CHAPTER 4

Reciprocal altruistic behavior in dilemma situations.
Helping as a response to a need or scorekeeping?¹

1 Introduction

What would you do if someone you didn’t know so well – let’s say a vague acquaintance – repeatedly asked you for favors? Most probably, it should not take long before you would start to feel exploited: being just an acquaintance he should reciprocate your favors. But what if this person were a friend? In that case you would probably be drawn between two considerations: on the one hand, *he is a friend, and he needs my help, so I should help him*. But on the other hand, there might be some degree of entitlement: *he is in my debt and people should repay their debts*.

The idea that the providing of benefits is organized by different relational models, depending on who is the recipient of the benefits, has been subject of both theoretical accounts and empirical studies. Clark and Mills (1979) distinguish between *exchange relationships* and *communal relationships*. Communal relationships are characterized by mutual concern about each other’s welfare and a positive attitude towards benefiting the other when a need exists. Exchange relationships, on the other hand, are characterized by the obligation to reciprocate a received benefit with a comparable return benefit. Clark and Mills hypothesize that individuals have communal relationships with family members, romantic partners and friends, whereas relationships with acquaintances, strangers and business partners pertain

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to the domain of exchange relationships. The results of their experiments demonstrate that towards (potential) friends or romantic partners, subjects are less likely to keep track of benefits provided and benefits received, and show more liking if the other does not keep track of benefits provided and benefits received, than towards strangers or persons who are not available for friendships or romantic partnerships (see also Clark 1984). Deutsch (1975) distinguishes between different norms of distributive justice. The equity norm, according to which a person’s received benefits should be proportional to the costs he has made, is very suitable to describe the operation of exchange relationships. In contrast, the need norm, according to which a person should be rewarded according to his needs, is apt to describe the workings a communal relationships. In a study by O’Connell (1984), the presence of different norms governing exchange behavior was tested among people who build their own houses. The results show that benefits exchanged between kin and friends, in contrast to benefits exchanged on the market-place, are governed by non-instrumental concern and the need norm.

Similar distinctions can be found in a number of theoretical accounts. Fiske (1992) proposes four universal forms of sociality, of which communal sharing is identical to Clark and Mills’ communal relationship, whereas both equality matching, in which people keep track of the imbalances among them, and market pricing, where all relevant features and components are reduced to quantitative utilities, can be considered as part of Clark and Mills’ exchange relationship. Lindenberg (1988; see also Lindenberg 2000) distinguishes between strong solidarity and weak solidarity relationships. Strong solidarity relationships are similar to communal relationships to the extent that there is a focus on the common interest and on the equality of the individuals involved; weak solidarity relationships are similar to exchange relationships to the extent that they are characterized by individual gain and a direct correlation between one’s investments and one’s rewards. Additionally, Weiss (1998) distinguishes between attachments, which are characterized by the perception of the other as a secure base, and affiliations, in which the aim is to advance a common interest. The distinction between these two types of relationships can be traced back to older discussions within the social sciences in which models recognizing the importance of social needs and motivations were offered as a reaction to the economic models of purely self-interested individuals (Blau 1964; Ekeh 1974; Homans 1974).

As long as the situation is unambiguous, the distinction between communal and exchange relationships is non-problematic. If persons are in a communal relationship, they help each other without expecting a future return. On the other hand, if they are in an exchange relationship, they expect their benefits to
be reciprocated by comparable benefits. As soon as the situation is less unambiguous, however, containing characteristics of both communal and exchange relationships, the theory does not predict how people will behave. For example, how to behave towards business partners who are also friends? Or how to respond to a friend who asks for help over and over again? Many studies have addressed the question of how friendship affects economic transactions. On the one hand, a minimal amount of friendship between business partners is necessary, in the sense of trust in each other’s intention not to exploit each other (Gulati 1993; Macauley 1963). On the other hand, friendship considerations hamper economic interests (Lindenberg 2000; Uzzi 1997). Experiments have shown that in transactions with friends, sellers ask lower prices and buyers offer higher prices than in transaction with acquaintances or strangers (Halpern, 1997; Ligthart 1995).

Notwithstanding the empirical interest in communal and exchange relationships, both in unambiguous and in ambiguous situations, a theoretical background seems to be lacking. The distinction between communal and exchange relationships is mostly based on empirical and common sense considerations. Furthermore, little attention is given to the question what is actually happening on a cognitive level when people are confronted with a conflict between communal and exchange considerations. An exception is formed by Lindenberg’s framing theory, which states that an individual’s behavior is dependent on the relative salience of an array of goals or “frames” that can switch back and forth to the centre of one’s attention (Lindenberg 2001). Although Lindenberg distinguishes between a limited number of master frames that differ in relative a priori strength (p. 601), a theory from which the frames are derived is lacking. In the next section, we show that (1) evolutionary psychology provides a theoretical basis for the distinction between communal and exchange relationships, and (2) serves as a theory for assigning priorities to the different relational models in ambiguous situations.

2 Evolutionary psychology of exchange and communal behavior

According to evolutionary psychology humans are equipped with specific mental modules, or mechanisms. These mechanisms have evolved to cope with recurrent situations in the ancestral environment (e.g., Crawford 1998). Whenever an individual is confronted with a cue signaling such a situation, the mechanism is
triggered and the appropriate responses become salient (Tooby and Cosmides 1990b). An important role is played by emotions, coordinated systems of internal mechanisms, functioning as to link the ancestrally appropriate behavioral response to a specific adaptive problem (Cosmides and Tooby 2000; Plutchik 1980). For example, the cue “large fanged animal” activates the emotion of fear, which prepares the organism for the appropriate response: to flee.

One of these internal mechanisms is concerned with assigning priorities in case of different, and competing, cues from the environment (Cosmides and Tooby 2000; Tooby and Cosmides 1990b). For example, one might be simultaneously confronted with an attractive member of the opposite sex who is willing to mate, and with a predator. Depending on the relative importance of both cues, the prioritizing mechanism decides which behavioral response is activated.

Within evolutionary psychology, much attention has been devoted to the formulation of ancestrally evolved mechanisms that correspond highly with either of the relational models discussed above. In contrast, the question of which of these mechanisms has priority has received only little attention. In the remainder of this section, we first discuss the literature on either mechanism, starting with the mechanism corresponding to exchange behavior, and ending with the mechanism corresponding to communal behavior. Next, the matter of priority is raised, more specific, we address the question what happens when a person is confronted with a situation in which both cues for the mechanism for communal behavior and the mechanism for exchange behavior are present.

2.1 Exchange behavior or scorekeeping

The evolutionary psychological translation for exchange behavior would be reciprocal altruism, which is defined as providing benefits to another individual, at a cost to one’s own fitness, which are returned in the future (Trivers 1971). Individuals who unconditionally provide benefits to others are vulnerable to exploitation by those who reap the benefits of other’s helping behavior, without providing benefits in return. Therefore, it is argued, we are equipped with a mechanism which makes helping behavior contingent on the helping behavior of the other. The idea is that individuals keep track of the benefits received and provided, and only provide benefits to another individual if this does not result in a disadvantageous misbalance of books (Brown 1983; Dugatkin 1997; McElreath et al. 2003).

The central cue of such a scorekeeping mechanism is the balance in benefits received and benefits provided: if the relationship is imbalanced and I am
in an underbenefiting position, this triggers emotions of entitlement or even anger, leading to behavior aimed at recovering the balance between benefits provided and received. On the other hand, the reversed situation might be harmful too. To avoid that an interaction partner will consider me an exploiter, I have to avoid overbenefiting too. Thus, if I am in an overbenefiting position, this triggers emotions of obligation, humiliation and guilt, resulting in behavior aimed at recovering balance (Nesse 1991; Parker 1998; Trivers 1971). See Figure 4.1.

The most extensive elaboration of a scorekeeping mechanism is Cosmides and Tooby’s mechanism for cheater detection (Cosmides 1989; Cosmides and Tooby 1992). Focusing on the need to avoid exploitation, they propose that humans are very sensitive to situations in which a person accepts benefits without giving anything in return. Empirical support for such a mechanism for cheater detection comes from experiments demonstrating that subjects are much better at detecting violations of logical arguments involving the violation of a social contract than those involving violations of descriptive conjectures (see also Gigerenzer and Hug 1992).

In addition to the results of cheater detection experiments, there are also results from other fields supporting the idea of a mechanism for avoiding disadvantageous misbalances. First, game theoretical studies have demonstrated the success of conditionally cooperative strategies, such as Tit-for-Tat (Axelrod 1984). Moreover, exchange experiments have shown that real subjects do indeed match the benefits they provide to the benefits provided by their interaction partner (e.g., Galluci and Perugini 2000; Pruitt 1968). Support for avoidance of advantageous misbalances, or overbenefiting, is provided by studies in the field of equity theory.
Experiments and questionnaire studies have shown that people avoid asking others for help if they are not able to pay them back (e.g., Greenberg and Shapiro 1971), are more motivated to offer help to a person if this person has helped before (e.g., Greenberg and Bar-Tal 1976; Gross and Latané 1974), and experience negative emotions after overbenefiting (e.g., Castro 1974; Buunk et al. 1993). Finally, the results of experiments with ultimatum bargaining and dictator games provide evidence that people have a strong aversion to both overbenefiting and underbenefiting. Thus, subjects tend to divide rewards equally, even if they cannot be punished by the receiver, and tend to reject unfair offers, preferring to receive no reward to an unfair reward (Forsythe et al. 1994; Henrich et al. 2001; Kahneman et al. 1987).

2.2 Communal behavior or bonding

Communal behavior has received less attention than exchange behavior within evolutionary psychology. However, a number of studies stress the importance of relational cohesion (Lawler and Yoon 1996), commitment (De Vos et al. 2001), a need for deeply engaged friends (Tooby and Cosmides 1996), a need to belong (Baumeister and Leary 1995; Caporael et al. 1989), or a group heuristic (Yamagishi et al. 1999).

The basic idea of these studies is that the Pleistocene savanna exerted selection pressures for social group living. Food resources were patchily distributed, making an individual’s foraging success unpredictable (Foley 1987; Kurland and Beckerman 1985). Furthermore, single individuals were more vulnerable to predator attacks. Individuals endowed with mechanisms that supported the maintenance of group membership were better off than individuals who were not (Baumeister and Leary 1995; Caporael et al. 1989). Such a mechanism would not only produce feelings of attachment towards one’s group members, leading one to linger with the group, and thus to receive the benefits of protection and food sharing, but also feelings of commitment and care, resulting in the providing of benefits to one’s group members. In the savanna environment, ignoring a person’s need for help might have resulted in the loss of a valuable group member (De Vos et al. 2001; Tooby and Cosmides 1996). In sum, the high level of interdependence forced individuals not only to reap the benefits of group membership, but also to care for the survival and well-being of one’s group members.

We use the term bonding mechanism to denote the mechanism responsible for this behavior. The central cues for such a mechanism are both the need of the
other person and the *relationship with the other*. If confronted with a person who was part of one’s group and who was in need of help, individuals would respond with helping behavior, even if this resulted in an imbalanced relationship. This does not imply, however, that on the long term, relationships would not be balanced. In contrast, since even the best hunter had a fair chance of failing in capturing game, responding to each other’s needs would have resulted in everyone helping each other approximately equally often. The difference with the scorekeeping mechanism is that one’s helping behavior is dependent on the other’s need rather than the difference between benefits provided and benefits received.

In the ancestral environment, individuals spent most of their lives in the same group. It is plausible therefore, that *every group member* triggered the emotions of commitment and care, and the appropriate bonding behavior, when in need. In the present environment, group membership is not so clear anymore. The most appropriate translation of “one’s group” would be the circle of one’s closest affiliates, that is, one’s friends and family. If one of these persons is in need, emotions of commitment and care will be triggered, resulting in a willingness to provide help, regardless of possible imbalances. See Figure 4.2.

**Figure 4.2: Bonding mechanism**

Support for the claim that group membership is still a highly salient goal for humans comes from numerous experiments in the field of social identity theory (Tajfel 1981). Triggering the feeling of being part of a group in experimental subjects has proved to be very easy, requiring only the perception of being similar (for example preferring Kandinsky to Klee) or interdependent (for example receiving the same rewards) (see for a review Yamagishi et al. 1999). Moreover, exchange experiments have shown that after interacting repeatedly and successfully, subjects experience feelings of commitment towards their exchange partners, and consider their relationship as a valued object in itself (Kollock 1994; Lawler and Yoon 1996). In addition to support for the salience of group membership, social identity studies also provide support to the idea that group membership leads individuals to behave cooperatively towards people from their...
group. After being exposed to a group identity trigger, subjects favor ingroup members as opposed to outgroup members when allocating rewards (Tajfel et al 197) and they contribute more to a public good (Brewer and Kramer 1986).

Furthermore, numerous studies in the field of social support theory have emphasized the importance of friendship for an individual’s emotional and physical well-being (see for references Stroebe and Stroebe 1996; Uchino et al. 1996). Being part of a social support network reduces stress and increases life satisfaction, even in the absence of explicit emotional or practical assistance (Rook 1987; Cohen and Wills 1985).

Support for the importance of friendship in situations concerning the providing of benefits is manifold. The observation that friendship does not fit the traditional model of self-interested individuals was precisely the reason to introduce the distinction between communal and exchange relationships. In addition to the studies already mentioned in the Section 1, there are many other studies demonstrating that friends help each other because they care for the other rather than out of scorekeeping considerations. First, although equity theory provides support to the importance of scorekeeping considerations, the results of some studies suggest that the predictions of equity theory do not hold in all relationships. If the other person is a friend, the avoidance of both underbenefiting and overbenefiting plays much less a role than if the other person is a stranger (e.g., Morgan and Sawyer 1979). The issue of whether equity considerations vary according to relationship type is controversial, however. Social exchange theorists maintain that also close relationships are governed by exchange principles (Burgess and Huston 1979; Altman and Taylor 1973). Furthermore, a number studies suggest that friendships that are equitable are considered more satisfactory than friendships that are inequitable (e.g., Buunk and Prins 1998), and that subjects who like each other more are more averse to inequity than subjects who like each other less (Clark et al. 1974). The second source of evidence for the contention that reciprocal altruistic behavior between friends is guided by the bonding mechanism rather than the scorekeeping mechanism comes from studies showing that non-comparability, or imbalance of benefits provided and benefits received, is associated with high friendship intensity (Clark 1981; O'Connell 1984). In a similar vein, Hays (1985) found friendship intensity to be more highly correlated with the benefits-plus-costs, accruing from the relationship, than with the benefits-minus-costs, suggesting that people positively value the making of sacrifices for friends. Third, in addition to being important to one’s wellbeing, social support relationships are also characterized as being typically asymmetrical and unbalanced (Biegel and Naperstek 1982; Stewart 1989).
Finally, cultural anthropological studies on food sharing in hunter-gatherers stress motivations related to the bonding mechanism, that is: generosity, to help if there is a need, and the absence of an obligation to repay (Bird-David 1990; Harris 1980, p. 226-228; Wiessner, 1996). Although evolutionary anthropologists have attempted to demonstrate that food sharing is guided by scorekeeping mechanisms (see for references Gurven, in press), the evidence is mostly restricted to correlations between giving and receiving. As a consequence, their results can be just as well explained by a bonding mechanism (Smaniotto, submitted).

2.3 Priorities and preparedness

Having argued that humans have two behavioral mechanisms that are triggered by different cues and produce different emotional and behavioral responses, the question arises what will happen if a situation contains cues for both mechanisms, triggering opposite behavioral responses. For example, what mechanism will be activated if I am asked for help by a close friend who is in distress, who is however in my debt? If I had only a scorekeeping mechanism I would refuse to help until he would have repaid his debts (see Section 2.1). In contrast, if I had only a bonding mechanism, I would provide help regardless of differences in benefits provided and benefits received (see Section 2.2). In the presence of two competing cues, triggering opposite behavioral responses, what response will be actually given depends on which of the two cues has priority.

Most evolutionary psychological studies related to scorekeeping or bonding, address one of either mechanisms in isolation. For example, in the social contract argument which is used in the cheater detection experiments, subjects are presented only with cues signaling an imbalance in benefits provided and benefits received, without reference to the relationship with the other person (Cosmides 1989; Cosmides and Tooby 1992; Gigerenzer and Hug 1996). Exceptions are formed by a number of theoretical treatments in which distinctions similar to those between communal and exchange relationships are provided with an evolutionary psychological background (see for example, Bugenthal 2000). The question what will happen when the relationship has both characteristics of an exchange relationship and a communal relationship is not addressed, however.

According to Tooby and Cosmides (1990b; Cosmides and Tooby 2000), emotion mechanisms consist not only of algorithms linking single cues to the appropriate cognitive, emotional and behavioral responses, but also of algorithms prescribing which cue has priority in case of two competing cues. The question of
how such priority assigning algorithms should be envisioned has received little
attention, however. One possibility is to think of them in terms of biological
preparedness (Cummins 2001). Originally introduced to eliminate the dichotomy of
innateness versus learning as portrayed in the nature-nurture debate, this term links
the criticalness of an adaptive problem in the ancestral environment with the ability
of the newborn mind to very quickly develop and learn specialized cognitive,
emotional and behavioral functions (Cummins and Cummins 1999). Put more
simply: responses that were highly important to our ancestors’ survival are easier to
learn than responses that were less important. Examples of such easily acquired
responses are fear responses towards certain classes of animals (spiders and snakes)
(Öhmann and Dimberg 1978; Seligman 1971), as well as taste aversions to foods
that make one ill (Garcia, Brett and Rusiniak 1989). It seems plausible that this
preparedness of responses that were critical for our ancestors’ survival is not only
expressed by the ease which they are learnt, but also by the ease with which the
responsible mechanisms are activated – or, in other words, by the priority assigned
to the cue.

Which of the two mechanisms described above has priority? We address
this issue using a similar argument as was presented by Tooby and Cosmides
(1996) in their article on the Banker’s Paradox, that is, the problem that persons
who are in most dire need are also the worst credit risks, and consequently, are
least attractive as recipients of assistance. In this article, they make a similar
distinction as the one between exchange and communal relationships, namely
between the exchange domain and the friendship domain, arguing that “the altruistic
adaptations that underlie friendships do not map onto the structure of tit for tat or any other
standard models of reciprocal altruism based on alternating sequences of contingent behaviors.” (p.
131). Friendship relations are characterized by a spontaneous pleasure to help the
other, without looking for a contingent return. Exchange relations, on the other
hand, are characterized by explicit contingent exchange and turn-taking reciprocation (p. 139; see also Silk 2003). The solution to the banker’s paradox is to
cultivate relationships with those people who are committed to you, that is, to
cultivate friendships. By becoming irreplaceable for a number of others, you will be
assured of help when you are in distress: the consideration that you might not
repay your debt is overruled by the consideration that you are too valuable to lose.

The argument applies exceptionally well to the ancestral environment, in
which the survival of one’s group members was a precondition for one’s own
survival. In those conditions, the possible consequences of ignoring a group
member in need were much more serious than the threat of being cheated.
Therefore it can be expected that in the presence of the competing cues, friend in
distress and an imbalance in benefits provided and benefits received, the first cue has a higher priority and the bonding mechanism is more easily triggered than the scorekeeping mechanism. This results in helping the needy friend rather than trying to maintain a balanced relationship.

2.4 Hypotheses

In order to test the hypothesis that in case of conflicting cues, the bonding cues have a higher priority than the scorekeeping cues, we have to consider situations in which both competing cues are present. The scorekeeping cues boil down to some imbalance in benefits received and benefits provided, and the bonding cues boil down to a need for help on the part of a friend. Therefore, we expect individuals confronted with a dilemma between helping someone in need and restoring balance between benefits received and benefits provided, will be more likely to provide help if the other is a friend than if the other is an acquaintance (H1).

Furthermore, we can also expect an effect of the context of the helping situation. We will consider two objects of help, one the typical commodity of modern market society: money; the other a timeless commodity: the providing of help in the case of illness. We expect individuals confronted with the dilemma between helping someone in need and restoring the balance between benefits received, to be more likely to choose the option of helping if the other person is ill than if the other person is out of money. Thus, the degree of bonding responses is expected to be higher in the illness context than in the money context. One reason is that the illness context is more resembling to ancestral helping situations, and therefore will activate the ancestrally relevant behavioral mechanisms to a higher degree (Kanazawa 2003). In addition, since being ill, in contrast to being without money, is potentially life-threatening, it is generally considered to constitute a greater need than being in need of money. Since bonding behavior is limited to the people in one’s closest circle, the increase in helping behavior in the illness context should be stronger for friends than for acquaintances (H2).

The third hypothesis is directed at testing the difference in priority between the bonding and the scorekeeping most explicitly. Since losing an interaction partner was more detrimental to a person’s survival than being cheated in the ancestral environment, the bonding mechanism should have priority over the scorekeeping mechanism. As was argued before, a plausible way to study differences in priority between two behavioral mechanisms is by focusing on the difference in the ease with which they are triggered. Thus, it can be expected that a very subtle, or implicit prime for either scorekeeping or bonding behavior, has a
stronger impact on the bonding mechanism than the scorekeeping mechanism. Thus, the increase in bonding responses after exposure to an implicit bonding prime should be larger than the increase in scorekeeping responses after exposure to an implicit scorekeeping prime (H3).

3 Methods

3.1 Scenarios

The hypotheses were tested using a scenario design. The scenarios described dilemma situations with one or two others. Each situation contained cues for both the scorekeeping mechanism and the bonding mechanism. Using semantic differential scales, subjects were asked how they would feel and how they would behave in such a situation. Behavioral response was measured on a four-point scale, designed in such a way that the answering categories indicated a definite scorekeeping response, a probable scorekeeping response, a probable bonding response, and a definite bonding response. Three scenarios were used (see Figure 4.3), two of them posing a dilemma between helping someone who is in need and avoiding underbenefiting (Debtor in need and Refuser in need dilemma) and one posing a dilemma between helping someone who is in need and avoiding overbenefiting (Reciprocate vs help dilemma). The complete scenarios are presented in Appendix 1.

The scenarios concerning the dilemma between avoiding underbenefiting and helping a needy one, both involve one actor who is in need and who requests for help. In the Debtor in need dilemma, the requester is someone who already received help from the subject recently. Helping him again would imply an increase in the imbalance of benefits received and benefits provided, and put the subject at risk of being cheated. By refusing to help, one would stop him from getting indebted any further. Thus, granting the request is the typical bonding response, whereas refusing to help is the typical scorekeeping response. The Refuser in need dilemma was included as a more literal translation of the tit for tat strategy. It is similar to the Debtor in need dilemma, except that the requester is someone who has recently refused to grant a request for help on the subject’s part. Again, helping this person would put a subject at risk of being cheated. By refusing to help they would retaliate his previous behavior. To emphasize the seriousness of the actors’ need for help, in both the Debtor in need and the Refuser in need dilemma, subjects were informed that the actors did not know many people whom they could appeal to. Behavioral response was measured on a four-point scale, with answering categories
definitely not helping, probably not helping, probably helping, and definitely helping.

In contrast to the dilemma between avoiding underbenefiting and helping a needy one, it is impossible to devise a dilemma between avoiding overbenefiting and helping a needy one if only one actor is involved. If a person from whom I am overbenefiting is in need, both the bonding and the scorekeeping mechanism would respond with providing help. Therefore, a scenario involving two actors was devised, where the dilemma consists of which actor to provide benefits to. In this scenario, both actors request for help at the same time. The first actor (A.) is only mildly in need, whereas the second actor (S.) is highly in need. However, A. recently granted a similar request for help by the subject. Thus, if the subject chooses to repay A., he attaches higher priority to avoiding overbenefiting. A choice for helping S. indicates a preference for helping those who are in need. Again, a four-point scale was used, with answering categories definitely repaying A., probably repaying A., probably helping S., and definitely helping S. Subjects were informed that they did not have enough resources to provide benefits to both actors, that they had known both actors for about an equally long period, that A. and S. earned about the same income, and that they did not know many persons whom they could appeal to.

**Figure 4.3: Overview of the three dilemma situations**

<table>
<thead>
<tr>
<th>Name of dilemma</th>
<th>Scorekeeping cue (see Fig 4.1)</th>
<th>Bonding cue (see Fig 4.2)</th>
<th>Scorekeeping response (see Fig 4.1)</th>
<th>Bonding response (see Fig 4.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reciprocate vs help dilemma</td>
<td>I am indebted to Alter 1.</td>
<td>Alter 1 is mildly in need</td>
<td>Reciprocate Alter 1</td>
<td>Help Alter 2</td>
</tr>
<tr>
<td>Debtor in need dilemma</td>
<td>Alter is in my debt</td>
<td>Alter is in need</td>
<td>Not help Alter</td>
<td>Help Alter</td>
</tr>
<tr>
<td>Refuser in need dilemma</td>
<td>Alter has refused to help me.</td>
<td>Alter is in need</td>
<td>Not help Alter</td>
<td>Help Alter</td>
</tr>
</tbody>
</table>

*Based on our hypotheses the bonding mechanism should be more highly activated if Alter is a friend. In order to test this hypothesis, the experimental design should allow both friends and acquaintances to get in need.
3.2 Experimental conditions

To determine the effects of Relationship with Alter, Context and Prime, a 2 by 2 by 3 factorial design was used. Relationship with Alter was varied by giving half of the subjects dilemma situations in which Alter was designated as “friend”, and half of the subjects dilemma situations in which Alter was designated as “acquaintance”.

Context was varied between a money context and an illness context: half of the subjects received dilemma situations in which the object of help was providing assistance in the case of illness, and half of the subjects received dilemma situations in which the object of help was lending money. In the money context, the request for help involved a request to borrow 100 euros, either because the actor’s purse had been stolen (in the Help debtor and Help refuser dilemma and in case of the needy one (S.) in the Reciprocate vs help dilemma) or because the actor wanted to buy new clothes (in case of the creditor (A.) in the Reciprocate vs help dilemma). In the illness context, the request involved coming over to the ill person’s house the next day in order to nurse him. In the Reciprocate vs help dilemma, the mild need was operationalized by A. having caught a touch of flu, whereas S.’ illness was described as more serious, preventing him from leaving the house.

Finally, Prime was varied between a bonding prime, a scorekeeping prime and a neutral prime. This was done by giving one third of the subjects a task in which they had to read a story about a typical bonding situation, one third a story about a typical scorekeeping situation, and one third a “neutral” story. Since this condition was only present in Study 2, we will discuss it in more detail when discussing that study.

4 Study 1

4.1 Method

Participants

To test the hypotheses concerning Relationship with Alter and Context, a large group of first-year business students and a smaller group of first-year sociology students were asked to fill out a 5-minutes-questionnaire. On both occasions, questionnaires were handed out during a lecture. From the business students 355 questionnaires were returned, and from the sociologists 38. After discarding questionnaires that were not completed or that did not appear to be completed in a serious manner, a number of 346 remained, 313 of which belonged to business
students and 33 of which belonged to sociology students. Of this number, 63% concerned men and 37% concerned women. The average age was 19 years (sd=2).

**Design**

The questionnaire consisted of three descriptions of situations about reciprocal altruistic behavior between the subject and one or two others. The primary goal of this questionnaire was establishing a correlation between emotional response and behavior, so only one of the scenarios, the *Reciprocate vs help dilemma*, was used for this study. Both *Relationship with Alter* and *Context* were varied between subjects.

### 4.2 Results

From the 346 valid cases 21.1% responded that he/she would definitely pay back A; 26.0% would probably pay back A; 31.8% would probably help S and 21.1% would definitely help S. The overall mean on the variable - which ranged from 1 to 4, with 1 signifying a definite scorekeeping response, and 4 signifying a definite bonding response - was 2.53 (sd=1.05).

In order to test the hypotheses while controlling for all variables, an ANOVA was conducted with behavioral response as dependent variable and Context and Relationship with Alter as independent variables. In addition, Sex and Study were included as control variables. There was only a significant effect of Context \( F(1,330)=5.69; p<0.05 \): subjects in the illness condition scored significantly higher on bonding than subjects in the money condition (2.84 and 2.21, respectively). There were no significant main effects of Relationship with Alter \( F(1,330)=1.26 \); Study \( F(1,330)=2.82 \), or Sex \( F(1,330)=0.44 \), nor any interaction effects (see Table 4.1).

In conclusion, the results suggest that one’s decision to help a needy person, rather than repay a creditor is significantly influenced by the object of help. If the object of help is providing assistance in the case of illness, subjects are more likely to provide help than if the object of help is money. Relationship with Alter has no significant effect, neither as a main effect, nor as an interaction effect with Context. The results might be the consequence of the Reciprocate vs help dilemma being an atypical dilemma situation, since it involves the dilemma between helping and avoiding to be in another person’s debt. Since Study 2 includes both the same dilemma situation as in Study 1, as well as two other dilemma situations, it can be checked whether these results are replicated, and whether scenarios involving the dilemma between helping and avoiding underbenefiting yield different results.
Table 4.1: Mean behavioral response, sd, and N according to experimental condition (Study 1)

<table>
<thead>
<tr>
<th>Context</th>
<th>Relationship with Alter</th>
<th>M</th>
<th>sd</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illness</td>
<td>Friend</td>
<td>2.82</td>
<td>0.98</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>Acquaintance</td>
<td>2.85</td>
<td>1.02</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.84</td>
<td>1.00</td>
<td>176</td>
</tr>
<tr>
<td>Money</td>
<td>Friend</td>
<td>2.16</td>
<td>0.96</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td>Acquaintance</td>
<td>2.27</td>
<td>1.06</td>
<td>82</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.21</td>
<td>1.00</td>
<td>170</td>
</tr>
<tr>
<td>Total</td>
<td>Friend</td>
<td>2.49</td>
<td>1.02</td>
<td>175</td>
</tr>
<tr>
<td></td>
<td>Acquaintance</td>
<td>2.57</td>
<td>1.07</td>
<td>171</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>2.53</td>
<td>1.05</td>
<td>346</td>
</tr>
</tbody>
</table>

Note: Behavioral response was measured on a 4-point scale, with 1=definitely scorekeeping and 4=definitely bonding.

5 Study 2

5.1 Method

Participants

Respondents in Study 2 consisted of 402 first-year psychology students, who had to spend three half days filling out questionnaires as part of their curriculum. The relevant questionnaire was scheduled halfway through the first day. Completing it took about 15 minutes. After discarding the questionnaires that were incomplete, 353 remained. Of this number 25.5% concerned men and 74.5% concerned women. The average age was 20 years (sd=4).

Design

As in Study 1, Context and Relationship with Alter were manipulated. In addition to these manipulations, subjects were administered an implicit prime for either bonding behavior or scorekeeping behavior. A third group received a neutral prime. The prime was administered through a bogus language test. Subjects had to correct the spelling in a short text, which was introduced as written by a student. The texts concerned an experience of doing an assignment for a university course. In all three conditions the student only marginally passed because of a problem
with his co-worker (in the bonding prime and scorekeeping prime conditions) or with his computer (in the neutral prime condition). In the bonding prime condition, the writer had to work with another student who appeared to have a serious illness, and the writer decided to help the student at the expense of his own mark, because "that is what friends are supposed to do". In the scorekeeping prime condition, the writer had to work with another student who appeared to be a freerider, and the writer decided to dash off his part of the assignment too, because "being taken advantage of is one of the most frustrating things in life". In the neutral prime condition, the student had to work on an individual assignment and got into problems when his computer crashed.

After finishing the test, subjects continued with the second part of the questionnaire, which consisted of the three dilemma situations discussed above. In order to avoid order effects, the order of the three dilemmas was randomly varied between questionnaires.

5.2 Results

In Study 2, three dilemma situations were used to measure subjects’ behavioral responses when confronted with a situation containing both scorekeeping and bonding cues. To analyse the data, an ANOVA with Repeated Measures was performed. The responses on the three dilemma situations were treated as a within-subjects variable with 3 levels (called “Dilemma”). To determine whether it is justified to consider the three dilemmas as repeated measures of the same variable, we start with presenting some descriptives and correlations.

5.2.1 Description of data

Table 4.2 shows the distribution of responses on the three dilemmas. The Debtor in need dilemma evokes the largest degree of bonding responses. Of all respondents, 74.5% choose a probable or definite bonding response. Although not so overwhelming, the Reciprocate vs help and the Refuser in need dilemma also evoke a majority of bonding responses (percentage of bonding responses is 61.5% and 57.5% respectively).
Table 4.2: Distribution of responses on the three dilemmas

<table>
<thead>
<tr>
<th></th>
<th>Reciprocate vs help</th>
<th>Debtor in need</th>
<th>Refuser in need</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definitely scorekeeping</td>
<td>14.4 %</td>
<td>4.5 %</td>
<td>10.2 %</td>
</tr>
<tr>
<td>Probably scorekeeping</td>
<td>24.1 %</td>
<td>21.0 %</td>
<td>32.3 %</td>
</tr>
<tr>
<td>Probably bonding</td>
<td>46.2 %</td>
<td>45.6 %</td>
<td>49.3 %</td>
</tr>
<tr>
<td>Definitely bonding</td>
<td>15.3 %</td>
<td>28.9 %</td>
<td>8.2 %</td>
</tr>
<tr>
<td>Mean</td>
<td>2.62</td>
<td>2.99</td>
<td>2.56</td>
</tr>
<tr>
<td>Sd</td>
<td>.91</td>
<td>.83</td>
<td>.79</td>
</tr>
<tr>
<td>N</td>
<td>353</td>
<td>353</td>
<td>353</td>
</tr>
</tbody>
</table>

Note: Only subjects who responded to all scenarios are included.

If the three dilemmas measure the same variable, as was assumed, a minimal requirement would be that they are positively correlated. Correlations are 0.42 for the Reciprocate vs help and Debtor in need dilemma, 0.16 for the Reciprocate vs help and Refuser in need dilemma and 0.33 for the Debtor in need and Refuser in need dilemma (all correlations are significant at p<0.01; 1-tailed tests). Although not all correlations are equally strong, it seems justified to consider the three dilemmas as measuring the same underlying variable.

5.2.2 Repeated Measures ANOVA
To test the hypotheses, an ANOVA with Repeated Measures was performed. Behavioral responses to the three dilemma situations was treated as a within-subjects factor with three levels. Context, Relationship with Alter, Prime and Sex were included as independent variables. Sex did not have a main effect [F(1,321)=.263], nor any interaction effects, so it was excluded. (See Appendix 2 for the mean behavioral responses in all conditions)

Between-subjects analyses showed significant main effects of all independent variables, Context [F(1,341)=220.7; p<0.01]; Relationship with Alter [F(1,341)=6.3; p<0.05] and Prime [F(2,341)=4.2; p<0.05]. In addition, there was a 3-way interaction effect of Prime, Context and Relationship with Alter [F(2,341)=4.8; p<0.01].
Moreover, a number of within-subjects effects (Multivariate tests) were found, indicating differences in behavioral responses between the three dilemmas. These effects concerned a main effect of Dilemma \[ F(2,340)=51.8; \ p<0.01 \], a 2-way interaction effect of Dilemma and Context \[ F(2,340)=17.8; \ p<0.01 \] and a 3-way interaction effect of Dilemma, Context and Relationship with Alter \[ F(2,340)=3.1; \ p<0.05 \]. To interpret the within-subjects effects, three additional Univariate ANOVA’s were conducted, with subsequently, responses on the Reciprocate vs help dilemma, Debtor in need dilemma and Refuser in need dilemma as dependent variables.

In the following, the effects of Relationship with Alter, Context and Prime are discussed. Next, the remaining significant effects of the Repeated Measures ANOVA are considered. Where necessary, the results of the Univariate ANOVA’s are reported.

**Effect of Relationship with Alter**

The difference between responses towards friends and responses towards acquaintances is small but significant. The estimated mean response on the compound variable Dilemma is 2.78 towards friends and 2.65 towards acquaintances. Thus, towards friends subjects are slightly more likely to behave according to the bonding mechanism than towards acquaintances. The results of three additional Univariate ANOVA’s show that the Refuser in need dilemma holds the strongest effect of Relationship with Alter \[ F(1,367)=10.0; \ p<0.01 \] (see Figure 4.4). In the Reciprocate vs help and Debtor in need dilemma the effect of Relationship with Alter is in the expected direction, but in neither of them does it reach significance \[ F(1,361)=0.01 \] and \[ F(1,369)=1.86 \], respectively.

The weak effect of Relationship with Alter might have been the result of the used operationalization. The bonding mechanism was theorized to be triggered by a person who is part of my closest circle, being in need of help. Using “friend” as a person who is part of my closest circle seems to be an obvious operationalization. To use “acquaintance” as a person who is NOT part of my closest circle is less obvious. The intuitive alternative “stranger” is problematic since strangers are, by definition, not in one's debt. As a consequence this operationalization, the degree of bonding responses in the acquaintance condition might have been overestimated. Likely, some people consider their acquaintances to be part of their closest circle too. Thus, in an unpublished study in which Context and Relationship with Alter were manipulated, a number of subjects in the acquaintance condition complained that “acquaintance” was too vague a concept. Moreover, several subjects explicitly
mentioned that they had interpreted “acquaintance” as “friend”. Therefore, a
different operationalization of the theoretical concept a person who is not part of my
closest circle might have resulted in a lower amount of bonding responses in the
acquaintance condition and a more pronounced effect of Relationship with Alter.

Figure 4.4: Effect of Relationship with Alter in the
different dilemmas

Key: □ Friend □ Acquaintance

Effect of Context

The context of the situation has by far the largest effect on subjects’ responses. In
the money context, the estimated mean response on the compound variable
Dilemma is 2.34; in the illness context it is 3.09. Univariate analyses show that the
effect of Context is significant in all three dilemmas (Reciprocate vs help dilemma:
F(1,361)= 106.4; p<0.01, Debtor in need dilemma: F(1,369)=194.6; p<0.01, Refuser in
need dilemma: F(1,367)= 25.7; p<0.01) (see Figure 4.5).

In contrast to our expectations the effect of Context is not larger in the
friend condition than in the acquaintance condition: there is no significant 2-way
interaction effect of Relationship with Alter and Context [F(1,341)=.04]. Thus,
subjects are more likely to help someone in need rather than keep the books
balanced if the object of help concerns assistance in the case of illness than if it
Concerns money, and the increase in bonding responses is present towards both friends and acquaintances.

Although there is no 2-way interaction effect of Context and Relationship, there is a significant 3-way interaction effect of Dilemma, Context and Relationship with Alter. Figures 4.6a and 4.6b show that this interaction effect is mainly due to the Debtor in need dilemma, where there is a difference between friends and acquaintances with regard to the degree of bonding responses in the money context (Figure 4.6a), but not in the illness context (Figure 4.6b). The presence of an interaction effect of Context and Relationship with Alter in the Debtor in need dilemma is confirmed by the Univariate ANOVA [F(1,369)=4.58; p<0.05]. In the other two dilemmas it is non-significant (Reciprocate vs help dilemma: F(1,361)=.43; Refuser in need dilemma: F(1,367) =.44)

![Figure 4.5: Effect of Context in the different dilemmas](image)

Key: Money Illness
CHAPTER 4

Figure 4.6a: Effect of Relationship with Alter in the different dilemmas: Money context

Key:  ■ Friend  ■ Acquaintance

Figure 4.6b: Effect of Relationship with Alter in the different dilemmas: Illness context

Key:  ■ Friend  ■ Acquaintance
Apparently, subjects do not distinguish between friends and acquaintances who are in their debt if the object of help is assistance in the case of illness. In contrast, if the object of help is money, subjects are more likely to help the debtor if he is a friend than if he is an acquaintance. A possible explanation is that the illness context poses such a strong need cue that subjects are reluctant to ignore a person’s request for help, even if he is just an acquaintance. The only case in which the illness context elicits a higher degree of help towards friends than towards acquaintances is in the dilemma with the lowest overall degree of bonding responses, the *Refuser in need dilemma* (see Figure 4.6b). This suggests that people are more lenient towards friends than towards acquaintances, and the more so if the other has refused to help at a previous encounter. This result contradicts the idea that being cheated by a friend evokes stronger negative reactions than being cheated by someone you do not know so well (McElraeth et al. 2003, p. 148). In the *Reciprocate vs help dilemma*, finally, the only effect comes from Context. This in accordance with the absence of any effect of Relationship with Alter in the *Reciprocate vs help dilemma* as appeared from *Study 1*.

**Effect of prime**

The implicit prime has a small but significant main effect. However, the direction is unexpected: pairwise comparisons show that the estimated mean responses on the compound variable do not differ significantly if comparing the bonding prime and the scorekeeping prime (M=2.67; SE=0.04 and M=2.66; SE=0.05, respectively). Comparing the mean response in the neutral prime condition (M=2.82; SE=0.04) with the two other conditions shows that both differences are significant (both comparisons p<0.05). Thus, whereas subjects in the bonding and scorekeeping prime conditions do not differ in their response, subjects in the neutral condition respond more in a bonding way. This result is hard to interpret, since it contradicts both the hypothesis formulated in this study (the bonding prime has a stronger effect than the scorekeeping prime), and the alternative hypothesis (the scorekeeping prime has a stronger effect than the bonding prime), and the nullhypothesis (no difference between prime conditions). Therefore, it seems that the prime manipulation has failed.

However, in addition to the main effect of Prime there is also a 3-way interaction effect of Prime, Context and Relationship with Alter, which is depicted in Figures 4.7a and 4.7b.
Figure 4.7a: Effect of Relationship with Alter according to Prime condition: Money context

Key: □ friend □ acquaintance

Figure 4.7b: Effect of Relationship with Alter according to Prime condition: Illness context

Key: □ friend □ acquaintance
The effect of Prime seems to be restricted to two conditions. First, in the money context, behavior towards friends is more bonding-oriented after receiving the neutral prime, than after receiving the bonding or the scorekeeping prime (pairwise comparisons of those specific conditions show that the neutral-bonding prime difference and the neutral-scorekeeping prime are significant at p<0.05 and p<0.01, respectively). Behavior towards acquaintances in the money context does not differ according to prime condition (Figure 4.7a). Second, in the illness context, subjects who have received the scorekeeping prime, respond with a lower degree of bonding responses than subjects presented with the neutral prime (p<0.01) (the difference with the bonding prime is non-significant), but only towards acquaintances (Figure 4.7b).

This last result suggests that – contrary to the expectations – the scorekeeping mechanism is triggered more easily than the bonding mechanism, but only if Alter is an acquaintance and in the illness context. The observation that the effect only occurs towards acquaintances, and not towards friends, suggests that scorekeeping is mainly directed at acquaintances. Although this result does not agree with our depiction of the two mechanisms and their relevant cues - Relationship with Alter was explicitly expected to be only a cue for the bonding mechanism - it does provide support to the key importance of one’s relationship with the other person.

To find out whether any of these results are due to a fading effect of Prime after the first dilemma situation, we considered only the dilemma situation which came first in the questionnaire. Next, separate Univariate ANOVA’s on behavioral responses to the Reciprocate vs help, Debtor in need, and Refuser in need dilemma were conducted. The results did not yield any support to such a "fading away" effect.

Other effects
The within-subjects analyses show a considerable effect of Dilemma, suggesting that the different dilemma situations give rise to different degree of bonding and scorekeeping responses. The same conclusion could already been drawn from the descriptive analyses (Section 5.2.1, Table 2), which showed that the Debtor in need dilemma evokes a higher degree of bonding response than the other two dilemmas.

As shown by the within-subjects analyses, there is an interaction effect of Dilemma and Context (see Figure 4.5). Two observations can be made that probably account for the interaction effect. First, the size of the effect of Context is considerably smaller in the Refuser in need dilemma, and second, the differences
between the three dilemmas are much larger in the illness context than in the money context. A possible explanation for these observations is that, confronted with an ill person, considerations concerning the balance in benefits provided and benefits received play a minor role. The person in need cannot be blamed for being ill two times in a row, which explains the extremely large degree of bonding responses in the Debtor in need dilemma. The presence of a less ill requester, towards whom I am in an overbenefiting position, decreases the amount of bonding responses to a lower, but still relatively high level (see Reciprocate vs help dilemma). However, the most legitimate reason for not helping an ill person - as appears from the relatively low degree of bonding responses in the Refuser in need dilemma - is a blunt refusal to help me when I was ill. In contrast, in the money context, considerations concerning the balance in benefits provided and benefits received are much more important. Both the presence of a second requester to whom I am indebted, and the person being in my debt, strongly reduce the degree of bonding responses to about the same level as in the Refuser in need dilemma.

6 Discussion

The two reported studies examined responses in situations constituting a dilemma between helping a person in need and maintaining a balance in benefits provided and benefits received. Helping a person in need was considered as the behavioral response resulting from the bonding mechanism, which is triggered by the cue friend in need of help. Conversely, a refusal to help a person who is in one’s debt or who has refused to help in the past (in the Debtor in need and Refuser in need dilemma), as well as the choice to repay one’s debts rather than help a person highly in need (in the Reciprocate vs help dilemma) was supposed to be the result of the scorekeeping mechanism, which is triggered by an imbalance in the relationship. Since the bonding mechanism was assumed to be only triggered by persons in one’s closest circle, the degree of bonding responses was expected to be higher among subjects who received dilemma situations involving friends than among subjects who received dilemma situations involving acquaintances. In addition, assuming that illness poses both a more timeless and a more urgent need for help as compared to a want of money, it was predicted that subjects presented with illness scenarios were more likely to give a bonding response than subjects presented with money scenarios. One of the two studies also included an implicit prime for either scorekeeping or bonding behavior. It was hypothesized that if the bonding mechanism has a higher priority than the scorekeeping mechanism, subjects
receiving the bonding prime should show a stronger increase in bonding responses, compared to the increase in scorekeeping responses by the subjects receiving a scorekeeping prime.

In the remainder of this section, we evaluate the results and raise some issues that deserve future research.

*Context of the dilemma situation and relationship with Alter*

The results provide support to the idea that different conditions trigger different mechanisms of reciprocal altruism. The illness context evoked a higher degree of bonding responses than the money context in all dilemma situations, although the difference was less strong in the *Refuser in need dilemma*. Whether the effect of Context is due to a perceived difference in need between the money and illness context, or to the fact that the illness context triggers the more ancient of the two mechanisms, cannot be determined. In addition, there was some support that friends evoke more bonding behavior than acquaintances. *Study 1* showed no difference between responses towards friends versus acquaintance, but *Study 2* did, although the difference was most prominent in the *Refuser in need dilemma*. In sum, based on the differential effects of relationship with Alter and the context of the situation, it seems that the bonding mechanism is primarily activated by the object of help being timeless and potentially life-threatening, and much less by the other being a friend.

As was already mentioned, however, the weak effect of Relationship with Alter might be the result of subjects considering acquaintances as part of their closest circle too. Another reason might be the difference in salience of the Relationship with Alter and the Context manipulation. Relationship with Alter was manipulated by using the term *friend* versus *acquaintance* at a restricted number of locations in the questionnaire – once in the instruction, and once in each dilemma situation. In contrast, Context was manipulated by varying the description of the dilemma situation, which boiled down to a considerable difference in the precise stories. A possible way to increase the salience of the relationship with one’s interaction partner would be to use more explicit terms to describe the relationship. The relationship manipulation would liven up even more if subjects are instructed to take in mind a particular person, either someone whom they consider a good friend, or someone whom they don’t know so well.
Implicit prime

The effect of the implicit prime is hard to interpret. There was no increase in bonding responses after the bonding prime, and consequently, there was no evidence that the increase in bonding responses after exposure to the bonding prime was larger than the decrease in bonding responses after exposure to the scorekeeping prime. In only one condition was there a decrease in bonding responses after exposure to the scorekeeping prime, namely in the illness context and towards acquaintances. Although one might interpret this result as support for the alternative hypothesis, that is, the scorekeeping mechanism being more easily triggered than the bonding mechanism, the evidence is very thin. Thus, it seems safer to conclude that the prime manipulation did not work. It is plausible that the effect of the prime manipulation has been canceled out by the explicit manipulations. In general, studies using implicit primes do not also include explicit manipulations (see for references Fazio 2001).

In sum, although implicit primes might be a fruitful way of testing hypotheses about differences in priority, the formulation and selection of adequate prime manipulations requires extensive preliminary studies.

Differences between dilemma situations

The results of this study were based on three dilemma situations, two concerning a dilemma between helping a needy one and avoiding underbenefiting (Debtor in need and Refuser in need dilemma) and one concerning a dilemma between helping a needy one and avoiding overbenefiting (Reciprocate vs help dilemma). Since all of them were presented as dilemmas between helping a needy one and avoiding an imbalanced relationship, we did not formulate hypotheses about differences between dilemmas. However, the results showed that there were several of differences, especially between the two scenarios posing a dilemma between helping a needy one and avoiding underbenefiting (i.e., the Debtor in need and Refuser in need dilemmas). In both dilemmas, the degree of bonding responses was higher in the illness context, as compared to the money context, and it was also higher towards friends, as compared to acquaintances. However, there were a number of results suggesting that we may need to qualify what exactly constitutes avoiding underbenefiting.

First, the Debtor in need dilemma evoked the highest amount of bonding responses, whereas the Refuser in need dilemma evoked the lowest amount of bonding responses. Second, in the illness context, a request for help was granted by the far majority of subjects in the Debtor in need dilemma, whereas it was much smaller in the
Refuser in need dilemma. And third, the effect of Relationship with Alter was most prominent in the Refuser in need dilemma. All these results suggest that people are less tolerant towards refusers than towards debtors, the more so if it concerns an illness context. Results from a study including not only behavioral responses but also personality and emotion measures, support this interpretation (Smaniotto and Stokman, submitted). Compared to subjects who were less prosocial, subjects who were more prosocial were more likely to provide help to a refuser, but not more likely to help a debtor. Furthermore, a Debtor in need triggered higher degrees of emotions like commitment, warmth and obligation, and less negative emotions like anger than did a Refuser in need. We tend to interpret these results in terms of the importance of responding to each other’s needs. Although people do not mind underbenefiting in the sense of another person being indebted to them, they do mind underbenefiting in the sense of another person not responding to their needs. When that happens, they are less likely to grant a request for help, experience more negative emotions, need to be relatively prosocial to grant the request, and need to have a relatively close relationship with the other person to grant the request.

Conclusion

Although the question of differences in priority between the bonding and the scorekeeping mechanism remains unanswered, the two studies reported here provide strong support that different conditions trigger different mechanisms of reciprocal altruism. The results are consistent with social psychological studies showing that persons behave differently, depending on whether they have or desire a communal versus an exchange relationship with the other person (Clark 1984; Clark and Mills 1979). In contrast, the results oppose the idea that reciprocal altruistic behavior is solely guided by the avoidance of being cheated, or scorekeeping.