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## Article

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# Reputation in Offline and Online Markets: Solutions to Trust Problems in Social and Economic Exchange

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## Introduction

In his seminal 1985 paper, Mark Granovetter criticises classical and neoclassical economists' under- and modern sociologists' over-socialised conceptions of economic action. He argues that individuals do not maximise their utility functions independently of each other, but also that their actions are not the result of a behavioural script being executed since they internalised it through socialisation. Moreover, he criticises the ways these scholars have explained the necessity and existence of trust and cooperation in domains of social and economic life that are impenetrable to market mechanisms. Advocates of new institutional economics have argued that, in these domains, social and economic institutions will evolve that provide real incentives for cooperative behaviour and discourage moral hazard. Others have argued that, even in the presence of such institutional arrangements, actors will have to overcome a residual uncertainty in social interactions, and the fact that they do overcome it is evidence for a generalised morality and trust.

To these under- (institutional arrangements) and over-socialised (generalised morality) explanations of trust and cooperation, Granovetter adds a third view, which advocates the role of the embeddedness of economic action in networks of ongoing social relations in generating trust and discouraging moral hazard. He argues that "social relations, rather than institutional arrangements or generalized morality, are mainly responsible for the production of trust in economic life" (1985: 491), and sees the embeddedness approach vindicated in the variety of existing social structures. Moreover, embedded actors base their choices of transaction partners on better quality information about these partners' reputations than the atom-

ised actors implied by the under- and over-socialised views. Granovetter (1992) distinguishes between relational embeddedness, in which actors rely on information they obtain in their own dealings with a partner, and structural embeddedness, in which actors rely on information transmitted by trusted third parties in a social network (see also Buskens and Raub 2002). He considers the economists' notion of "reputation as generalized commodity" (1985: 490) to be of lesser relevance as it originates from an under-socialised conception of economic action.

The embeddedness idea has since shaped the ways economic sociologists think about economic action in general and the role of reputation in governing market interactions in particular (for example, DiMaggio and Louch 1998; Swedberg 2005). I will use Granovetter's (1992) embeddedness concept to discuss the role of reputation in offline and online markets. I will argue that, despite its empirical relevance and intuitive appeal, the embeddedness concept might not always be the better model for explaining reputation formation and the effect of reputation on cooperation in markets; there is also good evidence that institutional arrangements play an important role, and particular social structures can often be seen as an integral part of an evolved institutional arrangement. Moreover, I will argue that online markets with an electronic reputation system elude the embeddedness concept, because they fully connect virtually atomized actors and presuppose a certain level of generalised morality to function properly.

## Close-knit societies

Maybe the first accounts corresponding to Granovetter's idea of socially embedded economic action stem from early anthropologists' and sociologists' work on social exchange. Malinowski (1922) and Mauss ([1950] 1990) describe how, in archaic societies, social exchange spanned a network of multiplex relations in which economic exchange occurred side by side with ceremonial exchanges, namely formal rituals characterized by solemnity, decorum and disinterested generosity. In these societies, social exchange was

governed by norms of reciprocity, and a failure to reciprocate was punished by loss of reputation and status. It is believed that these ceremonial exchanges emerged because they created bonds of solidarity among tribal societies and maintained the social order that facilitated economic exchanges (Leach 1983).

In a similar vein, Sosis (2005) argues that economic action in many religious groups is embedded in religious practices which, if conceived as signals of group commitment, can be a cheap way of monitoring group members and producing the trust necessary for economic exchange. In general, within close-knit communities, trust and cooperation are maintained as it is easier to keep members informed about other members' past behaviour, and the punishment of cheats can be more effective, for it would also involve the cheats' social relations. If the trustworthy-making qualities of small communities such as religious groups become commonly known, then a religious identity can also serve as a credible signal of trustworthiness to outsiders (see also Diekmann 2007).

While traveling through America in 1904, Max Weber made several observations about the creditworthiness of members of various sects. On a railroad journey, he met a businessman selling iron letters for tombstones. The businessman declared: "'Sir, for my part everybody may believe or not believe as he pleases; but if I saw a farmer or businessman not belonging to any church at all, I wouldn't trust him with fifty cents'" ([1920] 2002: 128). When Weber visited a baptism ceremony later on, the significance of belonging to a religious community was explained to him: "'once [he is] baptized he will get the patronage of the whole region and he will outcompete everybody. ... Admission to the congregation is recognized as an absolute guarantee of the moral qualities of a gentleman, especially of those qualities required in business matters.'" ([1920] 2002: 129–130; see also Voss 1998).

These accounts showcase how the embeddedness of economic action in other ongoing social relations can produce the trust necessary in economic exchange, and individuals' concern for their reputations seems to play a central role therein. However, these accounts leave in the dark whether a dense network of social relations is a precondition for mutually beneficial economic exchange, or whether these networks can also be part of an institutional arrangement that evolved as a solution to the trust problems arising in economic exchange. As Granovetter (1992) points out with regard to institutionalist explanations of cooperation, one

has to be careful not to fall prey to the functionalist fallacy and declare that the reason why an existing institutional arrangement evolved is the problem it now solves. For instance, the strong group commitment and identity of religious communities may be the result of oppression by a dominant out-group rather than a function designed to safeguard the gains that can be made from mutually beneficial economic exchanges. In any case, given that in human pre-history social life was organized in close-knit communities, early forms of economic exchange were probably embedded in other social relations (although see Swedberg 2005: 234). However, with trade taking place across increasing geographic distances, there is evidence that networks are formed, rather than pre-existing ones used, to safeguard uncertain and complex economic exchanges.

## Organised embeddedness

The economic historian Avner Greif describes how long-distance trade in the Mediterranean during the eleventh century could be maintained despite the contractual problems faced by the traders. In eleventh-century Europe, long-distance trade was characterized by uncertainty, mainly due to problems with shipping and market fluctuations. Furthermore, many transactions could not be performed by the traders themselves, meaning that agents had to be assigned tasks involving the transportation and sale of the merchandise. The delegation of these tasks created contractual problems because of the information asymmetry between the merchant and the agent. For example, the agent could cheat the merchant by withholding relevant information about revenues. Greif (1989, 1993) argues that economic institutions evolved to overcome these problems. In particular, trade was organised in a coalition that excluded cheats and tolerated dishonesty towards them. Moreover, the coalition shared information about agents' and merchants' reputations along with other trade-specific information. Since there were few trading opportunities outside of the coalition, agents had a reduced incentive to cheat given the high risk of losing their reputation.

Although the trading coalitions described by Greif emerged within the community of Maghribi traders, who shared the same religious identity, actors' common group affiliations may not be a necessary condition for the formation of trading coalitions in general. Other studies suggest that uncertainty in product quality may induce economic actors to commit to long-term relations with particular trading part-

ners (that is, relational embeddedness). In his studies of a Moroccan bazaar economy in the 1960s, anthropologist Clifford Geertz (1979) called this tendency “clientalization.” Relatedly, Kollock (1994) cites two studies describing the formation of structures of commodity exchange in Thailand (Siamwalla 1978; Popkin 1981). These studies show how the lack of timely verifiability of a commodity’s quality (for example, rubber) leads traders to form long-term exchange relations to overcome potential trust problems through reputation building. In markets for products the quality of which can be easily verified (for example, rice), relational structures are less likely to emerge. Kollock tests this hypothesis in a laboratory experiment. His results show how an increase in the uncertainty of a traded commodity’s quality leads study participants to commit themselves to repeated interactions with the same partners, in which concerns for reputation start to matter (see also Brown et al. 2004).

More complex relations between economic actors (that is, structural embeddedness) can emerge if actors face not only uncertainty with regard to environmental conditions (for example, demand, competition, product quality and so on), but are also involved in the production of complex goods and services, such as in the movie industry. Jones et al. (1997) provide a theoretical framework that aims at explaining how structural embeddedness emerges as a result of the environmental uncertainties faced by firms providing complex products and services. They identify demand uncertainty, task complexity, human asset specificity and frequency of interactions as the main reasons why otherwise autonomous firms organise in informal social networks, so-called governance structures. These structurally embedded actors then jointly exert and are subjected to social mechanisms that coordinate and safeguard exchanges between them through shared norms and values, and reputational incentives and collective sanctions, respectively. Governance structures which are not too dense but also not too sparse, produce trust, and allow for fine-grained information transfer and flexible problem-solving arrangements (Uzzi 1997). Ultimately, strategic reputation building may be a motive for firms to join an informal social network comprised of successful firms (Gualati and Gargiulo 1999).

### Centralised reputation systems

Many market interactions, such as those between commodity buyers and sellers, money lenders and borrowers, or employers and job seekers, are not characterised by task

complexity. The main source of uncertainty in these interactions is the unequal (asymmetric) distribution of relevant information between these actors. Sellers hold private information about the quality of their products; borrowers hold private information about their creditworthiness; and job seekers hold private information about their productivity. In these domains a centralised reputation system might suffice to coordinate interactions between actors and safeguard their exchanges. In markets with a centralised reputation system, actors do not have to be embedded in social networks for their reputational concerns to be an effective driver of cooperative transactions.

Trade in the early middle ages in Europe was characterized by geographical specialization, bookkeeping, and cashless payment. At that time, the Champagne Fairs in France were a meeting point for traders from all over Europe. Milgrom, North, and Weingast (1990) discuss the emergence of a private adjudication system (the Law Merchant) which helped overcome trust and cooperation problems among anonymous traders. This system became a standard to govern commercial transactions in Europe. Administered by private judges drawn from commercial ranks, it provided a platform for traders to settle disputes and to document dishonest behaviour by trading partners. Along with a system of notaries, information about a trader’s past behaviour could be tracked and disseminated, and cheats could be excluded by destroying their reputations (Swedberg 2005: 236). Milgrom et al. (1990) identify two premises such a centralised reputation system had to fulfil in order to be effective. First, it had to adequately inform agents about their trading partners’ past behaviour, and second, it had to provide incentives to punish cheats. Thus, three types of costs were imposed on traders: The cost of reporting dishonest behaviour, the cost of obtaining information about a trading partner, and the cost of sanctioning.

Centralised reputation systems have also been used more recently to overcome trust problems between money lenders and borrowers. So-called credit bureaus started to emerge in the late nineteenth century and functioned as information brokers, who collected and collated information about borrowers’ liabilities, credit histories and other characteristics (Japelli and Pagano 2002). Credit bureaus are run privately, often by a group of lenders, and their services are based on reciprocity. To contain the free-rider problem in the reporting of borrower data, only lenders who submit accurate information about their customers are granted access to the entire customer database.

Such a reciprocal information-sharing system creates incentives for lenders to contribute to the common good of a comprehensive customer database. Moreover, borrowers who know that information about their credit histories will be shared among many lenders will have a stronger incentive to maintain a good reputation by timely debt repayment. As Japelli and Pagano (2002) show in an analysis of 46 countries, such information sharing is in fact associated with higher lending and lower default rates.

Credit bureaus are an early example of how the combination of modern information and communication technology (ICT) with simple institutional rules of sharing and providing information about customers' reputations have made the embeddedness of money lenders and borrowers redundant. Credit bureaus have established the premises for a functioning centralized reputation system identified by Milgrom et al. (1990): Modern ICT has considerably reduced the costs of maintaining the system; the reciprocal data-sharing rule gives lenders a strong incentive to report borrower data; and lenders can deny loans to borrowers with a bad credit history. In the past fifteen years, centralised reputation systems have become an important element of online markets.

## Online reputation systems

With the advent of the internet, online markets have emerged and have slowly revolutionised economic and social life. There are online markets for consumer goods (books, DVDs, mobile phones, shoes and so on), economics postdocs, "weed," houses, loans, plumbing work and so on. If we conceive of markets as social institutions that facilitate exchange (Coase 1988), then an entire range of social domains unfolds which previously were unsusceptible to market mechanisms on a large scale. There are online platforms for finding a date, finding a mate, finding a flat mate, sharing a car, sharing a ride, sharing time, swapping houses, exchanging cooked food and so on. Online markets efficiently coordinate supply and demand, and the internet opens up the possibility to advertise one's goods and services at a low cost to everyone online.

Despite their anonymity and social and geographical distance, participants in online markets do not have to be gullible to engage in economic or other social exchanges with each other. Most online market platforms implement an electronic reputation system that collects and disseminates information about participants' interaction histories, at virtually no cost (for early discussions of online reputa-

tion systems see Kollock 1999; Resnick et al. 2000; Dellarocas 2003). A typical online reputation system gives either or both parties to an interaction the possibility to rate the other party after a finished transaction. Actors can submit either positive or negative feedback, or give a rating between zero and five stars for instance; frequently, different aspects of the transaction can be rated in the same way (for example, friendliness, communication, delivery and so). Such quantitative ratings are generally accompanied by short written comments, and actors can also refrain from leaving feedback altogether.

Most studies investigating online reputation systems have focused on how reputation systems create incentives for (first-order) cooperation at the transaction level. With over two dozen empirical studies, probably the most widely studied online reputation system is the one implemented on eBay (for reviews see Bajari and Hortascu 2005; Resnick et al. 2006; Diekmann et al. 2014). Most of these studies find support for the theoretical expectations that traders with a better reputation will obtain higher sales and prices than traders who have not yet established a good reputation or traders with a bad feedback record. The financial value of a good online reputation gives actors a strong incentive to deliver their goods and services as advertised.

Providing truthful feedback after finished transactions is crucial for the functioning of online markets with an electronic reputation system. The more traders provide truthful feedback, the faster cheats will be detected and deterred from entering the market in the first place. However, only relatively few studies investigate actors' rating behaviour, namely their (second-order) cooperation at the feedback level. Similar to credit bureaus, reputation systems in online markets collect, collate, and disseminate the feedback information, and by leaving feedback actors contribute to a common good (Bolton et al. 2004). But unlike credit bureaus, participants in online markets have no real incentive to leave feedback. First, leaving feedback is costly in terms of time and effort. Second, market participants cannot be denied access to information about other traders' reputations. Third, one study estimates that more than 95 per cent of interactions between two eBay traders are one-off encounters (Diekmann et al. 2014). Thus, leaving feedback has no direct benefits for traders as most of them are unlikely to deal with the same partner again in the future.

In light of these facts, it appears puzzling that in studies on online peer-to-peer trading, feedback rates are reported to be above 50 per cent, with some even reaching 80 per

cent and more (for a review see Diekmann et al. 2014). This raises the question of what motivates traders to comment on each other's conduct after finished transactions. Clearly, the answer to this question will not identify a single motive but rather a range of motives driving feedback provision across individual traders. However, since feedback data are usually gathered from the internet, and as such only mirror traders' behaviour, one needs a good theory to infer traders' motives from the behavioural patterns observed in the data.

Based on a theory-driven analysis of hundreds of thousands of rating events, Diekmann et al. (2014) have shown that reciprocity, altruism, and strategic motives play an important role in traders leaving feedback after completed transactions. First, many online traders are inclined to reward good behaviour and to punish bad behaviour at a cost to themselves. Such reciprocal motives are consistent with the fact that a trader's inclination to give feedback increases significantly upon receipt of a rating from their trading partner. Second, many traders seem to anticipate and care about the impact their rating will have on the reputation of their trading partner. For example, traders are more likely to give a positive rating and they are less likely to give a negative rating to a trading partner who is still building a reputation. Third, there is evidence for strategic motives. Some traders postpone giving negative ratings to the very end of the rating period, supposedly because they fear retaliation.

Online reputation systems are maintained by the market platform providers and are at times subjected to deliberate adjustments. Thus, platform providers act as market designers, as institutional engineers, and have access to a huge amount of behavioural process data to inform their changes. However, basing changes in the rules that govern online markets on wrong assumptions about actors' underlying motives may backfire. More experimental research is therefore necessary to better identify and disentangle traders' motives for commenting on each other's conduct. In spring 2008, eBay changed their reputation system from a two-sided feedback system, in which both buyers and sellers could rate each other similarly, to a more asymmetric system, in which the buyer has more options to rate the seller than the seller has to rate the buyer. These changes are meant to induce more truthful ratings in buyers as sellers are bereft of the possibility to retaliate with negative feedback. These changes were guided by a thorough theoretical and empirical analysis that combined field data from

online markets with evidence from laboratory experiments (Bolton et al. 2013).

Electronic reputation systems in today's online markets substitute the network-based social mechanisms of reputation formation encountered throughout human history. Technological solutions made possible by the rapid spread of the internet have considerably reduced human involvement in mechanisms of reputation formation. However, human involvement has not yet become obsolete. Actors still have to consider information about potential interaction partners' reputation when choosing an interaction partner and when deciding which merchandise to buy; more importantly, they still have to feed the feedback system with information about their interaction partners' past behaviour. Electronic reputation systems have been optimised to encourage truthful information provision and facilitate accurate information processing by humans. The future will show whether electronic reputation systems can forgo these last bits of human involvement without forfeiting the proper functioning of online markets.

## Discussion and conclusions

Actors engaging in economic exchange have always been embedded in networks of other social relations through which information about their reputation is transmitted and selective incentives upheld. However, networks of ongoing social relations have not always been a necessary precondition of mutually beneficial economic exchange. In some cases, embeddedness is the result of the organizational form actors choose in order to overcome the uncertainty and complexity of their interactions. In other cases, simple institutions such as centralised reputation systems emerged which, without requiring actors to be connected via an "offline" social network, create incentives for cooperative behaviour. In today's online markets, centralised reputation systems have become a standard set-up for governing online economic exchanges. In online markets with a reputation system, traders can be conceived as structurally homogeneous and their interactions as isolated dyads.

The lack of embeddedness of traders in many online markets prompts some further thoughts. On one hand, it has been argued that relational and structural embeddedness also affect and reinforce the moral principles of the embedded actors (Granovetter 1992: 41–44); transmit norms and values (Gouldner 1960; Jones et al. 1997); and produce trust (Hardin 2004). On the other hand, moral princi-

ples, norms and trust are still necessary not only in isolated online economic exchanges, but also for online markets to function properly. While electronic reputation systems have proved to be a valid substitute for the ability of relational and structural embeddedness to produce trust, their function as “guardians” of moral principles and social norms remains rudimentary (Diekmann et al. 2014), all the more so as many online economic exchanges transcend national borders and cultures (Przepiorka 2013). However, other-regarding preferences and reciprocity turn out to be important drivers of truthful feedback provision, making them indispensable ingredients of a well-functioning online market.

The moral foundations of electronic reputation systems lie in the proximate and ultimate causes of actors’ enforcement of social norms and the punishment of wrongdoers. In laboratory experiments, Fehr et al. (2002) have shown that punitive preferences (so-called “strong reciprocity”) may be a key element in promoting cooperation in voluntary contribution games, and they sparked a cross-disciplinary debate concerning the determinants of human social cooperation (see Guala 2012). One question that has been raised in this debate is how society in general and social structure in particular impacts individuals’ (other-regarding) preferences (Fehr and Gintis 2007).

With regard to the topic of this essay, one may ask whether the lack of embeddedness will eventually lead to an erosion of the moral principles and norms on which online markets, and in particular their reputation systems, are based. Clearly, individual online traders are embedded in many ongoing social relations offline, through which moral principles and norms are transmitted and diffused. However, more and more social interactions are taking place online, and it seems that most technological and administrative innovations of the past three decades have made us more independent of each other. In his earlier papers, Granovetter (1985, 1992) disputes other scholars’ view that throughout history, economic action has become increasingly independent of other social relations – at that time maybe rightly so. From the vantage point of the present essay, however, one might suggest that in light of the growing popularity of online markets, economic sociologists should reconsider the problem of embeddedness.

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## Endnotes

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