the study of inter-organizational issues isgrowing. A literature review of inter-organizational studies, claiming a use of triadic research design, shows that the terms "triad" and "triadic" have been used to describe many different types of inter-organizational phenomena. However, not all studies involving a context of three actors are actually examining triads. This paper offers a robust definition of three-actor constellations qualifying as triads. Moreover, it elaborates on different types of inter-organizational triads, based on two aspects of collectivity; cohesion and the ability to act as a single entity. The definition of inter-organizational triads and the categorization of different types of triads will hopefully encourage further studies of triads; the smallest and simplest network which offers insights, which cannot be achieved in the study of single actors or dyads.

Keywords: Triad, dyad, business relationships, network, research design

1. INTRODUCTION

Triads and triadic research settings have recently aroused increasing interest among researchers interested in inter-organizational phenomena. This is the case within the fields of supply chain management (e.g. McFarland, Bloodgood & Payan, 2008; Wu & Choi, 2005), business-to-business relationships (e.g. Dubois & Fredriksson, 2008; Wu, Choi & Rungtusanatham, 2010), and service purchasing (e.g. Raassens, Wuyts & Geyskens, 2014). Furthermore, within the field of service research, researchers have started to see "service triads" as an important research setting (e.g.van der Valk & van Iwaarden, 2011), and as an emerging business model (e.g. Wynstra, Spring & Schoenherr, 2015). Thus, the interest in triads covers a wide range of inter-organizational phenomena where three companies are involved.

Triads differ in a number of ways: in terms of shape, how the relations influence each other, the strength of ties, and the way the triad relates to the surroundings, that is, its ability to act as a single entity. However, not all studies of phenomena involving three organizational actors have the triad as unit of analysis. Some articles focus on company level and study a single actor out of three, that is, the unit of analysis is an actor. They do not examine the possible relations between the focal actor and the two other actors. Others focus on a single dyad, but without studying the relations linking the dyad to the third actor. The motivation for these studies can be found in the importance of *the context for the actor or the dyad in focus*.

If instead the motivation for a study is network phenomena, the unit of analysis needs to be the structure of direct and indirect relations between three actors. That is, the unit of analysis must be *a triadic structure or in short a triad*. This is so, because three companies is the minimum size of an inter-organizational network (Provan, Fish & Sydow, 2007, Smith & Laage-Hellman 1992). Triads offer the opportunity to study complex network phenomena in a simple format, and consequently may offer insights of scholarly and managerial interest (e.g. Anderson, Håkansson & Johanson, 1994; Contractor, Wasserman & Faust, 2006). In order to achieve these insights, the data-collection must include information about three actors, the two or three relations which link them, and how these relations influence each other.

In this paper we establish the conceptual arguments for separating triadic contexts and structures. This separation is grounded in the concepts of association (Simmel, 1908), and connectedness (e.g. Cook & Emerson, 1984; Yamagishi, Gillmore & Cook, 1988) which also offer the foundation for our definition of inter-organizational triads. This definition contributes to existing research, because as far as we know existing definitions of triads are grounded in sociological studies of inter-personal relationships, in spite of the fact that inter-organizational and inter-personal relationships and structures differ along a number of dimensions. Moreover, we develop a framework for categorizing inter-organizational triads. The categorization is, besides association and connectedness, based on two more dimensions: The first is the concept of internal cohesiveness (e.g. Gross, 1956; Homans, 1961) which characterizes triads that form group-like structures. The second is the ability of some triads to act not as a system of three actors, but as a single entity vis-à-vis the environment (e.g. Cook & Emerson, 1984; Jarillo, 1988). For the scholar, the separation between context and structure and the categorization of

different types of triads may reduce some of the confusion about what triads are, what we can learn from the study of triads, and about how to design the study of different types of three-actor constellations. This is of utmost importance if we want to use triads, which are intuitively easy to grasp, in the dissemination of knowledge about networks and in the discussion of network phenomena with practitioners.

The paper is organized as follows. First, the lack of consensus in studies of triads or triadic phenomena is demonstrated in a review of inter-organizational studies claiming a triadic research design. Then, we elaborate on what grounds we can separate triadic contexts from triads. Thereafter, we elaborate on the qualitative differences among triads based on cohesion and the ability to act as an entity. These elaborations offer the foundation for a definition of inter-organizational triads and a framework which distinguishes between four basic types of inter-organizational triads.

2. TRIADS IN INTER-ORGANIZATIONAL STUDIES

Our paper sets off from an extensive literature review which illustrates that articles positioned as studies of inter-organizational phenomena involving three companies differ widely, which results in the lack of consensus in the conceptualization of triads. First we applied a Boolean search combining "triad*" and "inter-organizational". When applying this string in a topic search in web of science, the result is two articles. When applying the same string in a search of abstracts in Business Source Complete, the result is three articles. From our former research we knew of at

least 15 articles on the subject of inter-organizational triads. We therefore decided to make a full-scale literature search using the term triad* combined with relevant business terms. Having made this search in two databases, some articles were still missing. In consequence, totally three databases, Web of Science, Business Source Premier, and Scopus, were chosen to cover as many articles as possible, because none of the databases cover all possible articles.
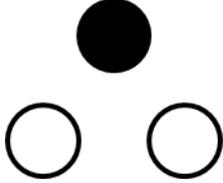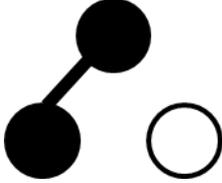
In the literature searches, made in January and February 2014, we included peer reviewed articles within the categories of business, management, business economics or operations research management science. The search term in all three literature searches was "triad*". The search in Web of Science resulted in 198 articles and in Business Source Premier in 680 articles. In turn, we searched Scopus for articles not found in the two other databases. The result was 156 articles of which 70 were not included in the results from the two other searches. Thus, the final pool of articles was 948.

This pool of articles includes numerous studies of well-established domains applying the concept of the triad, such as triad versus non-triad regions, triadic experiments in the study of the influence of power-dependence and information asymmetries for negotiation behavior. In addition, the pool of articles includes studies in which the term triad is applied to describe three intra-organizational actors, or more generally to designate the interplay of three phenomena. On the basis of abstracts we selected studies including three separate companies/organizations. We ended up with 33 articles including conceptual as well as empirical studies of which several appeared in all or two of the databases (see appendix A for a list of included articles).

2.1 Focus on a triadic context

Firstly, 13 studies are actually not examining inter-organizational triads, but what could best be described as studying a *triadic context*. Unless the articles actually study three actors and the relations among them, we find it difficult to categorize the entity of study as a triad. Rather, focus is on one of the actors, and the two other actors are seen through the eyes of the focal actor. One example of this type of study is Wuyts, Stremersch, van den Bulte & Franses (2004) who analyze vertical marketing systems involving suppliers, intermediary vendors and buyers of complex integrated computer networks. Based on a survey among 167 buyers, the authors conclude that "buyers go beyond the channel dyads they are involved in when they assess the appeal of a channel, which corroborates the value of a triadic and broader network perspective" (p. 485). Thus, the focus is on a triadic context where only the buyers are studied, and where the other two actors and their relationships to the buyer are seen through the eyes of one of the actors. Studies of triadic contexts also include articles which focus on a dyad, discussing the third actor as a part of the setting, but without examining the tie between the third actor and the dyad. An example of this type of study is van der Valk & van Iwaarden (2011). The study focuses on supplier-buyer relationships in the context of service triads, but without examining the ties between the end-user and the dyad. Table 1 illustrates the two examples of triadic contexts: one where the unit of analysis is one of the three actors, and another where the unit of analysis is two actors forming a dyad.

Table 1: Two examples of studies of triadic contexts

Wuyts, Stremersch, van den Bulte & Franses (2004) The study examines buyers as focal actors, the two other actors are seen through the eyes of the buyers.	van der Valk & van Iwaarden (2011) The study focuses on the supplier-buyer relationships in service triads

2.2 Focus on triadic structures

Secondly, in the remaining articles all three actors are studied, but there are some variations among the type of *triadic structures* being in focus. 13 articles study *sets of three linked actors* forming either an open triad in which the three actors are indirectly linked to each other through one of the actors, or forming a closed triad in which all actors are directly linked to each other. Example of an open triad constituted by a set of three linked actors is the study of McFarland, Bloodgood & Payan (2008) who study the connection between manufacturer – dealer dyad and the dealer – customer dyad. In this study the focus is on how the upstream dyad influences the downstream dyad through the intermediary (here dealer) in the middle. Example of a closed triad constituted by a set of three linked actors is the study of Wu, Choi & Rungtusanatham (2010) who study 43 triads consisting of one buying firm and two of its competing suppliers who co-operate to meet the buying firm's requirements. This means that these studies focus on the actual working of triadic structures shaped either as open or closed triads, such as how the three actors

can be linked through resource ties, activity links and actor bonds (cf. Håkansson & Snehota, 1995). Table 2 illustrates the two examples of triadic structures.

Table 2: Two examples of studies of triadic structures
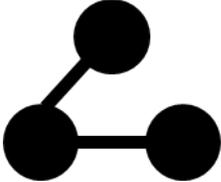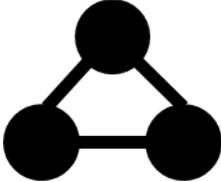
McFarland, Bloodgood & Payan (2008) The study examines two dyads and their mutual influence	Wu, Choi, Rungtusanatham (2010) The study examines the three dyads linking a supplier and its two cooperating suppliers

The remaining 7 articles study a specific type of closed triads with group-like characteristics. In order for a closed triad to display group-like characteristics, the actors must be involved in common coordinated activities, involving specific adapted and individualized processes in which each actor has its specific role and activities to perform. The difference between closed triads constituted by sets of three linked actors and closed triads with group-like structures is basically a matter of cohesiveness. The more the actors are closely linked, and the more they strive for a common goal, the more group-like the structure becomes. Example of an article studying group-like structures is Dubois & Fredriksson's (2008) case study of Volvo Cars and two of its suppliers of seats. In this triad "all relationships are interactive and characterized by interdependencies due to product and process adjustments" (p. 177). Thus, the phenomenon in focus is the group-like structure. However, it is not possible to distinguish sets of connected

actors forming a closed triad and group-like triads on the basis of shape alone. The shape is the same, that is, they both look like the closed triad in table 2, but the properties of the actors' relations differ. Section 4 offers a detailed examination of this difference and what the difference means.

2.3 What is the problem?

Across the 33 studies, 18 belong to the domain of supply chain management and sourcing, which shows that a triadic research tradition apparently has developed in supply chain studies. However, some of the studies focus on a triadic context, while others study triadic structures. This type of broad use of the term "triad" can also be found within the domain of business-to-business relationships. Some of the six articles, included in the review, study a triadic context, some a set of three linked actors, and some a group-like structure. We therefore conclude that there is some confusion about what a triad is, how to study triads, why it is interesting, and when it is relevant.

The following observations point in the same direction. 1) We only found one study of logistic triads which claimed a triadic approach (Larson & Gammelgaard, 2001/2002), although the logistic triad has been seen as the minimum unit of analysis in logistics research (Beier, 1989) 2) We found only one article claiming a triadic approach, written some years ago, dealing with channel issues (Narayandas,Caravella & Deighton, 2002). This is intriguing, as channel issues and supply chain issues basically deal with the same subject matter, although from opposite perspectives; downstream and upstream, respectively. 3) Some of the recent papers illustrate a

growing interest in the phenomenon of service triads. We agree that a service triad by definition is a closed triad, but the methodological approach differs. Van Iwaarden & van der Valk (2013) study actors in a triadic context, whereas Nätti et al. (2014) and Hartman & Herb (2015) study triadic structures.

Summing up, the study of three actors in inter-organizational research covers a wide range of phenomena. Still, they should not automatically be treated as studies of "triads", as some of them examine triadic contexts where the focus is on one or two of the three actors, whereas others include all three actors. The difference between triadic contexts and triads as structural phenomena is not trivial, as studies involving all three actors are the only ones which can offer insights on network phenomena. Setting off from this observation, we proceed to establish the conceptual arguments supporting our distinction between triadic structures and contexts as a means to reduce the confusion about what triads are and what we can learn from the study of such network structures. Likewise, the distinction between sets of linked actors and group-like structures (Havila, Johanson & Thilenius, 2004) offers further refinement and precision to the study of triads in a business context. To explain and support these distinctions, we next discuss the inherent characteristics of inter-organizational phenomena involving three companies.

3. TRIADIC STRUCTURES

In this section we elaborate further on triads as structural phenomena, and especially on the distinction between triadic contexts and structures. First we go back to Simmel's (1908) original

work in German. This reading reveals that Simmel does not use the term triad, instead he discusses "Verbindung zu dreien" (association of three). Later, this "Verbindung zu dreien" was translated to triad by Wolff (1950). The difference may seem to be of minor importance, but entails a change of perspective towards the triad as a structural outcome and away from association as the constituting phenomenon which changes a constellation of three actors into a triad.

Association signifies that a relation or a tie exists between actors. However, association as a sufficient 'connecting principle' is questioned by social exchange theorists (e.g. Cook, Emerson, Gillmore & Yamagishi, 1983). We therefore elaborate on connectedness as a second significant condition in the formation of triadic structures. Whereas association refers to the existence of relations, connectedness refers to the way in which relations influence each other.

3.1 Association of Three Actors

The seminal work discussing dyads and triads is *Soziologie. Untersuchungen über die Formen der Vergesellschaftung* by the German sociologist Georg Simmel (1908). Simmel sets off from "Zweierverbindung" (p. 81) which means the linking or the association of two individuals, and discusses how the association of a third individual (named "Verbindung zu dreien") totally changes the situation. Simmel's (1908) starting-point in the discussion of the association of three is the formation of groups consisting of three individuals. The three associated actors form a group in which each individual "operates as an intermediary between the other two, exhibiting the twofold function of such an organ, which is to unite and to separate" (Simmel, 1908 in

Wolff, 1950: 135). Thus, a triad can be said to be in a situation of constant change, due to the unifying and separating role of the third party.

Simmel (1908: 102-119) distinguishes between three types of groups of three, based on the acting of what he calls "the third parties" ("der Dritte", p. 102). In a group of three, the third party can act in a role as a (1) "non-partisan mediator", as a (2) "tertius gaudens" or as a party that (3) "divides and rules" (Simmel, 1908 in Wolff, 1950: 145-162). In the first type of group, where the third party acts as a "non-partisan mediator", the third party solves a conflict between the other two parties by means of formulating and presenting their claims to one another in a neutral non-affective form. The second type of group formation can be seen when the third party acts in its own interest, that is, as "tertius gaudens" using its position for gaining advantage of the mutual strangeness (ibid., p. 159) or the conflict between the other two parties (ibid., p. 155). Finally, the third type of group formation can be seen when the third party "divides and rules", that is, in an active way causes a conflict between the other two parties (ibid., p. 162).

Simmel's concept "Verbindung zu dreien" offers the first dimension to characterize triadic structures: Association of three actors is a basic prerequisite for a structure to be defined as triadic. It is not enough that a third actor exists for a triad to form. The third actor must be associated to the other two for a triad to form. Consequently, a study which claims to study a triadic structure must examine the association of three actors; it is not enough to study a single actor or a dyad, because it is the addition of the third person which changes the situation. Moreover, the description of the role of "tertius gaudens" and the "divide and rule" role

illustrates that all three actors need not necessarily be directly linked for association to exist. Both open and closed triads qualify as triadic structures.

3.2 Connectedness of Relations between Three Actors

The term (inter)connectedness is often used in a general sense to signify how firms relate to each other and the consequences hereof (e.g. Lavie, 2006). An alternative application of the term refers to the way in which relations influence each other. This phenomenon has been discussed in literature dealing with social exchange networks (see e.g. Cook & Emerson, 1984; Yamagishi et al., 1988) as well as business networks (see e.g. Anderson et al., 1994; Blankenburg Holm, Eriksson & Johansson, 1996; Johanson & Vahlne, 2011; Ritter, 2000). Connectedness is seen as the phenomenon that links a dyadic relation to other relations if "… exchange between A and B to some extent affects exchange between B and C, and vice versa" (Yamagishi et al., 1988: 835). Connectedness occurs when the frequency or magnitude of exchange in one relation affects exchange in another relation (Emerson, 1972). Connectedness of relations is the key for networks to form. Therefore, the smallest possible network consists of two relations between three actors.

The principle of connectedness emphasizes that "… common membership is not sufficient as a 'connecting principle'" (Cook et al., 1983: 277). This means that it is not sufficient that actor A has a common membership through simultaneous relations to actor B and C. The AB relation and the AC relation must affect or influence each other to create the connectedness of the structure which changes the two separate dyads in which A is involved into a network. This is

why it is claimed that "the shape of the network alone does not determine exchange processes" (Molm & Cook, 1995: 221). The connectedness of relations is implicit in Simmel's conceptualization of association. The dyad ("Zweierverbindung") changes fundamentally when a third actor is added and a triad ("Verbindung zu dreien") is formed, because the existing dyad is influenced by the dyad(s) linking the third actor to the existing dyad. Otherwise, the situation would not change fundamentally as a result of the addition of the third actor. This is what connectedness explicates.

Connections between relations can either be zero (no influence), positive or negative. The resulting network effects (Håkansson & Snehota 1995) differ significantly depending on whether connections are positive or negative. When relations influence each other negatively, the result is competition for resources; when relations influence each other positively, the result is cooperation (Molm & Cook 1995). The varying effects of positive and negative connections are further elaborated by Ritter (2000). He categorizes ten different situations of (inter)connectedness depending on whether one relation is seen to "hinder, weaken, strengthen, or enforce another relationship" (p. 321), and demonstrates the significance of connectedness of relations when analyzing relationship portfolios. Likewise, it has been demonstrated that the analysis of connections can capture qualitative differences between apparently similar inter-organizational triads (Vedel 2010). This is evident in two simple illustrations which represent two similarly shaped open triads (Figure 1). In both situations, a third party ("der Dritte" in terms of Simmel, 1908) can be found.

A

D

B

C

E

F

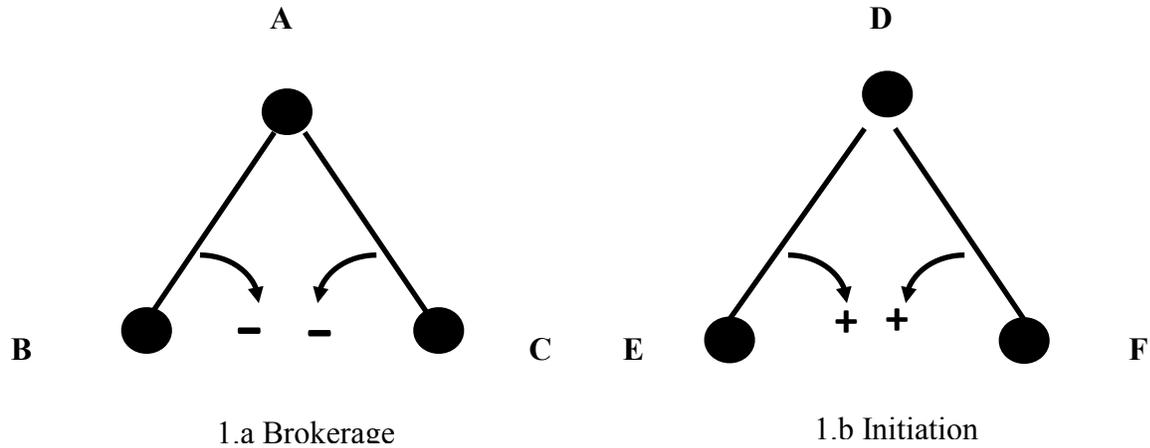1.a Brokerage

1.b Initiation

FIGURE 1

Results of Connectedness between Relationships

The example to the left illustrates a situation in which the actor (A), who creates the indirect link

between two other actors (B and C), acts as a broker (Burt, 1992). In terms of Simmel (1908),

the third party acts in a role of "tertius gaudens" (i.e. acts in its own interest), or maybe more

precisely as the actor who divides and rules. The example to the right illustrates the opposite

situation in a similar structure. In this constellation the actor D, who creates the indirect link

between E and F, acts as the initiator (Obstfeld, 2005). In terms of Simmel (1908), the third party

acts in a role of "non-partisan mediator" (i.e. does not take side). The difference between triad

ABC and DEF has been described as a result of different brokerage roles (Obstfeld, Borgatti &

Davies, 2014). These differing roles are closely linked to the connectedness which is negative in

the left hand example and positive in the right hand example and consequently results in

qualitatively different, but similarly shaped triads.

In both situations, the open triad may close, but for different reasons. If the two actors, which the broker keeps apart, find a way to establish a direct relation, it is likely that closure is motivated by a countering motive: B and C will join forces to nullify the extra value appropriated by A. In comparison, the motive behind the closure of the open triad involving an initiator (the D-E-F triad) is likely to be clustering – the pooling of resources (c.f. Madhavan, Gnyawali & He, 2004 for a discussion of countering and clustering). Thus, the addition of connectedness to the analysis of constellations of three actors and their relationships facilitates the distinction between similarly shaped, but qualitatively different triads.

To sum up, the three-actor constellation will only form a triad if actors are associated **and** relations are connected. If combined association and connectedness is not present, the dyads co-exist in isolation, and what goes on in one dyad has no bearings on the other ones. Instead, this type of three-actor constellation can be described to form a triadic context. Based on this elaboration, we are now able to propose a definition of triads in an inter-organizational context:

> *When relationships between three directly or indirectly associated actors are connected, the structure constitutes an inter-organizational triad.*

The proposed definition departs from shape as the only and sufficient qualifier for a structure of three (in)directly linked actors to form a triad. Consequently, and in accordance with Simmel (1908), this implies that an open triad constituted by two connected relations conform to the definition. Moreover, relations need not be strong for association to exist. But triads in which all

actors have direct and strong relations are different from those in which this is not the case. This is the issue of the following section.

4. DISTINGUISHING BETWEEN DIFFERENT TYPES OF TRIADS

Association and connectedness of three actors offer a platform for separating triadic contexts (see Table 1) and triadic structures (see Table 2). But in order to be able to distinguish between specific types of triads, two more dimensions are needed: degree of internal cohesiveness, and whether or not the triad acts as an entity (see Figure 2).
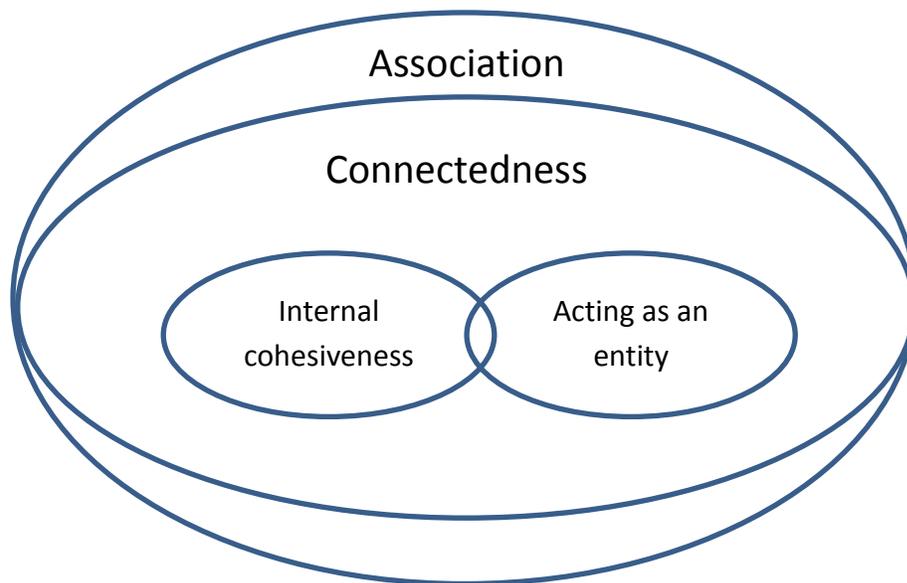

FIGURE 2

Four dimensions of triads

4.1 Degree of Internal Cohesiveness in triads

When three individuals form a group-like constellation, this group can be characterized as internally cohesive (Homans, 1961). Cohesiveness between three individuals can be driven by two types of ties: Either by "symbiotic ties" which exist when each of the individuals has something that is needed by the others (Gross, 1956: 175). In an inter-organizational context, symbiotic ties are driven by interdependence resulting from specialization which creates complementarity of resources (Richardson, 1972). Or individuals can be held together in a group-like constellation through ties that can be described as "consensual", that is, ties between the individuals are based on some type of agreement (Gross, 1956: 175). In an inter-organizational setting, an alliance is an example of an agreement.

Granovetter (1973) distinguishes between strong, weak and absent ties, and defines the strength of a tie between individuals as "a (probably linear) combination of the amount of time, the emotional intensity, the intimacy (mutual confiding), and the reciprocal services" (p. 1361). Likewise, inter-organizational group-like constellations can be more or less cohesive. For example, according to Morgan & Hunt (1994: 34), communication of information that is seen valuable may have a strong impact on inter-organizational commitment and trust. Thus, high levels of commitment and trust indicate strong ties within the structure.

Based on the analysis of strength of ties in an inter-personal setting Granovetter (1973) further argues that if the ties between person A and person B, and person A and person C are strong ones, it is likely that there also exists a tie between person B and person C, that is, a closed triad.

Thus, the three individuals form a group-like constellation, characterized by the fact that the parties are able to discern who the other participants are, because all three actors have direct ties. However, some differences between inter-personal and inter-organizational settings must be considered. The reason is that "Economic relations among firms [….] can certainly be intransitive, rather than transitive" (Wasserman and Faust 1994: 598). Consequently, change from open to a closed triad is not an unconditional outcome in an inter-organizational setting.

Moreover, in group-like constellations of three actors, there is a tendency for formation of coalitions (Caplow, 1956, 1959). This indicates a lower degree of internal cohesiveness. One example is a situation with a strong tie between A and B, and weaker ones between A and C, and B and C. This means that C has a more peripheral position, as it has weak ties to both A and B, indicating lower degree of internal cohesiveness. Another example of lower degree of internal cohesiveness can be found in group-like constellations of three parties, when one of the parties has a more central position and thus more power over the other two (Cook & Emerson, 1984).

However, the resilience of a cohesive group not only depends on the strength of ties, but also on the driver of cohesiveness. If the cohesiveness is based on symbiotic ties, that is, a result of specialization and complementarity of resources, it produces closely linked resource constellations and activity patterns (Håkansson & Snehota, 1995). If so, the structure is less prone to change in a short or medium term perspective (Johanson & Mattsson, 1992). This is so, because the inherent heterogeneity of such resource constellations and activity patterns makes it difficult to substitute one set of partners with another one in a short or medium long perspective, as they result from mutual adaptations and institutionalizations among the involved actors.

"Consensus, by contrast, depends wholly on the strength of positive feelings. Anything therefore, which produces disharmony or a conflict of views is likely to break up a consensual group." (Gross 1956 p. 179).

Summing up, in triads characterized by high degree of internal cohesiveness, the actors are directly linked and the ties between the actors are strong. This conforms to Thibaut and Kelley's (1959) definition of a triad which stresses both the shape (all actors are directly linked) and strength of ties (frequent interaction indicative of strong ties): "A triad is said to exist, when three individuals are observed to interact on successive occasions. These three are seen to come together repeatedly or to be in communication often, conversing, exchanging products, and so on." (p. 191). Thus, we can distinguish between triads with high degree of internal cohesiveness having a *group-like form*, and triads with low degree of internal cohesiveness having a *form of sets of connected actors*. Further, we can distinguish among triads having a group-like form depending on whether group formation results from cohesion or synthesis. Next, we discuss the way the triad relates to its environment.

4.2 Acting as an Entity

When three actors are associated and connected to each other, that is, form an interorganizational triad, the actors may agree upon how to deal with the environment. The agreement can be described in terms of formation a coalition. According to Cook & Emerson

(1984), *coalitions*[1] differ from emerging systems or networks in terms of how they relate to the surrounding environment. Actors involved in emerging systems or networks act separately and autonomously in their dealings with other actors. In comparison, the actors involved in coalitions endow one or some of the members with the authority to represent all members of the coalition in exchanges with external actors. The transfer of authority to exchange externally enables the members of the coalition to act as a single entity.

The formation of coalitions may have two different purposes. Either it is protective and created with the purpose of maintaining existing resources, or it is predatory with the purpose of acquiring new resources (Emerson, 1984). The description of coalitions as constellations, of which the purpose is mobilization, resembles the description of alliances created by companies as a means to strengthen their competitive position (e.g. Gulati, 1998; Ireland, Hitt & Vaidyanath, 2002; Jarillo, 1988; Sluyts, Matthyssens, Martens & Streukens, 2011). The resemblance is most pronounced in the description of *hub-driven strategic networks* in which the involved partners contribute to the business operation of a hub-firm. To the extent that the hub-firm's partners are more or less invisible or unidentified in the hub-firm's offering to the market (e.g. private label or OEM manufacturers), the constellation is represented in the customer-market by the hub, and in the eyes of the customers there is no divide between the hub and its partners; that is, the hub is perceived as a single entity in the eyes of its external partners.

---

[1] Cook & Emerson (1984) apply various terms such as coalition, alliance and corporate group to describe structures resulting from coalescing. For simplicity we only apply the term coalition.

Despite of the similarity in terms of the ability to act as an entity, the coalition, as described by Cook & Emerson (1984), and the hub-driven strategic networks differ. The formation of a coalition is described as a power balancing strategy, which involves the formation of direct ties between actors who have been indirectly linked. Thus, actors in a coalition are directly linked or associated; the structure is characterized by closure and cohesion. In comparison, the partners in a hub-driven strategic network are not necessarily all directly linked, and the involved relationships can be managed separately (Partanen & Möller, 2012). To sum up, both a coalition and a hub-driven strategic network act as entities, but in different ways.

4.3 Framework for categorizing triads

In this section we present a framework for categorizing triads. The underlying condition for inclusion in this framework is that the structures fulfill the conditions, stated in our definition of inter-organizational triads: It is mandatory that actors are directly or indirectly associated and relationships are connected. In comparison, high degree of cohesiveness and the ability to act as an entity are added features, which only exist in some triads. When combined, the degree of internal cohesiveness and the ability to act as an entity thus creates the foundation for a framework, which enables the categorization of four different types of triads (see table 3 below).

Table 3: Categorization of four types of triads on the basis of internal cohesiveness and ability to act as one entity

	Degree of internal cohesiveness	
	High degree Indicated by closure and strong ties	Low degree Indicated by non-closure and/or weak ties
Act as an entity No	Group-like triad	Set-of-connected-actors
Yes	Coalition	Hub-driven-strategic-network

Firstly, we apply cohesiveness to distinguish between two triads which do not act as entities in their dealings with the surrounding environment; *group-like triads* and a *set-of-connected-actors* (upper row). If cohesiveness is of low degree, we name the triad a "set-of-connected-actors". Low degree of cohesiveness is caused by one of the three following conditions:

1. The triad is open (no closure)

2. The ties are weak

3. The triad is open and the ties are weak

These signifiers of low cohesiveness are based on our elaboration in section 4.1 of high cohesiveness as a phenomenon which demands both closure (shape) as well as strong ties. Following the above reasoning, *group-like triads* must display closure <u>and</u> ties must be strong, that is, high cohesiveness. However, ties among actors in an open triad are not necessarily weak. An open triad can be a highly specialized structure founded in close and committed ties, which is

sometimes the case in long-term supplier-distributor-customer relations. Secondly, we use the degree of cohesiveness to distinguish between triads which act as entities vis-à-vis the surrounding environment (lower row). *Coalitions* are characterized by high degree of cohesiveness as a result of closure and strong ties, which is not the case for *hub-driven-strategic-networks* where ties may be strong, but where closure is not present.

The framework thus enables us to distinguish <u>between</u> group-like triads and sets-of-connected-actors, and likewise <u>between</u> coalitions and hub-driven-strategic-networks based on the degree of cohesiveness. Moreover, when comparing the two rows, the framework illustrates that the ability to act as an entity is not conditioned by high degree of cohesiveness, which characterizes coalitions. Also triads where cohesiveness is low can act as entities. This means that closure is neither a necessary, nor a sufficient condition for a triad to act as an entity. This exemplifies the claim that shape does not determine process (cf. section 3.2).

Still, the framework does not support a refined analysis of variation <u>within</u> each category. In order to capture qualitative differences within each category, we can apply the concepts of symbiosis and consensus described in section 4.1, and connections described in section 3.2. These additional features can influence and consequently offer explanations of variations within group-like triads, sets of connected actors, coalitions as well as hub-driven strategic networks. However, the application of symbiosis, consensus and connection is not restricted to the analysis within a category. These concepts also support further refinement in an analysis of differences and similarities across categories. Here is an example: an open triad formed in response to resource dependence may be much more resilient than a closed triad formed in the pursuit of

common goals. This is so, because consensus does not necessarily imply that the constellations are harmonious, as they are characterized by an inherent tension between cooperation and competition (e.g. Zeng & Chen, 2003). This observation further creates a conceptual link to positive and negative connections resulting in cooperation and competition respectively, which may even co-exist as indicated by the concept of coopetition (Bengtsson & Kock, 2000; Luo, Slotegraaf & Pan, 2006).

Summing up, the framework offers guidance in the study of triads. Considerable differences not only exist between triadic contexts and triadic structures, but also among types of triadic structures, that is, among triads. This is why it is important to be able to distinguish between different three-actor constellations. But even if a three-actor constellation constitutes a triad, a choice is still to be made: Whether to study the triad, or the constituting actors and dyads. However, insights on network phenomena can only be achieved, if a study takes the three actors and their relations – the triad - as the unit of analysis.

5. CONCLUDING DISCUSSION

The growing interest in triadic phenomena within the field of inter-organizational studies and the lack of clarity in the use of the concept of "triad" are the starting-points for this paper. Our literature review of inter-organizational studies applying some type of "triadic approach" shows the variety of ways in which the term triad has been used over the years to describe different type of phenomena. However, the use of the more tentative concept "triadic" instead of "triad" may also indicate some hesitation as to what constitutes an inter-organizational triad and to what

extent it differs from inter-personal triads. As literature on inter-organizational triads is still rather sparse, the conceptualization of the phenomenon leans on the study of inter-personal triads. And the links between inter-personal and inter-organizational triads are close.

Wynstra et al. (2015) warn against the risk of anthropomorphizing in an inter-organizational context, that is, to use concepts developed for the study of inter-personal relations in an inter-organizational context. The relevance of this warning is evident when considering the existence of transitivity and the effect of embeddedness in inter-organizational triads. Granovetter's (1973) conceptualization of the forbidden triad is based on the assumption that transitivity will result in the closure of an open triad if the relations between AB and AC are strong. However, Wassermann & Faust (1994) point out that this is not necessarily so in economic relations between firms. Whereas closure may be the eventual result in inter-personal open triads composed by strong ties, it is not necessarily so in an inter-organizational context. An open triad, involving a supplier, an intermediary, and a buyer, can reflect a highly specialized and contingent set of relations, for which no obvious and more favorable alternative exists. The intermediary can act either as a vehicle for cost-economizing, or for the provision of specialized and valued services. In both cases, there is little incentive for the two unconnected actors to invest in the development of a direct relationship; that is, there is no obvious driver of closure. Also Simmel's (1908) conceptualization of triads which includes open as well as closed triads makes it possible to confront the tenet that open triads are forbidden (Granovetter, 1973).

Likewise, the effect of social embeddedness does not necessarily entail information redundancy. According to Granovetter (1985), economic action is socially embedded and inter-personal

relationships affect inter-organizational relationships (Palmatier et al., 2007). Therefore, social capital inherent in actor bonds is significant for leveraging the value of and changing the characteristics of resource ties (Hartmann & Herb, 2015). Still, strong inter-personal ties are assumed to entail the risk of information redundancy (Granovetter, 1973). However, Rindfleisch & Moorman (2001) find that the effect of embeddedness on information redundancy is not similar in inter-personal and inter-organizational relationships. Their study of competitor relations indicates that strong and highly embedded ties can offer new knowledge, if the involved actors are positioned in different parts of the supply chain. This contradicts the usual assumption that weak ties rather than strong and highly embedded ones offer new knowledge. This may be so in inter-personal networks, but Rindfleisch and Moorman demonstrate that this is not necessarily so in inter-organizational relations.

Another issue in the study of triads concerns the theoretical significance of studies of inter-organizational triads which have been questioned as an incomplete network constructs, excluding other actors to whom the parties to a triad are linked (Dubois, 2009). We agree that triads are abstractions, but the strength of the triad compared to dyads and actors is that it offers a platform for the study of network phenomena in a simplified format, because the triad is the smallest possible network. Moreover, all network structures can be decomposed into triads. Thus, the link between a focal triad and the surrounding actors can be studied as adjoining, related or connected triads, depending on the relationships between the surrounding actors and one or more members of the focal triad. And the theorizing of the way in which the surroundings influence a triad is an obvious next step in the study of inter-organizational triads. However, we are convinced that we need to be clear about what inter-organizational triads are, and we need to

be able to distinguish between them before discussing how they are affected by the surrounding network. Our definition of the inter-organizational triad offers a first step in this direction. It emphasizes that neither the shape of the triad, nor the strength of relationships are sufficient signifiers for a three-actor constellation to qualify as a triad. Relationships must influence each other, be connected, too.

However, our application of connections as a condition for a triad to exist is a challenge. The study of connections in expanded systems is demanding as illustrated by a study of the Taiwanese public health system (Hu & Tsai, 2007). The number of potential connections increases exponentially with the number of relationships. This being so, our elaboration on inter-organizational triads is primarily helpful for case-researchers, studying small nets of actors. It is for this type of studies that our framework is developed. It does not offer a finite number of varieties of three-actor constellations as the triad census (Holland & Leinhardt 1976). Rather it offers a set of characteristics, which support the distinction between qualitatively different structures.

In spite of this limitation, we believe that the definition of an inter-organizational triad and the framework are robust suggestions. They are based on arguments derived from the comparison, contrasting and integration of alternative conceptual arguments (Yadav, 2010). Other scholars may disagree with our definition of inter-organizational triads, though still acknowledge that the characteristics resulting from our elaboration are relevant for defining and categorizing triads and for explicating the design of studies of inter-organizational triads. Moreover, the framework is applicable across domains, such as the study of business relationships, supply chains,

marketing channels, logistics, and service management, due to the generic character of the conceptual arguments, This being so, we hope that our framework can support a change of focus from futile discussion of the relevance, applicability and implications of triadic analysis, grounded in underlying differences in the conceptualization of triads, towards a focus on the link between empirical context, research design, and knowledge; that is, methodology. If so, our framework may implicitly facilitate future systematic comparison between studies taking a triadic approach, too.

A final conclusion concerns the potential managerial application of a triadic approach. Presently, we observe that many textbooks, for example in marketing, include a relationship and value creation perspective. But far too many offer no guidance concerning how to analyze relationships in context. This, we believe, is of acute significance for managerial practice. One way to introduce relationship in context could be triadic analysis. We have experienced that a triadic approach makes sense for managers, too. It is an easy and intuitively accessible way to situate and analyze a relationship in the context of other relationships. However, in order to be included in textbooks, the triad as a construct must be clearly defined and delineated. Our article offers a first step in this direction.

REFERENCES

Abecassis-Moedas, C., & Benghozi, P.-J. (2012). Efficiency and innovativeness as determinants of design architecture choices. *Journal of Product Innovation Management, 29,* 405-418.

Anderson, J. C., Håkansson, H., & Johanson, J. (1994). Dyadic business relationships within a business network context. *Journal of Marketing, 58*, 1-15.

Bastl, M., Johnson, M., & Choi, T. (2013). Who´s seeking whom? Coalition behavior of a weaker player in buyer-supplier relationships. *Journal of Supply Chain Management, 49*, 8-28.

Beier, Frederick J. (1989). Transportation Contracts and the Experience Effect: A Framework for Future Research. *Journal of Business Logistics,* 10(2), 73-89.

Bengtsson, M. & Kock, S. (2000). "Coopetition" in Business Networks — to Cooperate and Compete Simultaneously. *Industrial Marketing Management*, *29*, 411–426

Blankenburg Holm, D., Eriksson, K., & Johanson, J. (1996). Business networks and cooperation in international business relationships. *Journal of International Business Studies, 27*, 1033-1053.

Burt, R. S. (1992). *Structural holes: The social structure of competition.* Cambridge, Mass: Harvard University Press.

Caplow, T. (1956). A theory of coalitions in the triad. *American Sociological Review, 21*, 489-493.

Caplow, T. (1959). Further development of a theory of coalitions in the triad. *The American Journal of Sociology, LXIV*, 488-493.

Chen, H. L. (2012). Empirical behavioral analysis of project contractors' supply-chain payment term. *Supply Chain Management: An International Journal, 17*, 277-298.

Choi, T. Y., & Wu, Z. (2009). Taking the leap from dyads to triads: Buyer–supplier relationships in supply networks. *Journal of Purchasing & Supply Management, 15*, 263-266.

Contractor, N. S, Wasserman, S., & Faust, K. (2006). Testing multitheortical multilevel hypothesis about organizational networks: An analytic framework and empirical example. *Academy of Management Review, 32*, 681-703.

Cook, K. S., & Emerson, R. M. (1984). Exchange networks and the analysis of complex organizations. *Research in the Sociology of Organizations, 3*, 1-30.

Cook, K. S., Emerson, R., Gillmore, M. R., & Yamagishi, T. (1983). The distribution of power in exchange networks: Theory and experimental results. *American Journal of Sociology, 89*, 275-304.

Dubois, A. (2009). Comment on "Taking the leap from dyads to triads: Buyer–supplier relationships in supply networks" by Choi and Wu: To leap or not to leap: Triads as arbitrary subsets of networks of connected dyads. *Journal of Purchasing and Supply Management, 15*,

267-268.

Dubois, A., & Fredriksson, P. (2008). Cooperating and competing in supply networks: Making sense of a triadic sourcing strategy. *Journal of Purchasing & Supply Management, 14*, 170-179.

Emerson, R. M. (1972). Exchange theory, part II: Exchange relations and networks. In J. Berger, M. Zelditch, Jr. & B. Anderson (Eds.), *Sociological Theories in Progress* (pp. 58-87). Boston: Houghton-Mifflin.

Emerson, R. M. (1984). Charismatic kinship: A study of state formation. *Journal of Central Asia, 7,* 95-133.

Finne, M., & Holmström, J. (2013). A manufacturer moving upstream: triadic collaboration for service delivery. *Supply Chain Management: An International Journal, 18*, 21-33.

Forslund, H., Jonsson, P., & Mattsson, S.-A. (2009). Order-to-delivery process performance in delivery scheduling environments. *International Journal of Productivity and Performance Management, 58*, 41-53.

Granovetter, M. S. (1973). The strength of weak ties. *American Journal of Sociology, 78,* 1360-1380.

Granovetter, M.S. (1985). Economic action and social structure: the problem of

embeddedness. *American Journal of Sociology, 91,* 481–510.

Gross, E. (1956). Symbiosis and consensus as integrative factors in small groups. *American Sociological Review, 21*, 174-179.

Gulati, R. (1998). Alliances and networks. *Strategic Management Journal, 19*, 293-317.

Håkansson, H., & Snehota, I. (1995). *Developing relationships in business networks*. London: Routledge.

Hartmann, E., & Herb, S. (2015). Interconnectedness of actor bonds in service triads – a social capital perspective. *Industrial Marketing Management*, *44*, 154-165.

Havila, V., Johanson, J., & Thilenius, P. (2004). International business-relationship triads. *International Marketing Review, 21*, 172-186.

Holland, P. W., & Leinhardt, S. (1976). Local structure in social networks. *Sociological Methodology, 7*, 1-45

Holma, A. (2012). Interpersonal interaction in business triads—Case studies in corporate travel purchasing. *Journal of Purchasing and Supply Management, 18*, 101-112.

Homans, G. C. (1961). *Social behavior – Its elementary forms.* New York: Harcourt, Brace & World.

Hu, J., & Tsai, Y. (2007). Paradigms of derived exchange value effects in market network. *Industrial Marketing Management, 36*, 636-650.

Hyun, J.-H. (1994). Buyer-supplier relations in the European automobile component industry. *Long Range Planning, 27*, 66-75.

Ireland, R. D., Hitt, M. A., & Vaidyanath, D. (2002). Alliance management as a source of competitive advantage. *Journal of Management, 28*, 413-46.

Jansson, H., & Sandberg, S. (2008). Internationalization of small and medium sized enterprises in the Baltic Sea Region. *Journal of International Management, 14*, 65-77.

Jarillo, J. C. (1988). On strategic networks. *Strategic Management Journal, 9*, 31-41.

Johanson, J., & Mattsson, L.-G. (1992). Network positions and strategic action – an analytic framework. In B. Axelsson & G. Easton (Eds.), *Industrial Networks. A new View of Reality* (pp. 205-217). London: Routledge.

Johanson, J., & Vahlne, J.-E. (2011). Markets as networks: Implications for strategy-making. *Journal of the Academy of Marketing Science, 39*, 484-491.

Kühne, B., Gellynck, X., & Weaver, R. D. (2013). The influence of relationship quality on the innovation capacity in traditional food chains. *Supply Chain Management: An International Journal, 18*, 52-65.

Larson, P. D., & Gammelgaard, B. (2001/2002). The logistics triad: survey and case study results. *Transportation Journal, 41*, 71-82.

Lavie, D. (2006) . The competitive advantage of interconnected firms: an extension of the resource-based view. *Academy of Management Review, 31*, 638-658.

Li, M., & Choi, T. Y. (2009). Triads in services outsourcing: Bridge, bridge decay and bridge transfer. *Journal of Supply Chain Management, 45*, 27-39.

Luo, X., Slotegraaf, R., & Pan, X. (2006). Cross-Functional "Coopetition": The Simultaneous Role of Cooperation and Competition Within Firms. *Journal of Marketing*, 70, 67-80.

Madhavan, R., Gnyawali, D. R., & He, J. (2004). Two's company, three's a crowd? Triads in cooperative-competitive networks. *Academy of Management Journal, 47*, 918-927.

McFarland, R. G., Bloodgood, J. M., & Payan, J. M. (2008). Supply chain contagion. *Journal of Marketing, 72*, 63-79.

Mena, C., Humphries, A., & Choi, T. Y. (2013). Toward a theory of multi-tier supply chain management. *Journal of Supply Chain Management, 49*, 58-77.

Molm, L. D., & Cook, K. S. (1995). Social exchange and exchange networks. In K. S. Cook, G. A. Fine & J. S. House (Eds.), *Social Perspectives on Social Psychology* (pp. 209-235). Nedham Heights, MA: Allyn and Bacon.

Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing, 58*, 20-30.

Naim, M., Aryee, G., & Potter, A. (2010). Determining a logistics provider's flexibility capability. *International Journal of Production Economics, 127*, 39-45.

Narayandas, D., Caravella, M., & Deighton, J. (2002). The impact of internet exchanges on business-to-business distribution. *Journal of the Academy of Marketing, 30*, 500-505.

Nätti, S., Pekkarinen, S., Hartikka, A., & Holappa, T. (2014). The intermediator role in value co-creation within a triadic business service relationship. *Industrial Marketing Management, 43* 977–984.

Obstfeld, D. (2005). Social networks, the tertius iungens orientation, and involvement in innovation. *Administrative Science Quarterly, 50*, 100-130.

Obstfeld, D., Borgatti, S., & Davis, J. (2014). Brokerage as a process: Decoupling third party action from social network structure. In D. J. Brass, G. Labianca, A. Mehra, D. S. Halgin & S. P. Borgatti (Eds.), *Contemporary perspectives on organizational social networks. Research in the sociology of organizations.* Bradford, UK: Emerald Publishing.

Palmatier, R. W, Scheer, L. K, Houston, M. B., Evans K. R. & Gopalakrishna, S. (2007). Use of relationship marketing programs in building customer-salesperson and customer-firm relationships: Differential influences on financial outcomes. *International Journal of Research in Marketing, 24,* 210-223.

Partanen, J., & Möller, K. (2012). How to build a strategic network: A practitioner-oriented process model for the ICT sector. *Industrial Marketing Management, 41*, 481-494.

Peng, T.-J. A., Lin, N.-J., Martinez, V., & Yu, C.-M. J. (2010). Managing triads in a military avionics service maintenance network in Taiwan. *International Journal of Operations & Production Management, 30*, 398-422.

Provan, K. G.; Fish, A., & Sydow, J. (2007). Interorganizational networks at the network level: A review of the empirical literature on whole networks. *Journal of Management, 33*, 479-516.

Raassens, N., Wuyts, S., & Geyskens, I. (2014). The performance implications of outsourcing customer support to service providers in emerging versus established economies. *International Journal of Research in Marketing, 31,* 280-292.

Richardson, G. B. (1972). The organisation of industry. *The Economic Journal, 82*, 883-896.

Rindfleisch, A., & Moorman, C. (2001). The acquisition and utilization of information in new product alliances: A strength-of-ties perspective. *Journal of Marketing, 65*, 1-18.

Ritter, T. (2000). A framework for analyzing interconnectedness of relationships. *Industrial Marketing Management, 29*, 317-326.

Sanchez-Rodrigues, V., Potter, A., & Naim, M. M. (2010a). Evaluating the causes of uncertainty in logistics operations. *The International Journal of Logistics Management, 21*, 45-64.

Sanchez-Rodrigues, V., Potter, A., & Naim, M. M. (2010b). The impact of logistics uncertainty on sustainable transport operations. *International Journal of Physical Distribution & Logistics Management, 40*, 61-83.

Sanchez-Rodrigues, V., Stantchev, D., Potter, A., Naim, M., & Whiteing, A. (2008). Establishing a transport operation focused uncertainty model for the supply chain. *International Journal of Physical Distribution & Logistics Management, 38*, 388-411.

Sandberg, S. (2013). Emerging market entry node pattern and experiential knowledge of small and medium-sized enterprises. *International Marketing Review, 30*, 106-129.

Salonen, A. (2004). Managing outsourced support services: observations from case study. *Facilities, 22*, 317-322.

Shipilov, A. V., & Li, S. X. (2012). The missing link: The effect of customers on the formation of relationships among producers in the multiplex triads. *Organization Science, 23*, 1526-5455.

Simmel, G. (1908). *Soziologie. Untersuchungen über die Formen der Vergesellschaftung.* Leipzig: Verlag von Duncker & Humblot.

Sluyts, K., Matthyssens, P., Martens, R., & Streukens, S. 2011. Building capabilities to manage strategic alliances. *Industrial Marketing Management, 40*, 875-886.

Smith, P. C., & Laage-Hellman, J. (1992). Small group analysis in industrial networks. In B. Axelsson & G. Easton (Eds.), *Industrial Networks. A New View of Reality (*pp.37-61). London: Routledge,.

Thibaut, J. W., & Kelley, H. H. (1959). *The social psychology of groups*. New York: John Wiley & Sons.

Trimarchi, M., & Tamaschke, R. (2004). Coordinations in business interactions between Hong Kong Chinese, mainland Chinese, and Western actors. *International Business Review, 13*, 331-357.

Upson, J. W., & Ranft, A. L. (2010). When strategies collide: Divergent multipoint strategies within competitive triads. *Business Horizons, 53*, 49-57.

van der Valk, W., & van Iwaarden, J. (2011). Monitoring in service triads consisting of buyers, subcontractors and end customers. *Journal of Purchasing & Supply Management, 17*, 198-206.

van Iwaarden, J., & van der Valk, W. (2013). Controlling outsourced service delivery: managing service quality in business service triads. *Total Quality Management & Business Excellence, 24*, 1046-1061.

Vedel, M. (2010). *Value creation in triadic business relationships: Interaction, interconnection and position*. Doctoral dissertation, PhD Series 28.2010. Herning, Denmark: Copenhagen Business School.

Wasserman, S., & Faust, K. (1994). *Social network analysis: Methods and applications.* Cambridge University Press.

Wolff, K. H. (1950). *The sociology of Georg Simmel*. Clencoe, Illinois: The Free Press.

Wu, Z., & Choi, T. Y. (2005). Supplier–supplier relationships in the buyer–supplier triad: Building Theories from eight case studies. *Journal of Operations Management, 24*, 27-52.

Wu, Z., Choi, T. Y., & Rungtusanatham, M. J. (2010). Supplier-supplier relationships in buyer-supplier-supplier triads: Implication for supplier performance. *Journal of Operation Management, 28*, 115-123.

Wuyts, S., Stremersch, S., van den Bulte, C., & Franses, P. H. (2004). Vertical marketing systems for complex products: A triadic perspective. *Journal of Marketing Research, 41*, 479-487.

Wynstra, F., Spring, M., & Schoenherr, T. (2015). Service triads: A research agenda for buyer-supplier-customer triads in business services. *Journal of Operations Management*, *35*, 1-20.

Yadav, M. S. (2010). The decline of conceptual articles and implications for knowledge development. *Journal of Marketing, 74*, 1-19.

Yamagishi, T., Gillmore, M. R., & Cook, K. S. (1988). Network connections and the distribution of power in exchange networks. *American Journal of Sociology, 93*, 833-851.

Zeng, M., & Chen, X.-P. (2003). Achieving cooperation in multiparty alliances: A social dilemma approach to partnership management. *Academy of Management Review, 28*, 587-605.

Appendix A. Articles included in the literature review			
Triadic contexts **Unit of analysis: One or two actors**			
Author	**Domain**	**Method**	**Sample type/size**
Hyun (1994)	Business-to-business relationships	Industry level examples	N.a.
Narayandas, Caravella and Deighton (2002)	Channel	Case study	1 case
Trimarchi and Tamaschke (2004)	Business-to-business relationships	Case study	23 cases
Wuyts, Stremersch, van den Bulte and Franses (2004)	Supply chain management	Survey	167 companies
Jansson and Sandberg (2008)	Internationalisation	Survey Case study	116 companies 10 cases
Upson and Ranft (2010)	Competition	Conceptual	N.a.
Sanchez-Rodrigues, Potter and Naim (2010a)	Supply chain management	Focus groups	7 focus groups 58 participants

Sanchez-Rodrigues, Potter and Naim (2010b)	Supply chain management	Focus groups Online survey	8 focus groups 65 participants 56 responses on online survey
Chen (2012)	Supply chain management	Case study Survey	1 case 118 companies
Sandberg (2013)	Market entry	Survey	203 companies
van der Valk and van Iwardeen (2011)	Business services	Case study	2 cases
Shipilov and Li (2012)	Business-to-business relationships	Statistical analysis	Compilation of information from different sources
van Iwaarden and van der Valk (2013)	Business services	Case study	3 cases

Triadic structures: sets of three linked actors
Unit of analysis: Open and closed triads

Author	Domain	Method	Sample type/size
McFarland, Bloodgood and Payan (2008)	Supply chain management	Survey	151 triads
Abecassis-Moedas and Benghozi (2012)	Supply chain management	Case study	14 triads

Kühne, Gellynck and Weaver (2013)	Supply chain management	Survey	90 triads
Madhavan, Gnyawali and He (2004)	Strategic alliances	Statistical analysis	45 producers entering into 72 strategic alliances
Salonen (2004)	Outsourcing	Case study	1 triad
Wu and Choi (2005)	Supply chain management	Case study	8 triads
Choi and Wu (2009)	Supply chain management	Conceptual	N.a.
Li and Choi (2009)	Supply chain management	Conceptual	N.a.
Peng, Lin, Martinez and Yu (2010)	Supply chain management	Case study	13 triads
Finne and Holmström (2013)	Supply chain management	Case study	A single case study
Mena, Humphries and Choi (2013)	Supply chain management	Case study	3 triads
Wu, Choi, and Rungtusanatham (2010)	Business-to-business relationships	Survey	43 triads

Bastl, Johnson and Choi (2013)	Supply chain management	Conceptual	N.a.
Triadic structures: group like characteristics **Unit of analysis: Closed group-like triads**			
Author	**Domain**	**Method**	**Sample type/size**
Larson and Gammelgaard (2001-2002)	Logistics	Survey Case study	75 companies, 2 triads
Havila, Johanson and Thilenius (2004)	Business-to-business relationships	Survey	98 triads
Dubois and Fredriksson (2008)	Business-to-business relationships	Case study	1 triad
Sanchez-Rodrigues, Stantchev, Potter, Naim and Whiteing (2008)	Supply chain management	Conceptual	N.a.
Forslund, Jonsson and Mattsson (2009)	Supply chain management	Case study	1 triad
Naim, Aryee and Potter (2010)	Supply chain management	Case study	1 triad
Holma (2012)	Supply chain management	Case study	9 triads