

## Reciprocity in Online Knowledge Sharing: A Conceptual Analysis

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Many researchers are influenced by the Self-Determination Theory (SDT) (Deci & Ryan, 1985; Gagné & Deci, 2005) and view reciprocity as one of the psychological drives behind voluntary behaviors. The *intrinsic/extrinsic dichotomy* in the SDT concerns the source of psychological stimulus relative to an individual person's inner state of being. Because human beings are the source of stimulus for one another in social interaction, motivation scholars also establish a *self/other dichotomy* that differentiates between egoistic (or self-oriented) motivations and altruistic (or other-oriented) motivations (Batson, 1991; Snyder & Omoto, 2000).

Interestingly, there seem to be disagreements in the Information System (IS) literature on where to place reciprocity in those dichotomous confinements (Lindenberg, 2001). For example, in Peddibholta and Subramani's (2007) analysis of Amazon reviewers' profiles, reciprocity was defined as an other-oriented motive, which drove reviewers to produce higher quality content compared to self-oriented motives. Similarly, Osterloh and Rota (2007) view reciprocity as a "pro-social intrinsic motivation" that distinguishes from "enjoyment-based intrinsic motivation". However, Kankanhalli et al. (2005) found that reciprocity was not a "pro-sharing" norm in building electronic knowledge repositories, as users were extrinsically motivated by future help from others in lieu of their contributions. von Krogh, Haefliger, Spaeth, and Wallin (2012) took a more nuanced stance in their study of open source software communities and argued that reciprocity is "by definition extrinsic" but people could internalize it to form "internalized extrinsic motivations" (p.653).

We propose to resolve these discrepancies through a close examination of two intertwined attributes of reciprocation: one is *benefactor-oriented, back-looking, learned and reinforced by*

*past experiences*, and the other is *beneficiary-oriented, forward-looking, and based on normative beliefs*. We argue that the sense of indebtedness in the beneficiary, rather than the expectation of return in the benefactor, is key to understanding and cultivating the norm of reciprocity in online contexts. According to Gouldner (1960) and other social exchange theorists, when viewed as a pattern of mutually gratifying exchange of valuable resources, reciprocity is a behaviorist concept that follows the rules of reward and reinforcement (Cropanzano & Mitchell, 2005; Molm, Collett, & Schaefer, 2007; Nowak & Sigmund, 2005). Benefactor A provides a valuable resource to beneficiary B with anticipation that B will reciprocate something that A needs at the moment or in the near future. Reciprocity is clearly an extrinsic motivation for the benefactor to initiate the resource exchange. The problem, as game theorists have demonstrated, is that a beneficiary may seek to maximize her benefits by not returning anything to the exchange partner (Falk, Fehr, & Fischbacher, 2008; Fehr & Gintis, 2007). To maintain a long-term reciprocal relationship and achieve solidarity in a community, Gouldner argues, requires a generalized norm of reciprocity that morally obliges a person to return benefits received.

It was a significant development in theorizing reciprocity, against the backdrop of behaviorism dominance in 1960s. As Uehara (1995) points out, Gouldner helped to shift the analytical focus of reciprocity from the benefactor (who is extrinsically motivated by *getting back* the repayment) to the beneficiary (who is obliged to *give back* when she receives). As a result, the idea of equity or fairness – which seems central to the view of reciprocity as extrinsic motivation – becomes less prominent, because the moral obligation may be fulfilled at an unspecified time, to a third party, and with a nonequivalent repayment.

Although these premises sound contradictory to behaviorist beliefs that unequal or unreturned favor would undermine the community spirit, the sociology literature has long discovered that

people typically maintain asymmetrical or unbalanced social support relationships (e.g., Stewart, 1989). Anthropologists such as Pryor and Graburn's (1980) found that the gift giving among members of an Eskimo village manifest a pattern of low direct reciprocation, but the community showed no sign of tension or disharmony. Online community research has also revealed a similar asymmetrical pattern of give and take in many thriving online communities, with a minority of users contribute much more than other users (Preece, 2000; Preece & Shneiderman, 2009; Welser, Gleave, Fisher, & Smith, 2007). Aside from the impracticality of equal reciprocations in large-size communities, social exchange theorists believe that dyadic and direct reciprocation tends to result in a transactional and brittle social relationship. Generalized exchange with indirect reciprocity, on the other hand, leads to the conception of generalized rights and duties and, logically, to a more trusting, flexible, and sustainable community (Ekeh, 1974; Lévi-Strauss, 1969; Uehara, 1990).

As more and more empirical evidences contest the assumption that a healthy community entails a rough balance of give and take in the long run (Constant, Sproull, & Kiesler, 1996; Kollock, 1999), we suggest that the reciprocity research in online contexts should shift its attention away from benefactor's reward-driven motivation and focus on beneficiary's normative "indebtedness", a term defined by Greenberg (1980) as "a state of obligation to repay another" (p.4). With a sense of indebtedness, people who act by moral norm of reciprocity tend to avoid overbenefiting in social interactions (Greenberg & Westcott, 1983; Uehara, 1995). Studies in social psychology have found that individuals believing they would have an opportunity to reciprocate were more likely to request help from their exchange partner (Becker, 1990; Krebs, 1970). Wentowski's (1981) ethnographic work also shown that elderly people denied further assistance from caregivers who refused to accept symbolic or token reciprocity. More strikingly,

social support research reveals that thwarting a person's ability to fulfill his or her reciprocity obligations may cause emotional and psychological distress (Gleason, Iida, Shrout, & Bolger, 2008; Maisel & Gable, 2009; McClure et al., 2014). There is no systematic study of indebtedness in the online community literature, but some of the behavioral patterns documented in the literature may fit our indebtedness premise. For example, Joyce and Kraut (2006) found that newcomers who received replies to their initial posts were more likely to continue participating in the online community.

If the norm of reciprocity entices a sense of indebtedness in a beneficiary, then what actions would the beneficiary take to avoid over-benefiting? The beneficiary may 1) return the favor directly to the benefactor, 2) help a third party in the community, or 3) restrain oneself from seeking any further benefit (e.g., lurking or exiting the community altogether). Each of these actions will reduce the beneficiary's indebtedness, but impact the community in a different way. Direction reciprocation may only occur in small social groups, where "precise recognition of individual people" and "a memory of the various interactions one had with them in the past" (Nowak & Sigmund, 2005: 12) are possible. Indirect reciprocation and self-restraining from social interaction, however, are much more common in most online communities. Empirical findings in prior research have shown that knowledge creation in help-seeking forums is characterized by a pattern of generalized exchange, in which a helping act is reciprocated by a third party rather than the helpee (Wasko & Faraj, 2005; Wasko, Teigland, & Faraj, 2009; Wu & Korfiatis, 2013), and the majority of users are either silent lurkers (Preece, Nonnecke, & Andrews, 2004; Ren, Kraut, & Kiesler, 2007) or disappear after their first post (Arguello et al., 2006; Ren et al., 2012).

Therefore, for online community designers and managers, how to guide the sense of

indebtedness in beneficiaries to promote indirect reciprocity and prevent lurking or exiting is a key challenge. Due to low levels of control and weak incentives (Demil & Lecocq, 2006), it is unrealistic to expect equal engagement of each member in the community (Ransbotham & Kane, 2011; Wasko et al., 2009). For those beneficiaries who feel indebted, the online community system should provide proper mechanisms that afford and facilitate indirect reciprocation. For example, in a Q&A online community, after a question has been satisfactorily resolved, similar questions posted by others in the future could be presented to the asker when she logs in. For infrequent users, an email message containing these questions could be sent to them as a reminder of repaying the favor. This kind of mechanisms is particularly important in large-size online communities where new questions can be easily overlooked due to replication and overload of information.

By extricating reciprocity from “a conventional model that relies on short-term intrinsic and extrinsic motivation” (Von Krogh et al., 2012: 650), we attempt to rescue an important concept in online community research from what may ultimately prove to be only partially adequate theories of motivation (e.g. utilitarianism). The purpose of this paper has been neither to argue for the superiority of the beneficiary-oriented normative reciprocity perspective over other frameworks, nor to imply its adequacy as a complete explanation of social interactions in all online exchanges. Rather, our aim has been to suggest the perspective’s potential for explaining certain research findings and for generating plausible and interesting alternate hypotheses. The sociological theories of reciprocity may lead to greater theoretical diversity, a richer program of empirical study, and a more profound understanding of the dynamics of online communities.

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