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Gossip, Reputation, and Sustainable Cooperation: Sociological Foundations

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Abstract and Keywords

Gossip is often invoked as playing a fundamental role for creating, sustaining, or destroying cooperation. The reason seems straightforward: gossip can make or break someone's reputation. This chapter puts this standard reputational model to closer scrutiny. It argues that there are at least three other models to consider, and it presents an analytical framework to disentangle similarities and differences between these models. Explicating all three roles in the gossip triad, it allows to distinguish (a) individual motives behind gossiping, (b) its reputation effects on the actors, (c) the impact of gossip and reputation on the quality and sustainability of cooperation, and (d) the role of the context. Applying the framework reveals a deep divide between reputation and punishment models propagated by experimental economics and evolutionary psychology, on the one hand, and coalition and control models informed by sociology, on the other hand. The chapter discusses implications for a sociological research agenda.

Keywords: gossip, reputation, cooperation, punishment, reciprocity, social structure, cultural context, social mechanisms

Introduction

ONE of sociology's major concerns is to explain why the level of social cohesion differs so strongly within and between social collectivities.[1] Why do some societies, groups, communities, or organizations succeed in eliciting and maintaining high levels of collaboration and contributions to the public good, whereas others fail? How do successful communities enact and foster their participants' sustained compliance with norms and regulations?

Gossip and reputation are key to sustaining or breaking cooperation in human societies. Social and behavioral scientists seem to have taken this claim for granted for more than

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half a century now (Elias & Scotson, 1965; Simpson & Willer, 2015). This might explain why systematic attempts to scrutinize the interrelation between these phenomena are of a relatively recent date, as the outcomes of a small Web of Science query in the title, abstract, or keyword of indexed publications reveal. Although coarse grained, two noteworthy patterns emerge. First, in the forty years between 1960 and 2000, the search terms “gossip” and “cooperation” were mentioned together only twice. Since then, this figure increased to $n = 80$. For the joint occurrence of “reputation” and “cooperation,” the respective figures are 75 publications before, and 1461 after, the year 2000. The terms “reputation” and “gossip” occurred jointly 6 times before the year 2000 and 126 times since then, but before 2000, no single study contained all three search terms.[2] Even if the scholarly interest in the reputation-cooperation link grew dramatically, only few studies pay attention to the interplay between gossip and reputation or their joint link to cooperation.

(p. 24) Most of the studies treat gossip and reputation as different but related phenomena (Ellickson, 1991; Sommerfeld et al., 2007; Feinberg et al., 2012). They show that gossip, reputation, and cooperation are closely intertwined (Sommerfeld et al., 2008; Tennie, Frith, & Frith, 2010; Simpson & Willer, 2015; Wu, Balliet, & Van Lange, 2016): gossip affects reputations (Burt, 2008); reputations can be gained or lost through gossiping (Foster, 2004); and cooperation affects and is affected by both (Milinski, 2016). Hence, although research into the mechanisms through which gossip and reputation sustain or undermine cooperation has made considerable progress, a systematic overview of the links between these three phenomena is still missing. This chapter argues that one of the conditions hampering progress in this field is a major disciplinary divide that resulted in two almost parallel literatures on gossip, reputation, and cooperation. Overcoming this divide requires an integrated analytical framework that is able to accommodate the interplay between two levels of analysis. The first dimension consists in a behavioral micro-foundation that is able to integrate the disparate and seemingly conflicting assumptions about the motives and the effects of gossip. The second dimension refers broadly to *cultural-institutional* context, which represents shared rules, values, and meanings that constrain individuals’ actions, defining what is appropriate/relevant and what is not. It covers, among other things, rule of law and civic norms, gender stereotypes, and culturally legitimate practices. The *social-structural* context consists of the pattern of interdependencies between the involved parties, as well as their position in the broader social structure. It captures variations in the structure of social networks, as well as the degree to which hierarchy and power define a setting.

Sociology, with its emphasis on analyzing the interplay between individual and society, is particularly well equipped for integrating micro-behavioral foundations and macro-level dynamics. Before presenting the four main models (section 2), comparing their relative effectiveness (section 3), and suggesting avenues for future research (section 4), this section concludes by providing a short introduction to this chapter’s key concepts.

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Cooperation, or the joint production of mutual benefits, is needed when individuals cannot achieve specific outcomes on their own. Two dimensions of cooperation are particularly important when studying the mechanisms underlying production of the collective good (Wittek & Bekkers, 2015). First, cooperation can be the result of two types of prosocial behavior: where it results in net benefits for all involved parties, it is also referred to as *mutualism*. It becomes *altruism* in situations in which it benefits others but results in net costs for those engaging in it. Second, whereas first-order cooperation directly benefits another individual or group (e.g., helping someone in need), second-order cooperation refers to sanctioning uncooperative behavior of others, with direct or indirect costs, such as retaliation.

The various attempts to define *reputation* differ in complexity. At the simple end of the continuum, reputation is “one of many signals providing information about the likely behavior of an individual” (Tennie, Frith, & Frith, 2010, p. 482), or a “set of judgements a community makes about the personal qualities of one of its members” (Emler, 1990, p. 171). At the complex end of the continuum, it is a “socially transmitted typically evaluative judgment that is presented as consensual or at least widely shared” (p. 25) (Conte & Paolucci, 2002, p. 37). This definition emphasizes that reputation is a meta-belief: individuals believe that there are some others who hold an evaluation about someone or something, without any specification about the source of the belief (e.g., “rumor has it/people say/ I have heard that he is a good doctor”). Here, we define the reputation of an individual person, a social group, or a corporate actor as a *shared evaluation that others hold about these actors with regard to one or more criteria*. This definition emphasizes the collective aspect of reputations and distinguishes them from personal opinions; that is, “private” evaluations that are not known to or shared with others.

Gossip is evaluative talk about third parties in their absence (Emler, 1990). Gossip, per definition, takes place in a triad. Although gossip-related encounters in reality are more complex than a simple triadic representation (Besnier, this volume), taking the *gossip triad* as a point of departure is analytically useful for the purposes of this chapter (see Figure 2.1). Distinguishing among a *sender*, a *receiver*, and a *third party* or *target* allows us to spell out the antecedents and the consequences of different mechanisms on reputation and cooperation for each of the actors involved. Often, the information does not stay within the first gossip triad: receivers may pass the information on to somebody else, thereby becoming senders in the next gossip triad (Ellwardt, this volume).

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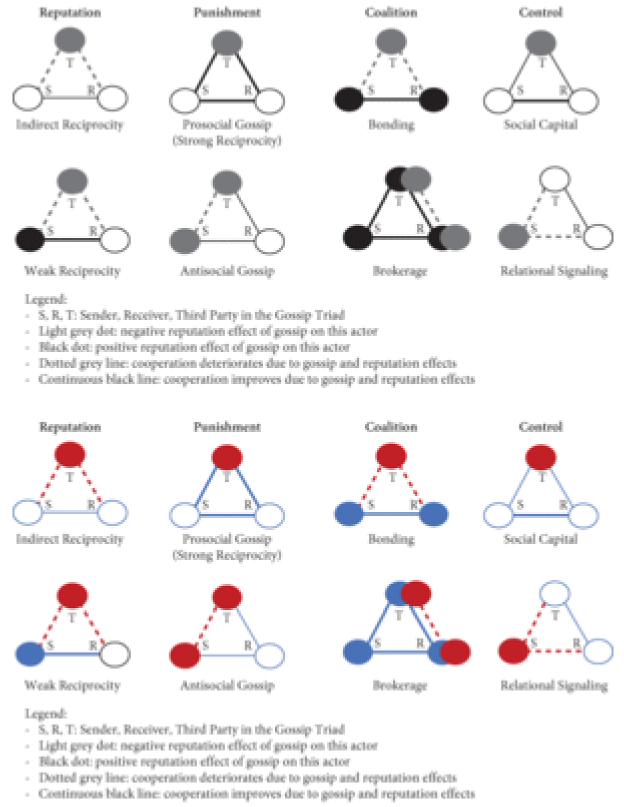

Figure 2.1. Summary overview of eight models of cooperation.

Although it is usually assumed that gossip consists mainly of negative evaluations (Birch Sterling, 1957), the little empirical evidence that is available indicates the incidence of positive and negative evaluations shared in gossip encounters to be equally high, at least in organizational settings (Wittek & Wielers, 1998). Gossip affects a third party's future opportunities for cooperation (Barclay & Willer, 2007) if it evaluates either their competences, their compliance or noncompliance to norms, or both (Giardini, 2012). (p. 26) Put differently, we can expect gossip to have effects on reputation mainly if it contains judgments about a third party's ability or willingness to cooperate.

Gossip, Reputation, and Sustainable Cooperation: Four Models

One of the major puzzles in the science of cooperation is to unravel the different social mechanisms behind sustainable cooperation. A social mechanism (Hedstrom & Swedberg, 1998) is a causal explanation that seeks to explicate how variation in collective-level phenomena, such as inter-group differences in the level of sustained contributions to collective goods, can be explained by individual-level processes.

Although previous research has identified a variety of social mechanisms explaining the relationship between gossip, reputation, and cooperation, we lack a systematic overview

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of their underlying assumptions. This chapter argues that four broad classes of mechanisms need to be distinguished, because they rest on fundamentally different premises concerning (a) their behavioral micro-foundation, in particular the goals and motives of the gossipers; (b) the degree to which gossip affects reputations of senders, receivers, and third parties; (c) the degree to which gossip and reputation affect the sustainability of cooperation in each of the three dyads of the gossip triad (sender–receiver, sender–tertius, and receiver–tertius); and (d) the cultural-institutional or social-structural context, that is, conditions facilitating or hampering the functioning of each mechanism (see Table 2.1).

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Table 2.1. Summary overview of stylized social mechanisms linking gossip, reputation, and cooperation. Table 2.1 summarizes the assumptions underlying different mechanisms linking gossip to reputation, on the one hand, and to cooperation, on the other hand. It does not contain mechanisms that do not specify a link to cooperation and reputation, such as social comparison or learning

Explanation				**Context**		**Effect of Gossip on Reputation of …**			**Effect of Gossip and/or Reputation on Cooperation between …**		
Model	Label of Mechanism	Behavioral Micro-Foundation	Example studies	Cultural-Institutional	Social-Structural	Sender	Receiver	Tertius	Sender-Receiver	Sender-Tertius	Receiver-Tertius
Reputation	*Indirect Reciprocity*	Receiver: information about previous uncooperative behavior of third party toward	Nowak & Sigmund, 2005; Wu, Balliet, & Van Lange, 2016			o	o	–	o	–	–

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		sender reveals the third party's unco-opera-tive type, leading the re-ceiver to avoid ex-change s with the third party									
	Weak Reci-procity	Sen-der: gossip-ing on-ly about defec-	Hilbe & Traulse n 2012; Jordan & Rand, 2017	Non-com-petitive culture	Non-anony mity, hori-zontal, partner	+	o	−	+	−	−

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		tors signals cooperative type of sender to receiver ("Responsible gossip"), leading to increased cooperation with receiver			selection						
Punishment	*Prosocial Gossip*	Sender: negative emotional reactions to	Feinberg et al., 2012; Feinberg, Willer, &	Fairness norms	Opportunity for partner selection	o	o	−	+	+	+

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		violation of fairness norms leads to “prosocial gossip” (“altruistic” punishment). Third party: fear of being ostracized leads to increased contributions to collective good	Schultz 2014								

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	Antisocial Gossip	Sender: having been punished for free-riding leads to emotions of revenge, triggering antisocial gossip against third parties who are cooperators	Herrman, Thoeni, & Gächter 2008; Hauser, Nowak	Civic norms, rule of law		−	o	+	−	−	+

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Coalition	*Bonding*	Sender: sharing (difficult to verify) information that damages the status of a joint “enemy” enhances status of sender and receiver, leading to more cooperation between	& Hodson, 1993; Dunbar, 1996; Wittek & Wielers, 1998	Competitive culture	Negative network closure; strong hierarchy	+	+	−	+	−	−

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		them, at the expense of cooperation with the third party									
	Brokerage	Sender: sharing information about unrelated third parties yields reputational and other bene-	Burt, 1998;	Legitimacy, (gender) stereotypes, conversational conventions	Structural Holes	+	+	+/−	+	+	+/−

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		fits for sender and re- ceiver throug h en- courag- ing or pre- venting cooper- ation be- tween receiv- er and third party, and sender and re- ceiver									
Control	*Social Capital*	Shar- ing in- forma- tion about	Cole- man, 1990	Norms	Posi- tive net- work clo-	o	o	−	+	+	+

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		norm violation of a third party increases the likelihood that sender and/or receiver sanction the third party, increasing the likelihood that the third party			sure; negative externalities						

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		improves cooperation with both									
	Relational Signaling	Third Party: where exchange partners are moderately functionally interdependent, having the reputation of a gossip-	Wittek & Wielers, 1998; Wittek et al., 2000	Strong or weak solidarity norms	Functional interdependence (positive and negative externalities), size of personal network, informal power	−	o	o	−	−	o

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		monger increases the likelihood that sharing third party information is perceived as a negative relational signal, leading to a decay of cooperation									

The table summarizes the assumptions underlying different mechanisms linking gossip to reputation, on the one hand, and to cooperation, on the other hand. It does not contain mechanisms that do not specify a link to cooperation and reputation, such as social comparison, or learning.

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Definitions: The *sender* is the person spreading information about a third party. The *receiver* is the person to whom the sender passes the information about a third party. *Tertius* is the third party about whom the sender discloses information to the receiver.

“+” indicates a positive effect or correlation.

“−” indicates a negative effect or correlation.

“o” indicates the absence of an effect, or that the effect is not mentioned in the original formulation.

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This chapter presents a comparative review of the mechanisms through which gossip and reputation sustain cooperation. As will become evident in the following sections, the four sets of mechanisms make competing as well as complementary predictions, and all of them are incomplete because they do not explicate the assumptions about all the effects of reputation and gossip.

Reputation Models

The first class of mechanisms reflects the standard explanation, according to which gossip sustains cooperation because it affects reputations. These *reputation models* are firmly rooted in rational choice reasoning, according to which cooperative relations are sustainable if the expected benefits of an exchange outweigh its expected costs. Since expected benefits and costs are a function of assessing the risk of being cheated, acquiring information about potential exchange partner's cooperative or uncooperative "type" is key to reputation models. The *indirect reciprocity* mechanism focuses mainly on the effects of gossip on the third party, whereas the *weak reciprocity* mechanism is predominantly concerned with the effect of gossip on the gossipmonger and/or the receiver.

(p. 27) Indirect Reciprocity

Indirect reciprocity arguments (Nowak & Sigmund, 2005) are at the core of a broad range of reputation models in economics (Kreps & Wilson, 1982; Greif, 1989), sociology (Raub & Weesie, 1990; Burt, 2001), and evolutionary psychology and biology (Alexander, 1987; Molleman, van den Broek & Egas, 2013; Nowak & Sigmund, 1998). Key to these models is that selfish and rational exchange partners base their decision whether to cooperate on information about how the other party behaved toward third parties in the past ("You scratch my back and I'll scratch someone else's" and "I scratch your back and someone else will scratch mine"). Gossip acquired directly from this third party can be one of the sources of this information (Giardini & Vilone, 2016; Ohtsuki, Iwasa, & Nowak, 2015; Sommerfeld et al., 2007).

Indirect reciprocity models do not require assumptions about the effect of gossip on the sender's or the receiver's reputation, nor on the impact of gossip and reputation on the cooperation between gossipmonger and the third party or the receiver. At their core lies the reputation of the target and its effects on cooperation between the receiver and the target. The emphasis is on avoiding the target if he or she has a bad reputation, not on changing the target's behavior through reputational concerns.

The theory of competitive altruism posits a complementary mechanism (Roberts, 1998; Noe & Hammerstein, 1994). It explains cooperation between the receiver and the target as the latter wanting to be selected for profitable relationships. Individuals perform prosocial acts to build up a reputation and to be chosen by cooperative partners. An implicit assumption in this argument is that the target's behavior might be changed by the desire of upholding a positive reputation.

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A main limitation of the studies on indirect reciprocity is their lack of attention toward the cultural-institutional context. For example, culture was found to affect the workings of indirect reciprocity (Henrich & Henrich, 2006) in a study comparing the effects of punishment on cooperation between groups of students in Beijing and Boston (Wu et al., 2009). Whereas Beijing students' cooperation decreased, Boston students' cooperation increased when they knew that the other could punish. In their *post hoc* interpretation of the results, the authors attribute the effects to differences in cultural attitudes toward reputation and authority. Since indirect reciprocity was not possible in the experimental setup, direct reciprocity was the basis for reputation formation. This form of reputation is argued to be more important in the individualistic cultures of Western societies, and therefore an important condition sustaining cooperation in the Boston sample, but not in the collectivist culture of the Beijing sample.

Weak Reciprocity

Another potential indicator of someone's "type" is whether he or she contributed to the production of second-order collective goods, that is, by sanctioning free riders. Several studies indeed suggest that it pays off to build a reputation for being someone who punishes free riders. Engaging in a punitive act against a free-rider signals the punishers' prosocial type to third parties (Barclay, 2006), thus increasing the punisher's perceived (p. 28) trustworthiness (Jordan et al., 2016). Such conspicuous displays of altruism through punishment allow individuals to build and maintain prosocial reputations (Griskevicious, Tybur, & Van den Bergh, 2010), thereby increasing their attractiveness as cooperation partners (Dos Santos, Rankin, & Wedekind, 2013). Furthermore, credible punishment threats warn potential free-riders that their behavior is likely to be sanctioned (Hilbe & Traulsen, 2012).

These arguments are the basis of a growing literature on the emergence and consequences of reputation systems for responsible punishment, in which negative sanctions are allocated only against free-riders. Such responsible sanctions "are a form of weak reciprocity: they are beneficial in the long run, despite being costly in the short run" (Hilbe & Traulsen, 2012, p. 3).

Costly signaling plays a main role in these explanations (Roberts, 1998; Van Vugt, Roberts, & Hardy, 2007), according to which behavior that can easily be faked or mimicked by those who do not have the underlying quality (Grafen, 1990; Zahavi, 1975) has little signaling value. But costly signaling arguments confront gossip researchers with a puzzle, because most scholars emphasize the low cost that gossip has for sender and receiver. More recent accounts cast doubt on the cheap gossip assumption, pointing to two types of potential costs.

First, gossipmongers may incur negative repercussions to their own reputations that can be severe if the gossiper is purposefully lying or misreporting information (Giardini, 2012). As social psychologists Adams and Mullen (2012) point out, gossiping may come

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with considerable social and psychological costs, because gossipers are less trusted and are more exposed to negative reputations than those who do not gossip.

Second, another potential cost of gossip is the possibility that the receiver will strategically exploit this knowledge for his or her own benefit, because it provides information about the sender's preferences and exchange opportunities. This can be especially true in situations of strategic interdependence and competition, in which gossip may reveal sensitive issues that the receiver may exploit. For example, in a business firm, gossipmongers who disseminate negative gossip about a specific colleague not only provide information about qualities of the object of gossip, but also about themselves and their personal network.

This ongoing debate shows the importance of studying what kind of reputation punishers develop under what conditions, and the consequences that their reputation has for them and the others. Here, too, the field is far from achieving a consensus, both with regard to theory and evidence. For example, Dos Santos and Wedekind (2015), using computer simulations, claim that reputation systems based on punishment would be far more likely to sustain cooperation than reputation systems based on generous actions. In contrast, in a theoretical reflection, Raihani and Bshari (2015) suggest distinguishing between competitive and cooperative reputations of punishers. They propose that punishers will be perceived as cooperative only in settings where it can be ruled out that their punishing behavior is driven by competitive motives. Whether or not a reputation for punishment yields the predicted benefits for the punisher is also a contested question in empirical research. In line with these findings, a recent study assessing how (p. 29) generosity and punishment affect the contributor's perceived trustworthiness in dictator and trust games found that punishers are not considered to be more trustworthy than non-punishers, and are actually trusted less (Przepiorka & Liebe, 2016).

Coalition Models

The relation between the sender and the receiver is the focus of *coalition models* of gossip in which the underlying motive for cooperation may be the realization of material or affective benefits through social relations. *Social bonding* explanations emphasize that gossip improves the cooperative relationship between the sender and the receiver at the expense of both party's' cooperation with the third party. *Brokerage* explanations, instead, stress that individuals who connect otherwise unconnected persons will strategically gossip with both, with positive effects for the gossipmonger's cooperative relations.

Social Bonding

Since Dunbar's (1996) influential contribution, gossip as social bonding is probably the most frequently cited mechanism linking gossip to cooperation. It assumes that a sender's motive to initiate a gossip episode is to strengthen the social bond and therefore the cooperation with the receiver. This comes at the expense of the cooperation that both the sender and the receiver have with the target, because gossip damages the reputation of the third party (Shaw, Tsvetkova, & Daneshvar, 2011; Wittek & Wielers, 1998). In a sit-

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uation in which there are status enhancement opportunities, the sender might use gossip also for signaling his or her access to private information, thus increasing his or her reputation and, as a consequence, becoming a more attractive exchange partner (McAndrew & Milenkovic, 2002).

Strong ties or coalitions can yield important material and psychological benefits, but this mechanism does not address reputation effects for sender and receiver. From a social bonding perspective, gossipers may have multiple self-serving motives to engage in a gossip exchange. They may gossip with those who are potentially important for them, or because it strengthens a relation that is intrinsically emotionally rewarding, providing, as it were, a "warm glow" for the gossiper and the receiver (Gambetta, 1994). Testing the bonding mechanism, a cross-sectional sociometric study carried out in five organizations and five school classes (Wittek & Wielers, 1998) found that an individual's tendency to gossip correlated positively with the number of coalition triads in his or her personal network. A coalition triad is defined by a strong and positive tie between two individuals who both have a "negative" tie to a third party (e.g., through dislike or conflict). Burt (2001) points in the same direction, suggesting that coalition structures favor selective disclosure of negative third-party information, thereby reinforcing predispositions about third parties.

One implicit assumption of bonding models is that for sender and receiver to exchange gossip about a target, they need to trust each other to some degree, which implies a preexisting social relationship between the two. But a study by Ellwardt, Steglich, and Wittek (2012) (p. 30) reminds us that the causality of this relationship can also be reversed. Investigating the co-evolution of gossip and friendship ties in a network of thirty-six employees of a childcare organization, it found that the likelihood for an employee to initiate a friendship bond with a specific other employee increases after the latter has shared third-party gossip with him or her before (for a review on gossip and social networks, see Ellwardt, this volume).

Although the outcome may be the same (strengthening the tie between sender and receiver), the underlying motives and targets may differ. On closer scrutiny, context conditions play a pivotal role in bonding. Building on research on gender stereotypes and the resulting differences in the functions of strong ties, an empirical study among Canadian undergraduates contextualized the bonding mechanism by introducing gender as a moderator variable (Watson, 2012). This study predicted and found a positive association between the tendency to engage in information and achievement related gossip and the quality of friendship ties for males, but not for females. The finding is in line with earlier research suggesting a stronger status motive in males than in females. However, the literature on sex differences in indirect aggression (for a review see McAndrew, 2014; Davis, Vaillancourt, Arnocky, & Doyel, this volume) also suggests that compared to men, women are much more inclined to use gossip with the intention to socially ostracize rivals, usually other women (Hess & Hagen, this volume). These findings imply that the bonding

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mechanism may work differently for men and women, with men attempting to impress the receiver, and women attempting to damage female rivals.

Two variations on social bonding explanations of gossip have been proposed. According to the *echo mechanism* (Burt, 2001), gossip does not improve sender's and receiver's reputation in their perception, but reinforces the negative image they already have of each other. Put differently, the receiver double-speaks, echoing the sender's negative accounts and stories about the third party. In a less negative interpretation, the target may simply not be able to change other individuals' opinions about each other. Hence, the echo mechanism draws on a more complex psychological model of human motives and the dynamics of conversations. Individuals are caught in social and cultural conventions proscribing consensus during discussions and the individuals involved prefer to comply with these conventions.

Gossip as a *weapons-of-the-weak* mechanism was first suggested by Scott (1986) in his work on everyday forms of resistance against power and abuse. In his account, gossip allows the unprivileged to ally against those high in power, providing them with a subtle but effective weapon against exploitation. Gossip and other forms of resistance require little coordination or planning, and they are used by both individuals and groups to resist without directly confronting or challenging elite norms (Conte & Paolucci, 2002). Gossip represents a threat for the elite, because it is difficult to identify and to contrast, but it is very effective in highlighting weaknesses and vices of those in power, thus reducing their informal power (for a psychological account of gossip and power see Farley, this volume). At the same time, gossip works as a threat to the high-ranking, who should not forget that they are closely monitored and their public and private life is under constant scrutiny (Brison, 1992; Meyer Spacks, 1985). Boehm (1999) proposed that (p. 31) gossip may serve for neutralizing the dominance tendencies of some individuals who might attempt to compromise the interests of the group. Given this power imbalance, such a mechanism implies that both sender and receiver belong to the same low-status group, whereas the target is part of the elite. No cooperation is possible between the target and the other two actors, whereas sender and receiver might form a coalition. According to Meyer Spacks (1985), "the ferocity of several centuries' attack on derogatory conversation about others probably reflects justifiable anxiety of the dominant about the aggressive impulses of the submissives" (p. 30).

The weapons-of-the-weak mechanism assumes the presence of a hierarchical social structure in which there is a clear distinction between those in power and those who are powerless. Power differences are an important context condition affecting the link between gossip and cooperation, and this leads us to predict that in environments with explicit power differences, the target will always be someone belonging to or connected with the higher-level group (Ellwardt, Wittek, & Wielers, 2012). However, another study found that informal power differences based on asymmetric workflow dependence did not moderate the negative impact of gossip on sustained cooperation (Wittek et al., 2000).

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Brokerage

Tightly connected social structures—in which each individual frequently interacts with and has positive ties with each other individual—are among the most frequently studied social conditions favoring reputation, but also social control effects of gossip. There is some empirical evidence that network closure favors the spread of information about third parties, so that "ego's opinion of alter is correlated with third-party opinion, and networks evolve toward a state of balance in which people bound by a strong relationship have similar opinion of others" (Burt, 2001, p. 41). But overall, the supporting evidence is inconsistent. Based on the results of a sociometric organizational study, Burt (2001 p. 59), concludes that "the broader range of evidence calls into question the common assumption that closed networks improve information flow," that is, strong indirect connections do not enhance disclosure of information about third-party behavior. Similarly, more recent experimental research on the prisoner's dilemma did not find significant differences in cooperation rates between an "embedded" condition, in which subjects were informed about both the outcomes of their own interactions and the outcomes of all other interactions, and the "atomized" condition, in which they only were informed about the outcome of their own interactions (Corten et al., 2016).

The key idea behind Burt's research program on structural holes (Burt, 1992, 2005, 2007, 2008) is that the broker—an individual connecting two otherwise disconnected individuals and their networks—benefits from gossiping either because gossip drives his or her contacts apart (*tertius gaudens*), or it brings them together (*tertius jungens*). Brokerage generates two types of benefits for the broker: information and control benefits. The former includes access, timing, and referrals, with the latter representing reputation benefits as they follow from positive information passed to others about the broker. Control benefits result from the broker's opportunity to strategically move "accurate, ambiguous, or distorted information" (Burt, 2000, p. 355) between the sender and the (p. 32) target. Positive reputation effects and power attributions also derive from others seeing the broker in such a gatekeeper position, passing important and exclusive information. Brokerage in Burt's framework also affects the reputation of both sender and receiver. In situations where brokers play *tertius jungens*, they will convey positive images of each other to both the target and the receiver. And where brokers play *tertius gaudens*, they will convey negative images.

Consequently, gossip through brokerage can have two different effects on cooperation in the gossip triad. In the *tertius gaudens* case, the sender will invest in the maintenance of a cooperative relationship with the receiver but at the same time will attempt to prevent the emergence of a cooperative relationship between the latter and the target. In the *tertius jungens* case, the sender attempts to encourage the emergence of a cooperative relationship between receiver and target. This may weaken or even result in the termination of the cooperative relationship between them. The assumed motivational basis behind brokerage is self-interest: the broker strives for increasing his or her benefits (see also Obstfeld, Borgatti, & Davis, 2014). Thanks to their position as an intermediary, brokers can realize information and control benefits. For example, a broker can selectively pass

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information from one part of his or her network to another part of the network. To the degree that this information is valuable and scarce, the receiving party may be willing to remunerate the broker.

There are important contextual and institutional elements, however, that could affect the brokerage mechanism. Legitimacy, that is, being fully accepted as a member of the in-group, turned out to be a key moderator in a network study of career patterns of a sample of 284 middle managers in a large American firm. Assessing the returns to gossip for individuals occupying structural holes, Burt (1998) shows that women, but also entry-level men and non-whites, lacked legitimacy. Therefore, they could not benefit from their brokerage position to the same degree as men, seniors, and whites did: their careers progressed significantly more slowly. The reason is negative stereotypes toward them; that is, the widespread belief that members of these categories were less able or qualified for the job than others. The study further shows that this disadvantage disappeared for those who had a "sponsor" in their personal network: powerful representatives of the firm's male, white, senior elite who occupy brokerage positions themselves and could boost the reputation of their mentees.

Social Control Models

Though gossip has often been portrayed as an instrument of social control, the underlying process is less straightforward than it seems at first sight. Social control explanations emphasize that gossip is inextricably linked to norms: their joint production as well as the prevention and mitigation of norm violations. *Social Capital* explanations focus on the effect of gossip on senders and receivers, in particular their willingness to allocate sanctions against the third party. *Relational signaling* explanations investigate how a reputation of being a gossipmonger impacts on the cooperative relation with the receiver.

(p. 33) Social Capital

If one follows sociologist James S. Coleman (1990), who reasons from a straightforward rational choice framework, we do not need to invoke emotional reactions to explain under which conditions individuals will be inclined to gossip. Instead, where norms have emerged to manage mutual interdependencies, the beneficiaries of the norm have a regulatory interest to sanction free-riders. However, this does not yet solve the second-order free-rider problem. A solution could be offered by gossip, partly because it "may have little cost for the beneficiary of the norm, the one who passes gossip or the one who receives it, and also brings him potential benefits." But Coleman stresses that the act of sharing information about norm violations by a third party in itself is not the same as enforcing it through allocating a sanction or a punishment (see also Elster, 2003). This will happen only if the receiver indeed holds the norm and there is some degree of consensus among other norm holders concerning the behavior of the third party: "The benefits lie in the facilitation gossip provides, through the consensus it brings about, for sanctions that might not otherwise be possible … It is clear however that gossip itself does not constitute a sanction … the consensus lowers the costs for any holder of the norm to apply a sanction, but does not ensure that a sanction is applied" (Coleman, 1990, pp. 284–285).

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Coleman's description points to an element often overlooked in most current studies: the role of norms. Although much gossip is most likely triggered by some form of norm violations (Gluckman, 1963; Ellickson, 1991; Kniffin & Wilson, 2005), the link between norm violations, gossip, and cooperation still remains understudied.

In sum, rather than emphasizing the negative reputation effects on the third party and the partner selection effects for the receiver, this mechanism stresses the importance of gossip as a coordination device for the sender and the receiver. Therefore, gossip is the first of two steps in a social control mechanism: it mainly affects the relation between sender and receiver because it leads to some joint deliberation about the kind of norm violation committed by the third party. In order to change the future behavior of the third party, the second step would be to sanction the third party, or to apply some other compliance gaining strategy (Kellerman & Cole, 1994). According to Coleman and other social control theorists, this will be the case only under specific circumstances, in particular in close-knit social structures. In sum, the social control mechanism does not make any specific predictions about the implications that gossip has for the cooperation between *tertius* and the other two members of the gossip triad. In this respect, the social control mechanism differs from explanations based on indirect reciprocity, which stress the decay of cooperation between the target and the receiver as a consequence of gossip.

Relational Signaling

Relational signals are behavioral cues based on which individuals assess their exchange partners' intention to contribute to a mutually beneficial relationship (Lindenberg, 1997; Wittek, 1999; Wittek et al., 2000). The importance of relational signals increases with mutual interdependence and the strength of the solidarity norms emerging with it. In such cases, gossiping is likely to be seen as a negative relational signal, because it violates (p. 34) a major remedial norm of solidarity relations (Ellickson, 1991), that is, that grievances or problems should be discussed directly with the person in question and not behind the person's back. This is why in work settings with some degree of interdependence, individuals with a reputation for being gossipmongers will be trusted less, making it more difficult for them to sustain cooperative relationships. A longitudinal organizational network study among seventy-four employees of a Dutch Housing corporation (Wittek et al., 2000) showed that dyads in which at least one member has a strong tendency to gossip have an 8%–10% lower likelihood for a sustainable cooperative relationship, compared to pairs without such individuals. This finding suggests that the negative relational signaling effects of reputations as gossipers are not restricted to situations of interdependence, as the theory predicted, but extend to situations of dependence and independence as well. In fact, as a related study found, gossip and other forms of "indirect" social control represent a separate latent cognitive dimension than more "direct" forms of social control (Loughry & Tosi, 2008; Wittek, 1998). In sum, according to relational signaling theory, gossiping has a negative impact on the gossipmonger's reputation and therefore also damages the cooperative relationship with receivers and third parties (see also Noon & Delbridge, 1993).

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Punishment Models

The last class of models we review departs from standard economic reasoning of reputation models. Even if the so-called *strong reciprocity* hypothesis does not explicitly address the role of gossip as a form of sanctioning, this theory can provide useful insights on the relationship between costly punishment and gossip. *Altruistic gossip* explanations focus on the effect of gossip on the third party, whereas *antisocial gossip* explanations are concerned with the motives behind negative gossip about co-operators. Both are rooted in the assumption that emotions drive the behavior of the members of the gossip triad.

Prosocial Gossip

Research on cooperation received a major and lasting boost from a *Nature* article with the title *Altruistic Punishment in Humans*, written by two behavioral economists and published in the year 2002 (Fehr & Gächter, 2002). Their study was triggered by the puzzle that humans frequently cooperate even in the absence of tangible benefits, including situations "when reputation gains are small or absent." Subjects participated in a public goods experiment with two conditions. In the control condition, they could not punish free riders. As is common in public good experiments, the incidence of cooperative acts (contributions to the collective good) decreased over time. In the treatment condition, subjects had the opportunity to punish free-riders at a cost to themselves. Subjects frequently made use of this opportunity and cooperation increased with each round. The authors concluded that sustained cooperation is possible given there is a sanctioning regime, in which participants are allowed to punish defectors, whereas cooperation is bound to decline in the absence of sanctioning opportunities. Fehr and Gächter's study (p. 35) (p. 36) (p. 37) (p. 38) contributed to the development of the *strong reciprocity hypothesis*. This notion reflects the two-pronged key mechanisms proposed by their study: humans' willingness to cooperate, and their disposition to punish those who don't. In line with the strong reciprocity argument, a set of recent experimental studies by Feinberg and colleagues (Feinberg, Cheng & Willer, 2011; Feinberg, Willer, & Schultz, 2014) argues that the same negative emotions supporting people's decision to incur costs for punishing free riders also motivate them to gossip (Martinescu, Janssen and Nijstad, this volume). This solves the second order free-rider dilemma because gossiping is virtually costless—some scholars indeed portray gossip as a form of sanctioning at the low-cost end (for the person allocating the sanction) of a continuum of punishment (Boehm, 1999; Ellickson, 1990; Giardini, Conte, 2012; Guala, 2012). A follow up-study (Feinberg, Willer, Schultz, 2014) shows that settings allowing both gossip and the opportunity for partner selection, are better able to sustain cooperation than settings that either only provide the opportunity to gossip, or neither of the two. Gossiping should contribute to the sustainability of the targets' cooperation with both sender and receiver. Feinberg and colleagues' reasoning requires that the third party becomes aware of the threat of being ostracized—an assumption that remains implicit in their study.

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Antisocial Gossip

Research on the strong reciprocity hypothesis soon was enriched by another hypothesis on the link between emotional reactions, punishment, and sustained cooperation. In their study on *antisocial punishment* Herrman, Thöni & Gächter (2008) showed that the opportunity to punish not only enables cooperators to altruistically sanction free-riders, it also allows free-riders to punish cooperators. Computer simulations, lab experiments and field studies suggest that this so-called *antisocial punishment* in fact may undermine cooperation (Hauser, Nowak & Rand, 2014; McCabe & Rand, 2014). The emotional force behind it, so the assumption, is that "people might not accept punishment, and therefore seek revenge" (Herrman, Thöni, & Gächter, 2008, p. 1363). Hence, also gossip may be motivated by revenge, and used as an instrument to punish cooperators. This "antisocial gossip" mechanism would predict a negative effect of gossip on the reputation of those individuals who have previously punished the sender. The consequence would be a decay of the cooperation between the third party and both the sender and the receiver. No specific predictions would follow for the cooperation between or the reputation of the antisocial gossiper and the receiver.

Discussion

Gossip can affect cooperation through four potentially competing mechanisms. It can be part of a rational logic of indirect reciprocity, making and breaking reputations. It can be a tool for building and reinforcing coalitions or reaping the benefits from brokerage positions. It can be the first step in a two-step process of social control, facilitating (p. 39) coordination between and eventually triggering remedial steps fostering future norm compliance. And it can be prompted by negative emotions, feeding a cycle of punishment and counter-punishment. Gossiping also often comes with considerable costs for those spreading it. It is easily perceived as a violation of remedial norms, and acquiring the reputation of being a gossipmonger undermines one's trustworthiness.

A key question concerns the relative effectiveness of each of the four mechanisms in sustaining cooperation. Attempts to answer this question have created quite some controversy, fueled by the competing behavioral micro-foundations (e.g., altruism vs. selfishness) underlying the four mechanisms. More specifically, it reflects a growing number of studies questioning the standard explanation, according to which third-party reputations—rather than related mechanisms of punishment, coalition, and control—drive the effect of gossip on cooperation.

The potential incompatibility between reputation and coalition models becomes evident when comparing indirect reciprocity with the echo mechanism. The latter draws on a more complex psychological model of human motives and the dynamics of conversations, positing that individuals prefer to comply with social and cultural conventions proscribing consensus during discussions. As a consequence, gossip does not change the reputation of the third party, but simply reinforces the negative image the conversation partners already have of the person. Hence, whereas indirect reciprocity models predict that gossip

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contributes to sustaining cooperation in the gossip triad, the echo hypothesis implies that no noteworthy changes occur.

Although superficially similar, there are two important ways in which social control differs from indirect reciprocity explanations. First, Coleman's normative consensus model emphasizes the effect of gossip on the expected costs, as perceived by the receiver, of allocating a sanction. These will be lower to the degree that there will be more beneficiaries of the norm being aware of and agreeing about the norm violation. (Indirect) reciprocity theorists stress the effects of gossip on the reputation of the target, which in turn feeds into the receiver's assessment of future exchanges with the target. Whereas in social control gossip will trigger behavioral changes in the receiver only in case the information is about a norm violation, in indirect reciprocity models the crucial feature is the negative reputation of the target, without any specifications about the norm. Second, in case the receiver and others indeed perceive it as a norm violation, avoiding future interaction with the norm violator is a possible reaction, but one that will be used only as a last resort. Instead, the very purpose of social control is to increase future norm compliance of the individual in question.

One criticism against the strong reciprocity argument relates to Fehr and Gächter's (2002) observation that because cooperation was found in a setting that rules out reputation formation and direct reciprocity, reputation mechanisms may be a less powerful explanation for sustainable cooperation than altruistic punishment. But they did not directly compare the relative explanatory power of altruistic punishment and reputational concerns. Several studies set out to do just that. The key issue here is that whereas punishment is costly for the punisher, "reputation mechanisms discipline by withholding action, immediately saving costs for the 'punisher'" (Rockenbach & Millinski, 2006, p. 718). (p. 40) This option makes punishment less attractive, and it should result in reputation to be the most frequently invoked mechanism to sustain cooperation. Using public good experiments, Rockenbach & Millinski (2006) found only partial support for this prediction: although the use of punishment decreased markedly, it was still used, and cooperation levels remained highest in the scenario in which both punishment and reputation building were possible.

More recent experimental studies using the public goods game argue and find that reputational concerns, whether or not spread through gossip, may be more effective and efficient than punishment in promoting and maintaning cooperation (Wu, Balliet, & Van Lange, 2016; see also Grimalda et al., 2016). Finally, other researchers even consider punishment as maladaptive in the evolutionary sense, and therefore not suited as a strategy to sustain cooperation in the long run.

Since most evidence on strong reciprocity is based almost exclusively on experimental evidence, another line of criticism questions that humans would make widespread use of "costly punishment" also "in the wild" (Guala, 2012). This criticism is based on an examination of results of field studies performed by cultural anthropologists and sociologists. The picture emerging is that costly sanctioning, if it occurs, is carried out by centralized

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institutions, whereas the bulk of sanctions that can be observed imposes "little or no costs to those who administer them" (Guala, 2012, p. 9). Gossip is considered to be a key low-cost punishment mechanism in what several authors conceived as a continuum of sanctioning (Boehm, 1999; Ellickson, 1991), which ranges, in increasing severity, from ridicule and gossip to direct verbal reproach to social ostracism to homicide (Guala, 2012, p. 8).

Incorporating gossip as a mechanism that can reduce errors in assigning reputations, a simulation study by Ohtsuki, Iwasa, and Nowak (2009) finds that the use of costly punishment tends to reduce the average payoff for the group. It concludes that "the efficient strategy for indirect reciprocity is to withhold help for defectors rather than punishing them" (2009, p. 79). Another agent-based simulation comes to a different conclusion (Giardini, Paolucci, Villatoro, & Conte, 2014; Giardini, Paolucci, Adamatti, & Conte, 2015). Here, too, agents could either incur a cost to reduce the payoff of free-riders, or they could refuse to interact or defect with free-riders based on information about their reputation, distributed through gossip. But the simulations yielded the highest cooperation rates when both punishment and reputation-based partner selection were possible, but also the use of either strategy on its own still resulted in high levels of sustained cooperation. An experimental test of this hypothesis was in line with this prediction (Wu, Balliet, & Van Lange, 2016).

Conclusion

The theories and findings presented in this chapter reveal a rich but fragmented picture, suggesting the existence of two almost parallel literatures on gossip, reputation, and cooperation. On one side there are reputation and punishment models, carried out by (p. 41) behavioral economists, theoretical biologists, and evolutionary psychologists. They lean heavily on highly controlled and therefore almost context-free simulation studies and lab (and more recently also field) experiments, with the relatively short time horizons of a lab session. On the other side there are coalition and control models, carried out by sociologists and anthropologists. They rely strongly on medium and long-term ethnographic fieldwork, longitudinal sociometric studies, or survey research, most of them highly context dependent and not generalizable beyond the specific population under study. Progress in the field might benefit from both literatures taking notice of each other's existence. Such an attempt would need to go beyond the traditional "selfishness versus altruism" divide, as the findings of a recent study with the telling title "Exposure to Superfluous Information Reduces Cooperation and Increases Antisocial Punishment in Reputation-Based Interactions" show (Dos Santos, Braithwaite, & Wedekind, 2014). It found that subjects' working memory in helping games can be easily disrupted by some superfluous words preceding reputation-based interactions, resulting in a decrease of generosity and an increase in anti-social punishment. Hence, behavioral models should not only account for the fact that individuals may sometimes act selfishly and sometimes in the best interest of someone else, but also that their motivation is highly susceptible to subtle changes in the situation. As outlined elsewhere (Wittek, Snijders, & Nee, 2013), theories of social

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rationality have the potential to do just that. For example, goal-framing theory posits that human behavior is motivated by one of three overarching goals at a time, and that these goals differ in their a priori strength (Keizer, Lindenberg & Steg, 2008), with the strongest being the hedonic goal frame ("improve the way you feel right now"), followed by the gain goal frame ("preserve or improve your resources"), and finally the normative goal frame ("act appropriately"). Being brittle by nature, the normative goal frame needs continuous support from the social and institutional context, for example in the form of group activities emphasizing the importance of joint production (Wittek, Van Duijn, & Snijders, 2003). Where such environmental cues are weak or absent, gain or hedonic motives will push normative motivations into the background. Consequently, goal framing theory's key question would be to what degree and how gossip, reputations, and context foster or undermine norms of cooperation. Norms would need to be center stage in this emerging interdisciplinary research agenda, since they remain the foundation for sustainable cooperation.

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Notes:

(1.) The authors of this chapter contributed equally.

(2.) In August 2017, “cooperation,” “gossip,” and “reputation” occurred together in thirty-two publications.

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