

Making Bonds of Solidarity from Economic Exchange. A Review Essay

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Abstract

This article surveys a field of empirical social research linking economic exchange relations to the generation of interpersonal bonds of solidarity. This issue is particularly interesting for both social sciences and current societies because of the increasing global integration of markets and spatial mobility. Experimental research in Social Exchange Theory has provided mixed evidence on how various structural properties of exchange relations generate solidarity. Findings suggest that risk is key to generate trust between exchange partners, which is linked to feelings of solidarity. This casts doubts on the positive effect of economic exchange on solidarity, as actual market-based transactions mainly rely on assurance structures to reduce risk and prevent opportunism. However, further developments suggest that solidarity can be indirectly generated by economic exchange ties framed by loose agreements. This opens up opportunities for new empirical research to study economic exchange and solidarity in actual social systems. Furthermore, negative consequences of the link between economic exchange and solidarity are discussed, such as centralization and segregation.

Keywords: solidarity; cohesion; social exchange; economic exchange.

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1 The Social from the Economic

While economic sociology has extensively studied how social relations affect economic action, less attention has been devoted to the opposite direction of the link. Following the idea that the economy is “embedded in concrete, ongoing systems of social relations” (Granovetter, 1985, p. 487), empirical research has cumulated wide evidence on how informal interpersonal relationships can affect the outcome of economic exchanges by providing valuable information and preventing opportunistic behaviour (e.g., Krackhardt, 1992; Ingram & Roberts, 2000; Lazega, 2001; Brass et al., 2004; Rank, Robins, & Pattison, 2010; Brailly et al., 2015). Although it is acknowledged that “continuing economic relations often become overlaid with social content that carries strong expectations of trust” (Granovetter, 1985, p. 490), we know less about the mechanisms that make instrumentally-driven economic exchange relations develop into “expressive” ties (Parsons, 1951; see also Ibarra, 1992; Sanyal, 2009), such as interpersonal *bonds of solidarity*.

Moreover, studying solidarity from economic exchanges is important not just because it fills a hole in sociological literature. In fact, it is particularly timely as the world economy has become increasingly globalized and work organization in the advanced tertiary sector is being more and more structured along flat collaboration networks (Powell & Snellman, 2004). Professionals around the world collaborate everyday on shared projects, exchange advice with co-workers or partners on highly specific topics, contribute to improve collectively-managed knowledge repositories. Along this, companies of the advanced tertiary sector design loose organizational structures to grant employees the freedom to collaborate with peers and share their expertise.

Originally driven by instrumental motives or organizational constraints, interactions of this kind allow peers to develop beliefs and sentiments about each other — such as esteem, trust, or affective regard — which might change their perception of their relationship. Repeated interaction might bring partners to attach expressive value to their relationship. Economic exchange relationships are then especially interesting as possible determinants of solidarity, because they connect individuals who would unlikely get in contact with each other for motivations other than instrumental. Furthermore, these kinds of interaction allow connections between strangers who unlikely share mutual expectations of prosocial behaviour because of common membership to a social group (Hechter, 1987; Lindenberg, 1998, 2014), nor are their individual interests aligned to a salient collective identity (Pizzorno, 1983; see also Baldassarri, 2009). Therefore, interaction within economic exchange relations could potentially overcome the difficulties of solidarity within contemporary ethnoracially diverse societies (see e.g. Abascal & Baldassarri, 2015).

For these reasons, understanding how motivational and structural facets of economic relationships can change and generate bonds of solidarity is a key issue for understanding contemporary societies and advancing sociological theory. This aim calls for a *dynamic* theory of solidarity. For this reason, Lindenberg’s micro-founded theory of solidarity (1998) is particularly appropriate to this purpose. Here, *solidary behaviour* is defined as a pattern of prosocial behaviour across situations in which individuals could be tempted to act according to their self-interest: a) cooperation in the production of a common good; b) fairness in sharing finite resources; c) provision of support to others in need; d) trustworthiness in situations of breach temptations; e) considerateness in mishap situations (see also Lindenberg et al., 2006). Interpersonal bonds of solidarity can then be understood as social relationships between individuals who are likely to behave to each other in accordance with these patterns (see also “solidarity re-

lations” in Flache & Hegselmann, 1999). Then, *group solidarity* emerges as such patterns of solidary behaviour become “norms of solidarity” to which group members are informally required to comply at their own individual costs (Laitinen & Pessi, 2014; Lindenberg, 2014).

Clearly, the idea of studying the link between economic exchange and solidarity is not new. On the contrary, it dates back to the roots of sociology (Durkheim, 1893). Studies on solidarity have then been strongly influenced by the Durkheimian classic distinction between “mechanical” and “organic” solidarity. The first one — related by Durkheim to traditional societies — is grounded in interpersonal similarity, shared sentiments and values, an emotional and normative sense of community, and stabilized by a strong “collective conscience.” Conversely, organic solidarity — related to industrialized societies — is based on individuals’ acknowledgement of the structural interdependence of their different roles in the “social division of labour,” which ensured stability without a collective conscience. Therefore, the backbone of organic solidarity can be viewed as a stable and cohesive network of economic exchange relations between different individuals who instrumentally interact with each other in order to acquire the resources they need. The two Durkheimian forms of solidarity — rather than being strictly intended as different evolutionary stages of society — have shaped two main sociological approaches to the study of solidarity in contemporary societies (Markovsky & Lawler, 1994). “Organic solidarity” has mostly inspired research on “social order,” i.e. which institutional scaffolds can ensure cooperative equilibria despite self-interested agents’ conflicting behaviour, thereby narrowing the problem of solidary behaviour to that of one’s convenience to cooperate or comply to within-group norms (e.g. Axelrod, 1984; Hechter, 1987; Coleman, 1990). Moreover, rather than studying empirically-based concrete forms of exchange, this stream of research has often conflated exchange relations with abstract forms of instrumentally-driven interaction, by concentrating more on agents’ motives rather than on properties of the interaction (e.g., type of exchanged resources, power relations, affective or instrumental character of the relationship). Differently, the concept of “mechanical solidarity” has mainly influenced research on interpersonal affective ties and emotional group attachment (e.g., Collins, 1981, 2004; see also Lawler & Yoon, 1996; Lawler, 2001; Molm, Collett, & Schaefer, 2007). Here, scholars have conceptualized solidarity as actual social ties between different individuals or between individuals and a group, defined by different kinds of behaviour or sentiment (Homans, 1950).

The aim of this article is to survey a field of empirical social research which has studied how economic exchange relations can develop into interpersonal bonds of solidarity, beyond simple coordination of mutual convenience. For this purpose, this article draws considerably from the framework of the *Social Exchange Theory*, more specifically from those studies which have attempted to answer the question: “Under which structural conditions do purely instrumental exchange relations develop into expressive ones that are valued in their own right?” (Thye, Yoon, & Lawler, 2002, p. 140). The rest of the article is organized as follows. Section 2 presents basic concepts of the *Social Exchange Theory*, research on commitment in exchange relations, and the *Theory of Relational Cohesion*. Then, after describing different forms of social exchange, Section 3 presents two competing theories linking exchange forms and solidarity, namely the *Affect Theory of Social Exchange* and the *Reciprocity Theory of Solidarity*. Finally, Section 4 provides a brief summary of the review, discusses the limits of this approach, and suggests possible research developments.

2 Exchange, Commitment, and Cohesion

Rooted in classic sociological works (Homans, 1958, 1974; Blau, 1964; Emerson, 1976), *Social Exchange Theory* (SET) has proposed a comprehensive theory of social interaction and emergent social structures, by analyzing exchange interactions from basic motives of human behaviour (Homans, 1950).

SET is centred around the concept of *social exchange*, which is defined as mutual transfer of benefits between two or more actors under conditions of incompletely specified obligation (Blau, 1964). Benefits can be either physical goods, including economically valuable goods, or symbolic ones, such as information, help, and affection. An *exchange relation* is defined as a longitudinal sequence of opportunities, initiations, and transactions, which forms a variably enduring relationship between specific partners (Emerson, 1976). Moving from the assumption that actors “behave in ways that increase outcomes they positively value and decrease outcomes they negatively value” (Molm & Cook, 1995, p. 210; see also Homans, 1950), the concept of *social exchange* is tightly intertwined with actors’ *power*, which is a function of the control of some valued resources. Every social exchange relation is then viewed as a power-dependence relation, as actor *i* depends upon actor *j* as the source of a resource which *i* values to generate a benefit. This mutual dependence occurs as far as *i* and *j* need each other in order to engage in a rewarding exchange. It also accounts for its initiation and continuation over time (Emerson, 1976; Molm & Cook, 1995). Finally, power-dependence is amplified by the fact that exchange relations are connected to each other in an *exchange network* (Molm & Cook, 1995; Willer, 1999). In this way, SET provides a set of conceptual tools to studying the link between interaction and wider social structures, with social relations as units of analysis.

Building on these definitions, SET has linked social exchange to the formation of aggregate and stable social formations. Moving from a dynamic theory of social interaction, higher-level social formations can then be conceptualized as the outcomes of processes of social integration. Groups are formed through “the development of integrative bonds that unite individuals in a cohesive unit” (Blau, 1964, p. 33). As noted by Fararo and Doreian (1998), this is possible once “groups” are defined in abstraction from the problem of integration and solidarity. Homans (1950) loosely conceived groups as sets of individuals interacting with each other more frequently than with out-group individuals. In this way, groups — as minimal units of more complex social formations — are not taken as a social given which influences social exchange, yet they are to be explained as the aggregate outcome of a process of solidification of dyadic relationships over time.

Therefore, such integration processes make exchange relations more or less cohesive, eventually bringing about interpersonal integrative bonds. Then, cohesive exchange relations within a group generates overall group-level cohesion. Therefore, *relational cohesion* is defined as a structural attribute of exchange relations and the exchange networks in which they are embedded (Molm & Cook, 1995). It is a function of the degree of power-dependence of the relation and is positively correlated with the frequency of exchanges (Emerson, 1976). The overall cohesion of an exchange network is then yielded by the stability of ties among network nodes, which in turn depends on the dynamics of exchange opportunities and transactions. Understanding the mechanisms for cohesive integrative bonds to develop between group members is crucial to study the formation of bonds of solidarity.

2.1 Risk and Commitment

Due to power-dependence inherent to exchange relations, actors face structural risk of being exploited by unknown partners. This can make actors in an exchange network more likely to interact with past partners who did not behave opportunistically rather than turning to new partners whose trustworthiness is uncertain, even if potential rewards could be higher. When this occurs, *commitment* between two exchange partners can develop (Cook & Emerson, 1978; Molm & Cook, 1995). Therefore, exchange relations can solidify and become cohesive through repeated interaction.

An experimental test of this hypothesis was provided by Kollock (1994), who found that intensifying information asymmetry in simulated market transactions increased subjects' preference for long-term exchange relations as a strategy to cope with uncertainty. This mechanism then cumulatively led to more commitment and increasing mutual dependence between partners, which in turn generated stronger relational cohesion. Further tests were performed across U.S. and Japan by Yamagishi, Cook, & Watabe (1998), who similarly found that committed relations were more likely to develop between subjects who displayed a lower level of generalized trust. This confirmed that structural risk and uncertainty reduction are linked to commitment and cohesion. Following these experiments, Back & Flache (2006) showed that strategies based on commitment can be more efficient than others in coping with the risk of being exploited by free-riders in simulated game-theoretic exchanges (see also Bravo, Squazzoni, & Boero, 2012; for a review of these studies, see Bianchi & Squazzoni, 2015).

2.2 Theory of Relational Cohesion

Unlike these studies, other scholars have suggested that commitment in exchange relations could be driven by positive emotions generated by a successful exchange, rather than on strategic behaviour. A *Theory of Relational Cohesion* (TRC) was developed upon experimental research testing this hypothesis (Lawler & Yoon, 1993, 1996, 1998; Lawler & Thye, 1999; Lawler, Thye, & Yoon, 2000; see Thye, Yoon, & Lawler, 2002 for a review). Unlike previous conceptualizations, in TRC *cohesion* is defined as the perception by partners that their exchange relation is a "unifying force" in the social situation in which it occurs (Lawler & Yoon, 1996, p. 91). Similarly, *commitment* is then defined as the perceived strength of the tie existing between a person and a social unit, such as relations, groups, networks, organizations, or communities (Thye, Yoon, & Lawler, 2002).

The first block of TRC is a causal model developed by Lawler and Yoon (1993), which elaborated on behavioural aspects of commitment. In the model, the generation of positive emotions acted as an intervening mechanism between the structure of power-dependence in an exchange relation and behaviourally-observed commitment. As a condition, the model posits a process of negotiation of an agreement between partners with equal relative power. When this happens repeatedly, reaching agreements generates actors' gratitude. Then, satisfaction for a successful exchange brings actors to eventually develop commitment. First experimental tests showed that subjects negotiating exchange terms face-to-face within an equal power-dependence relation were more likely to display committing behaviour. For example, not only did they tend to commit to a partner despite more profitable alternatives, they also were more prone to concessions during negotiation.

Furthermore, other experiments confirmed the importance of positive emotions, which were generated by the joint activity of negotiating a successful agreement. Moving from the premise that humans tend to attribute responsibility for their emotions to identifiable

sources, these experiments showed that successful exchanges allowed subjects to attribute their satisfaction to their partners' behaviour. This eventually generated relational cohesion, displayed through increased commitment and willingness to engage in collective-oriented behaviour (Lawler & Yoon, 1996). Later, new experiments compared the effect of different network structures on exchange. Unlike research on typical situations of balanced power-dependence, results showed that greater exchange frequency in unequal power relations was not sufficient to produce commitment, because it could not elicit positive emotions. In turn, shared group identity also displayed a positive effect on commitment (Lawler & Yoon, 1998). Finally, emotional enforcement of commitment in exchange relations was experimentally disentangled from strategic behaviour of uncertainty reduction (Cook & Emerson, 1978; Kollock, 1994). This suggested that the two mechanisms, rather than concurrent, might rather be complementary depending on different social situations (Lawler, Thye, & Yoon, 2000).

In conclusion, studies in TRC provide evidence of an emotion-based mechanism generating cohesion in an exchange network (Blau, 1964; Thye, Yoon, & Lawler, 2002). Furthermore, this mechanism is likely to trigger stable group cohesion because it generates affective and integrative bonds within an exchange network, differently from commitment driven by strategies of uncertainty reduction (Cook & Emerson, 1978; Kollock, 1994).

However, generalizability of TRC is considerably limited. First, the postulated mechanism was tested in cases of repeated interaction between individuals who jointly negotiated the exchange terms. Therefore, TRC does not apply to most types of social exchanges, where actors rarely negotiate exchange terms. Moreover, framing an exchange within the terms of an agreement leaves out most common social exchanges involving unilateral transfer of benefits from one individual to another (e.g., voluntary provision of help). Furthermore, TRC assumes equal-power exchange networks, which minimize actors' temptations of opportunism (Lawler & Yoon, 1998), thereby allowing actors to perceive the social situation in a more cooperative frame.

3 Forms of Exchange and Solidarity

More recent studies in SET have directly addressed the formation of solidarity across different forms of exchange (Lawler, 2001; Molm, Collett, & Schaefer, 2007; Lawler, Thye, & Yoon, 2008), by moving from the assumption that each one entails different configurations of power-dependence (Molm, Peterson, & Takahashi, 1999, 2001).

Indeed, forms of social exchange vary according to the interaction structure which they entail. They are defined by analytically abstracting from the contingency of actors, resources, or wider network structures (Emerson, 1981; Molm & Cook, 1995; Molm, 2003). First, a social exchange can be either *direct* or *indirect*. In *direct* or *restricted exchange* actor *i* provides a benefit to actor *j* and *j* to *i*, so that each actor's outcome depends directly on the partner's behaviour. In *indirect* or *generalized exchange*, a benefit transferred by *i* to *j* is not reciprocated directly, whereas *j* transfers a benefit to another actor, *k*. Reciprocation for *i* then occurs once *i* receives in turn a benefit from another actor.

Generalized exchange has been central in the classical social exchange literature both in sociology (Blau, 1964; Ekeh, 1974) and anthropology (see e.g. Malinowski, 1922; Mauss, 1925; Lévi-Strauss, 1949; Sahlin, 1972). The most common form of generalized exchange is what Takahashi (2000) has called *pure-generalized exchange*, in which no fixed structure of giving is entailed, i.e. *i* might transfer benefits to *j* and *k* on a different occasion. On the other hand,

in *chain-generalized* exchange, benefits flow in one direction in a circle of transferring which eventually indirectly reciprocates benefits to the initiator. For instance, in a three-actor chain, *i* transfers benefits to *j*, *j* to *k*, and *k* to *i*. Structures of chain-generalized exchange underlie classic exchange phenomena such as the “Kula ring” (Malinowski, 1922) and matrilineal cross-cousin marriage (Lévi-Strauss, 1949; Bearman, 1997).

Secondly, direct exchange relations can be further distinguished between *negotiated* and *reciprocal* exchange (Lévi-Strauss, 1949; Blau, 1964; Emerson, 1981; Molm, 1997). In an ideal-typical *negotiated exchange*, actors engage in a joint decision process, such as explicit bargaining, in which they seek a binding agreement on the division of benefits. Benefits obtained by both partners can be conceived as paired events, which identify a *transaction*. In *reciprocal exchanges*, actors’ transfers of benefits are typically separately performed and non-negotiated. Actor *i* initiates an exchange as the outcome of an independent decision, by unilaterally transferring benefits to actor *j* without knowing whether, when, or to what extent *j* will reciprocate in the future. Negotiated exchanges cover most cases of economic exchange (other than fixed-price trades) as well as certain types of social exchange (Molm & Cook, 1995; see also Kuwabara, 2011). Reciprocal exchanges, however, characterize the vast majority of social exchanges among family members, friends, and acquaintances (Homans, 1974). Note that scholars in economic sociology have widely shown the importance of reciprocal exchange also in business and trade relations (see e.g. Granovetter, 1985; Uzzi, 1996).

Reciprocal and negotiated forms of exchange differ across three key analytic dimensions (Molm, 2003). First, in reciprocal exchanges benefits flow unilaterally from *i* to *j*, so that each actor’s outcome is contingent solely on the other’s actions. This implies that actors can initiate exchanges which will not be reciprocated, as well as they can profit from another’s transfer without reciprocating (Emerson, 1981; Molm & Cook, 1995). On the contrary, negotiated exchanges entail bilateral flow of benefits, each actor’s outcomes being instead contingent on the joint negotiating interaction, so that nobody can profit without an agreement which benefits both sides. Second, following from difference on contingency, while communication within negotiation implies shared information on outcomes, in reciprocal exchange actors cannot rely on the same kind of information. Finally, differently from negotiated exchange, in reciprocal exchange the degree of equality in exchange outcomes develops only over time, as it does not rely on discrete transactions but rather on individually performed, sequentially contingent transfers (Molm, 2003).

3.1 Affect Theory of Social Exchange

Further studies building on TRC looked at the effect of different forms of exchange on cohesion and solidarity (Lawler, 2001; Lawler, Thye, & Yoon, 2008). By relying on previous experimental evidence, Lawler (2001) proposed an *Affect Theory of Social Exchange* (ATSE). The theory moves from the assumption that actors engaging in joint social activities attribute their perceived emotions to the social units in which the activity occurs (social relationships, networks, or groups). This would account for variations in actors’ affective attachment to higher-level social formations.

This theory aims to study the mechanisms which cause the emergence of a *micro social order*, defined as “a recurrent pattern of interaction among a set of actors, from which they come to perceive themselves as a unit (i.e., a group) and to develop feelings about that unit” (Lawler, 2002, pp. 4–5). It is interesting to note that this concept comprises what could be conceived as interpersonal bonds of solidarity. Moreover, the definition of a “micro social order” appears

as a pre-condition as to how Lawler (2001) defined “solidarity,” namely as “the strength and durability of person-to-group and person-to-person relations” (p. 329). In this way, solidarity becomes something more than just integrative interpersonal bonds. Following Parsons (1951), solidarity is conceptualized here in two dimensions: a) affective ties between group members, b) a relation between each group member and the collectivity as a social object.

The strength of group attachment implied by a micro social order can determine solidarity behaviour, such as providing unilateral benefits without expecting reciprocation, increasing one’s availability to collaboration despite risk of exploitation, forgiving isolated free-riders, and commitment (Lawler, 2001). Another basic premise of the model is that each form of exchange requires different types of joint activity, which vary along a structural and a cognitive dimension: a) the degree of separability of actors’ tasks and contributions; b) the perception of shared responsibility on exchange outcomes. Hence, increasing non-separability should generate stronger perception of shared responsibility, which in turn should make actors attribute positive emotions to the exchange relation as a social unit. Therefore, ATSE predicts that different forms of social exchange generate micro social orders of different strength, as they entail different degrees of task separability and perceived shared responsibility. More specifically, stronger micro social orders would be produced by direct rather than indirect exchange and by negotiated rather than reciprocal exchange.

These predictions were tested by comparing different forms of three-actor exchange networks in laboratory experiments (Lawler, Thye, & Yoon, 2008). The strength of generated micro social orders was measured by four indicators: 1) frequency of exchanges; 2) positive feelings about exchanges; 3) perceptions of network cohesion; 4) affective attachment about the social unit. However, results only partially supported the theory. As predicted by ATSE, subjects in direct exchange reported higher levels than those in indirect exchange across all indicators. Interestingly, perceptions of network cohesion decreased over time among indirect exchange partners. However, no significant differences between negotiated and reciprocal exchange were observed in the experiment.

3.2 Criticism to Affect Theory of Social Exchange

As seen above, ATSE sought to expand the scope of TRC by hypothesizing the occurrence of an emotion-based mechanism in the context of non-economic exchanges. However, experimental results were not entirely supportive. Furthermore, other scholars challenged general implications of ATSE by shifting the analytical focus back to structural risk and further developing its relationship with trust and commitment (Molm, Peterson, & Takahashi, 1999, 2001; Molm, Takahashi, & Peterson, 2000; Molm, 2003; Molm, Schaefer, & Collett, 2009).

In order to emphasize risks in exchange, Molm, Takahashi, & Peterson (2000) concentrated the analysis on direct exchanges in unequal-power relations. Their hypothesis was grounded on the classic SET proposition that a necessary condition for an actor to initiate a social exchange interaction with no binding assurance structures (e.g., the provision of help or advice) is the actor’s trust of being reciprocated (Blau, 1964). Defined later as the “structural or situational potential for incurring a net loss” (Molm, Schaefer, & Collett, 2009, p. 5), risk is in turn a necessary condition for trust to develop between exchange partners, as it provides actors the opportunity to prove their trustworthiness through reciprocation (Dasgupta, 1988; Gambetta, 1988; Hardin, 2002; see also Kollock, 1994; Yamagishi, Cook, & Watabe, 1998).

Consequently, higher risk of non-reciprocation in reciprocal exchange should generate more trust than negotiated exchange, as in the latter partners can rely on a previously nego-

tiated agreement that ensures reciprocation. Risk connected to negotiated exchange is then only related to the possibility of failure in establishing an agreement, which is less threatening than the one implied by the lack of assurance of reciprocation in reciprocal exchange (Molm, 2003). Therefore, if actors succeed in establishing an agreement, trust between actors can be rather unnecessary to yield a positive outcome in a negotiated exchange, as this is ensured by the assurance structure provided by the agreement (Yamagishi & Yamagishi, 1994).

In an experimental test of these predictions, Molm, Takahashi, & Peterson (2000) found stronger self-reported levels of trust and affective commitment towards partners in reciprocal exchanges. They argued that while negotiated exchanges provided actors the opportunity to display only behavioural signs of commitment (Kollock, 1994), the risk of non-reciprocity in reciprocal exchanges allowed subjects to learn about their partners' trustworthiness once reciprocation occurred. Reciprocation was then attributed to partners' intrinsic motivations rather than to strategic compliance to exogenous enforcement structures. This generated affective commitment together with trust. Interestingly, higher risk in reciprocal exchange could even bring actors to strategically commit to partners more than in negotiated exchanges. In an earlier study contrasting power and exchange forms, Molm, Peterson, & Takahashi (1999) showed that subjects with higher structural power in exchange networks (i.e., more opportunities to shift to other partners) disproportionately opted for reciprocity and were less likely to explore other partnerships in reciprocal rather than in negotiated exchanges, in order to cope with higher risk. Finally, further experiments reported the importance of the expressive value of reciprocation in itself, as it was perceived by actors as a sign of affective regard beyond trustworthiness (Molm, 2003; Molm, Collett, & Schaefer, 2007; Molm, Schaefer, & Collett, 2007).

In conclusion, while not directly questioning the occurrence of emotionally-driven commitment between economic exchange partners, these studies cast serious doubts on the possibility of economic exchanges to generate solidarity as claimed by ATSE, at least if partners had different power in the network. Molm (2003) argued that the same properties of economic exchange which lubricate cooperation — i.e., joint decision-making, bilateral flow of benefits, the relationship created by successful negotiation — might as well exacerbate conflict-related aspects linked to partners' diverging interests. While Lawler (2001) suggested that perception of shared responsibility reduces competition bias in negotiated exchanges, the mere fact of interacting in the frame of an agreement prevents actors from inferring trustworthiness and developing affective commitment for exchange partners (Molm, 2003).

In sum, TRC and ATSE provide important insights to explain the formation of solidarity from economic exchanges. However, its scope seems to be limited to exchange networks where power differences between actors are not relevant, i.e. where competition between partners is not salient. In this context, successful negotiated exchanges can trigger an emotional mechanism that enhances solidarity between partners besides trustworthiness (see also Barrera, 2007). However, it is worth noting that most market-based economic exchanges in real social settings occur in situations of resource asymmetry and competition.

3.3 Reciprocity Theory of Solidarity

Building on criticism to ATSE, Molm, Collett, & Schaefer (2007) elaborated a more comprehensive view on the relationship between exchange forms and solidarity, which is called *Reciprocity Theory of Solidarity* (RTS). By extending previous results on risk and trust (Molm, Peterson, & Takahashi, 1999; Molm, Takahashi, & Peterson, 2000; Molm, Collett, & Schaefer, 2006; Molm, Schaefer, & Collett, 2007), RTS predicts varying effects of exchange forms not

only on actors' dyadic commitment, but on "the integrative bonds that develop between persons and between persons and the social units to which they belong" (Molm, Collett, & Schaefer, 2007, p. 207), as they defined *solidarity*. In this way, the aim of RTS is very close to how ATSE claims to explain the emergence of "micro social orders." However, unlike ATSE, RTS argues that: a) reciprocal exchange generates higher solidarity than negotiated exchange; and b) generalized exchange generates higher solidarity than direct exchange.

The model assumes that each exchange form entails a different "structure of reciprocity," defined by two dimensions: a) whether benefits are reciprocated directly or indirectly; and b) whether benefits flow unilaterally or bilaterally (Emerson, 1981; Molm & Cook, 1995; Molm, 2003). These variations are responsible in the model for the generation of three causal mechanisms: 1) the "risk of non-reciprocity;" 2) the "expressive value of reciprocity;" 3) the "salience of conflict" (Molm, Collett, & Schaefer, 2007, p. 211). As a first consequence, the risk of non-reciprocity is higher in reciprocal than in negotiated exchange (see also Molm, Takahashi, & Peterson, 2000; Molm, 2003). Moreover, generalized exchange is more risky than direct reciprocal forms, because actors are dependent on the actions of multiple others, such that risk increases proportionally to the length of the exchange chain. Therefore, the production of trust should also be higher in these contexts.

Secondly, reciprocation allows actors to infer the expressive value of the exchange because it can more easily be attributed to the partner's intrinsic motivations rather than compliance to a binding agreement. This is magnified by the unilateral character of benefits' flow, as an indefinite time gap occurs between initial transfer and reciprocation (see also Molm, 2003; Molm, Schaefer, & Collett, 2007). This is even stronger in generalized rather than direct reciprocity, given that the former does not imply even a tacit obligation.

Finally, the conflict between exchange partners is less salient in reciprocal than in negotiated exchanges, as in the latter the competitive nature of splitting resources is underscored by negotiation (see also Molm, Collett, & Schaefer, 2006). This conflict can be even less salient in generalized exchanges, where no direct relation between incoming and outgoing resources is established.

An experimental test of RTS was run by comparing all three forms of exchange (negotiated, direct reciprocal and chain-generalized) in both three- and four-actor exchange networks. This was to disentangle potential confounding effects of network size and power, according to the typical setting of SET laboratory experiments (see also Molm & Cook, 1995). Molm, Collett, & Schaefer assessed affective components of solidarity by measuring self-reported feelings of: a) *trust*, i.e., "the belief that the exchange partner will not exploit the focal actor;" b) *affective regard*, i.e., "positive feelings and evaluation towards the partner;" c) "the perception of the exchange relation as a *social unity*, with actors united in interests and purpose;" d) "*feelings of commitment* to the partner and the relationship" (2007, p. 207). Experimental results confirmed theoretical predictions, as subjects reported: a) higher feelings of solidarity in reciprocal than in negotiated exchanges; b) higher feelings of solidarity in generalized than in direct reciprocal exchanges.

To summarize, Molm, Collett, & Schaefer (2007) and Lawler, Thye, & Yoon (2008) provided conflicting experimental results on the effect of forms of exchange on solidarity. However, a closer look at the differences between their experimental designs reveals that the validity of findings depended on certain structural characteristics of the network where exchanges occurred.

Results reported by Molm, Collett, & Schaefer (2007) do not only support RTS, but also directly challenge the validity of ATSE. This is because subjects engaged in exchanges within

equal-power networks, i.e., no subject was more advantaged than others in terms of availability of alternative partners. Although previous experiments on risk and trust in direct exchange were performed with varying levels of power inequality (Molm, Takahashi, & Peterson, 2000; Molm, Peterson, & Takahashi, 2001), experiments by Molm, Collett, & Schaefer (2007) were designed so that they could be compared with predictions by Lawler (2001), which were conditional to equal-power networks. Furthermore, equal-power networks provided a conservative test for RTS, because the hypothesized mechanisms should have even stronger effects in unequal-power networks.

Moreover, experimental designs by Molm, Collett, & Schaefer (2007) and Lawler, Thye, & Yoon (2008) differed in one important feature, which anyway weakens the scope of ATSE. While in the former study direct exchanges occurred in negatively-connected networks — i.e., subjects could choose only one exchange partner at a time (Molm & Cook, 1995) —, the latter experiment was set in null-connected networks, where actors could simultaneously engage in direct exchange with multiple partners. As noted by Lawler, Thye, & Yoon (2008), conflict is less salient in null-connected networks, because they do not necessarily imply exclusion. Unlike direct exchanges, generalized exchanges always imply the transfer of resources to one actor at a time. This discrepancy could have made potential conflicts in direct exchange substantially less salient in the experiment by Lawler, Thye, & Yoon (2008), thereby producing stronger solidarity in direct than generalized exchange forms.

3.4 More Recent Developments

In conclusion, experimental research in Social Exchange Theory provides relatively discouraging results about the capacity of economic exchange to generate solidarity. Reported evidence suggests that interpersonal transactions framed by previously negotiated agreements can generate feelings of solidarity only under strict conditions, i.e. if partners are similar in terms of bargaining power and cannot simultaneously engage in similar exchanges with others. Otherwise, structural conflict between the partners' interests would prevent the development of feelings of solidarity. Considering that most market-based transactions occur in contexts of power imbalances and competition, we might conclude that economic exchanges in market-based economies structurally hinder the development of interpersonal bonds of solidarity. At the same time, the above presented research claims that feelings of solidarity need trust to establish between interaction partners, which in turn is possible as long as the partners can experience each other's trustworthiness through successful risky exchanges (Molm, Collett, & Schaefer, 2007).

Further studies seem to confirm this picture, although in a more nuanced way. Barrera (2007) found that repeated successful negotiated exchanges could generate interpersonal trust in a laboratory experiment where subjects played an Investment Game (Berg, Dickhaut, & McCabe, 1995) with previous exchange partners. However, displayed trust seemed to be related to subjects' individual characteristics than to the partners' perceived trustworthiness. Moreover, experiments run by Kuwabara (2011) showed that negotiated exchanges could generate relational cohesion as subjects reported feelings of belonging to a relationship with their partners only if negotiation was framed as a cooperative task by the experimental design. On the contrary, subjects were more inclined to frame the exchange as an opportunity for conflict when they had to negotiate within a zero-sum game or in a clear trustor-trustee relationship. Anyway, cooperative forms of negotiated exchanges could not generate trust along cohesion. Despite providing more context-dependent outcomes, these studies have substantially confirmed the

difficulty of economic exchanges to generate interpersonal bonds of solidarity.

However, while it surely points at limitations of Social Exchange Theory, recognizing “context-dependence” of highly abstract concepts of economic exchange is not enough to advance our understanding of their consequences. If economic exchanges inhibit the generation of solidarity because risk is substantially suppressed, then it is useful to disentangle the link between economic exchange and the assurance structures which manage risk. In this vein, Molm, Schaefer, & Collett (2009) have studied trust generated by negotiated exchanges with *non-binding* agreements and by reciprocal exchanges where partners were allowed to communicate. Although these experiments showed that reciprocal exchange produced a more resilient and affect-based form of trust, this form of negotiated exchange could generate interpersonal trust, albeit cognition-based and “fragile.”

Most importantly, these studies show that relaxing the boundaries between different forms of exchange allows to integrate experimental research with observational studies in order to look at economic exchanges in actual social contexts. Following this approach, Bianchi, Casnici, & Squazzoni (2018) have analyzed patterns of solidarity within a network of independent professionals who occasionally partnered on business projects by outsourcing parts of their work within the frame of informal or loose agreements. Results showed that successfully partnering in business was not sufficient for subjects to expect solidary behaviour, such as support in need situations, from their partners. On the other hand, support was likely expected from those professionals whom were considered as trustworthy partners in risky business, which in turn was predicted by previous successful collaborations. In sum, expectations of solidarity were not directly generated by economic exchange relations, although they were mainly framed by risky informal agreements. Instead, solidarity was generated as a by-product of the trust elicited by: a) direct experience in collaborations; b) indirect information on trustworthiness circulating within the network. To summarize, these results first suggest that interpersonal economic exchanges can indeed generate trust if they are framed by loose non-binding agreements (as also in Molm, Schaefer, & Collett, 2009). More importantly, this study showed that partners in successful economic exchanges who get to trust each other for risky business can develop bonds of solidarity.

4 Solidarity and Exchange beyond Conflict and Segregation

In the above sections, I have reviewed a stream of social empirical research which has studied the generation of solidarity from economic exchange relations. In order to do this, I have considered studies which have looked at solidarity dynamically as resulting from the generation of integrative bonds between individuals reporting feelings of solidarity or willing to behave in a solidary way to each other (Lindenberg, 1998). This strategy required to overcome the idea that the link between economic exchange and solidarity in a social system only consists in the overall equilibrium among self-interested individuals acknowledging their mutual convenience in refraining from opportunistic behaviour (Durkheim, 1893; Hechter, 1987; Coleman, 1990). Instead, an underlying assumption of this article is that economic exchange partners can develop beliefs on each other through their interaction, which can lead them to develop a different kind of relationship.

On the one hand, the reviewed literature reports clear experimental evidence on the effect of varying structural properties of exchange, such as risk, on solidarity. On the other hand, generalizing these results to actual social settings is still an open challenge, because linking abstract concepts to observable dynamics involving actual transactions and emergent social rela-

tionships calls for more observational studies. Yet, this issue remains an interesting question for our current societies, which are still experiencing an increasing integration in terms of the scope of markets and spatial mobility of persons. Here, interpersonal contact in economic contexts provides an important opportunity for new bonds of solidarity to develop between strangers, which eventually allows the emergence of new social groups and communities (Homans, 1950; Blau, 1964; Lindenberg, 1998), but also for new collective identities and political actors to establish (Pizzorno, 1983; Gould, 1995; Baldassarri, 2009). This is important not only because of the possible positive social consequences, but also to prevent possible negative consequences of interaction between strangers, such as xenophobic exacerbation of pre-existing collective identities, homophily-driven group segregation on ethnic or religious grounds, aggressive behaviour towards out-group individuals (see e.g. McPherson, Smith-Lovin, & Cook, 2001; Moody, 2001; Skvoretz, 2013; Boda & Néray, 2015; Flache et al., 2017). More generally, understanding the link between economic exchanges and solidarity can contribute to wider research on the micro-level mechanisms of solidarity in ethnoracially diverse societies (see e.g. Abascal & Baldassarri, 2015).

Moreover, while the reported studies point at aspects of economic exchange which can elicit trust and solidarity, they also show how other aspects can exacerbate conflict instead of cooperation — such as the inherent divergence between partners' interests, or the partners' power differences due to their positions in a wider exchange network —, thereby preventing generation of solidarity (Molm, Takahashi, & Peterson, 2000; Molm, Collett, & Schaefer, 2007). Here, one party can be tempted to behave opportunistically by not complying to agreements or exploiting contract loopholes, which eventually leads to an unsuccessful outcome for the other party (Williamson, 1975). Therefore, on the one hand informal exchanges with loose agreements allow for trust and solidarity to develop. On the other hand, their success is very fragile. More precisely, the more risk is entailed by the exchange structure and the institutional context in which it occurs, the more likely partners will develop trust and solidarity compared to strictly regulated exchanges. At the same time, the riskier the exchanges, the lower the likelihood of success and partners' satisfaction, which will not only fail to trigger the mechanism generating solidarity via trust, it will also likely reduce the probability of new exchanges between the partners.

Therefore, while it is important to study the underinvestigated link that goes *from* economic exchange *to* solidarity, we should not neglect the fact that economic exchanges in actual social systems are embedded in social structures made of pre-existing ties, power differences, cultural norms, institutional and organizational frameworks (Granovetter, 1985; Nee & Ingram, 1998). This could be instrumental to design organizational and institutional environments providing the conditions for solidarity to develop from actual economic exchanges — namely, independence in partner selection and risk (see also Bravo, Squazzoni, & Boero, 2012) — without reducing transactions or depriving employers and professionals from basic protection against exploitation and opportunistic behaviour (see e.g. Takahashi, 2000; Willer, Flynn, & Zak, 2012).

Finally, attention should be devoted also to avoid that economic exchanges exacerbate segregating tendencies already linked to dynamics of group solidarity. As interpersonal bonds of solidarity among strangers grow, new solidary groups emerge, whose members can benefit from mutual solidary behaviour. At the same time, these bonds define the boundaries of a group and the exclusion of out-group individuals from the benefits of group solidarity (Simmel, 1908). In this way, solidarity also works as a “principle of exclusion” (Komter, 2001, p. 385). Economic exchange — as a trigger of solidarity — can magnify this dynamic, as competi-

tion and power differences among potential exchange partners can let solidary groups emerge among selected partners along certain individual characteristics, while at the same time excluding others from both exchange networks and solidarity. As regards this topic, Bianchi, Flache, & Squazzoni (2020) have simulated the evolution of interpersonal mutual support ties among potential collaboration partners with different resource endowments. By assuming that support ties could emerge between partners via trust (Molm, Collett, & Schaefer, 2007; Bianchi, Casnici, & Squazzoni, 2018), their results showed possible segregation between those with higher and those with lower endowments. This occurred once it was assumed that network members aimed to partner with those with higher endowments, which resulted in a highly centralized exchange network. Eventually, support ties generated only within the network core, in which highly-endowed collaborators were positioned, while those more in need of support were pushed to the network periphery and did not get access to solidarity.

For these reasons, new research should look for mechanisms that elicit interpersonal bonds of solidarity from economic exchange, beyond conflict and segregation. While experimental studies have been instrumental to analytically disentangle complex relationships among various elements that compose the above described mechanisms, observational studies are needed to shift the focus on exchanges in actual social systems, where these elements reassemble in more complex social objects. In order to do this, research on multiplex networks can be key to analyze the links between different types of social relationships. Starting from classic works which found solutions to collective action problems in the complex intertwining between different types of relationships (e.g. Gould, 1995; Lazega, 2001), the analysis of multiplex networks can be focused on the study of the evolution of economic exchange relationships into bonds of solidarity (e.g. Bianchi, Casnici, & Squazzoni, 2018; Bianchi, Flache, & Squazzoni, 2020). By doing this, affective and instrumental relations can be analyzed by specifying their content — i.e., the type of resources which flow through them —, by disentangling interaction from individuals' motives. In this way, the *economic* can be studied as a specific type of the *social* which — consequently — can generate other types of social relations, without relegating the *economic* to the realm of anti-social self-interest and the *social* to a functional structure of constraints.

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