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Relational Utility as a Moderator of Guilt in Social Interactions

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The capacity to experience guilt is assumed to benefit individuals, as the rewards of repeated, cooperative interactions are likely to exceed the rewards of acting selfishly. If that assumption is true, the extent to which people experience guilt over interpersonal transgressions should at least partly depend on the utility of another person for the attainment of personal goal(s) through social interaction (relational utility). Three experiments confirmed the relational utility hypothesis by showing that people felt guiltier (a) over excluding someone from a fun game if this person could subsequently distribute more money in a dictator game, (b) over hypothetical social transgressions toward a person who was instrumental to the attainment of a salient goal than toward a person who was not instrumental to the attainment of that goal and toward the same person when no goal was salient, and (c) over a low contribution in a social dilemma game if they were more dependent on their group members for performing well in a subsequent debating contest. Closeness with the other person, differences in severity of the transgression, and strategic motives for expressing guilt were consistently excluded as alternative accounts of the effects. By showing that relational utility may affect guilt, these findings (a) provide support for the individual level function of guilt; (b) extend research on the antecedents of guilt in social interactions, which mainly focused on retrospective appraisals; and (c) bear implications for the status of guilt as a moral emotion.

Keywords: guilt, function, interpersonal transgressions, relations, reciprocity

The capacity to experience guilt is essential for people to adopt and adhere to a shared set of behavioral standards that enables large-scale cooperation in social groups (e.g., Ausubel, 1955; Freedman, Wallington, & Bless, 1967; A. Smith, 1759; Tangney, Stuewig, & Mashek, 2007; Wong & Tsai, 2007). Guilt typically arises if people anticipate or commit behavior that harms others, and inhibits them to exclusively act in their own interest but instead makes them pay attention to the needs and concerns of others (Baumeister, Stillwell, & Heatherton, 1994; Haidt, 2003; Lewis, 1971; Tangney, 1991). It is assumed that eventually, this also betters the individual who can gain more from developing and fostering mutually rewarding, reciprocal relations than from taking advantage of others (Darwin, 1874; DeSteno, 2009; Frank, 1988; Haidt, 2003; A. Smith, 1759; Trivers, 1971).

The present article seeks to deepen our understanding and appreciation of the individual-level function of guilt. I do so by exploring the possibility that the extent to which people experience guilt over interpersonal transgressions should at least partly depend on the relational utility of the other person. *Relational utility*, a hypothetical construct that is elaborated later, is defined as the utility of another person for the attainment of personal goal(s) through social interaction.

The Social and Individual Functions of Guilt

The social function of guilt as an affective repository of other-interested concerns has received abundant attention and empirical support. Guilt is a negative, self-evaluative feeling that is commonly elicited when a person perceives his or her behavior as having violated moral standards and/or having caused harm to others (e.g., Ortony, Clore, & Collins, 1988; Tangney, 1991; Tracy & Robbins, 2006). The experience of guilt combines feelings of distress over another person's well-being with a sense of personal responsibility (Baumeister et al., 1994; Berndsen & Manstead, 2007; Ortony et al., 1988; Tangney & Dearing, 2002). People high in guilt-proneness also show high levels of other-oriented empathy (Joireman, 2004; Leith & Baumeister, 1998; Tangney, 1991). Moreover, guilt is associated with prosocial behavioral intentions (Cohen, Panter, & Turan, 2012; Roseman, Wiest, & Schwartz, 1994; Schmader & Lickel, 2006; Tangney, Miller, Flicker, & Barlow, 1996; Zeelenberg & Breugelmans, 2008) and behavior that is aimed at restoring the relation between perpetrator and victim or, when anticipated, at avoiding behavior that will harm that relationship (de Hooge, Zeelenberg, & Breugelmans, 2007; Ketelaar & Au, 2003; Nelissen, Dijker & De Vries, 2007; Nelissen, Leliveld, van Dijk, & Zeelenberg, 2011; Nelissen, Van Someren, & Zeelenberg, 2009). It is in that sense that many authors have argued that in spite of its negative hedonic tone, guilt plays a functional role in protecting interpersonal relationships and characterized it as a moral emotion which makes people put the concerns of others above their own (e.g., Haidt, 2003).

In line with the social function of guilt, it is generally thought that the magnitude of guilt people feel is proportional to the magnitude of (perceived) harm they have caused (Ortony et al., 1988; Tangney & Dearing, 2002), an assessment that in addition to personal perceptions, can also be inferred from the amount of blame by the victim (Parkinson & Illingworth, 2009). Without denying this, I argue that a transgressor's guilt is determined by not only the magnitude of harm the transgression has caused others but

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also by the magnitude of harm the transgression has caused the transgressor personally in terms of the damage to a potentially valuable social relationship. This prediction follows from a closer inspection of the proposed individual-level function of guilt.

At the individual level, the beneficial effects of guilt are assumed to follow from its curbing egoistic tendencies in favor of prosocial strategies that may be more rewarding in the long run (Darwin, 1874; DeSteno, 2009; Frank, 1988; Haidt, 2003; A. Smith, 1759; Trivers, 1971). Although the individual benefits of guilt are generally acknowledged, they have received much less attention in empirical research, which has documented only indirect support for them. First, research on behavior in economic games consistently shows that in the absence of future interactions, people behave more self-interestedly than if they face the prospect of future interactions (for overviews, see Camerer, 2003; Van Lange, Joireman, Parks, & van Dijk, 2013). These findings are consistent with the idea that guilt should only curb selfish decisions if it may benefit the individual to act prosocially toward others, that is, if there is an opportunity for future interactions in which cooperation may be reciprocated. However, even though many studies suggest that guilt may motivate prosocial decisions in economic games (e.g., de Hooge et al., 2007; Ketelaar & Au, 2003; Nelissen et al., 2007, 2011, 2009), research has never directly investigated if differences in the experience of guilt account for behavioral differences in one-shot and repeated games. Rather than eliciting varying levels of guilt, one-shot and repeated games may also to a different extent trigger self-interested calculations, which are alternative explanations for these findings.

Second, research on guilt-proneness suggested that poor personal outcomes, such as delinquency, may be associated with relatively lower inclinations to anticipated guilt over social transgressions (e.g., Cohen et al., 2012). However, these results do not imply that more guilt-proneness amounts to individual benefits in the general population, let alone that such benefits can be objectively and comprehensively measured. Moreover, the consequences of being guilt-prone are not necessarily informative of the consequences (and function) of experiencing guilt after doing something wrong (Nelissen, Breugelmans, & Zeelenberg, 2013). So, research on the consequences of guilt-proneness cannot tell us whether the intensity of experienced guilt over social transgressions also reflects the presumed individual-level benefit of the capacity to experience guilt.

In sum, current findings only provide tentative support for the assumed individual-level function of guilt. I believe more conclusive support can be obtained if we move beyond the superficial assumption that feeling guilty over social transgressions on average yielded individual benefits in the long run, and more thoroughly consider the conditions that determine whether, or to what extent, it is in the individual interest to experience guilt. In principle, an individual may benefit more from repeated cooperative interactions than from a one-time exploitation of others (Axelrod & Hamilton, 1981; Trivers, 1971). This is not invariably true, however, and even though humans are undeniably social beings to whom belongingness is a basic need (Baumeister & Leary, 1995), it would not serve the individual to unconditionally respond with guilt (and guilt related behavior) to any social transgression.

Cost-Benefit Perspectives on Guilt in Social Interactions

Both evolutionary and social exchange theory explicitly consider the costs and benefits to the individual of social interactions. According to evolutionary perspectives, the function of guilt is related to its capacity as a psychological adaptation that maximized benefits of direct reciprocity[1] (see also Darwin, 1874; DeSteno, 2009; Frank, 1988; A. Smith, 1759; Trivers, 1971). Direct reciprocity is an evolutionary principle that specifies conditions under which prosocial behavior is individually beneficial (Nowak, 2006; Trivers, 1971). The principle of direct reciprocity holds that prosocial behavior is more rewarding than acting selfishly if the same people have a sufficiently large probability to meet again to reciprocate previous prosocial behavior and—of particular relevance to the present research—are able to sufficiently benefit each other by doing so. So, rather than simply stating that cooperation is always more beneficial than acting selfishly, the principle of direct reciprocity states that it is only insofar as benefits are to be expected from future interactions with another person that individuals who feel more guilt over a transgression have an adaptive advantage.

Similar predictions are made by social exchange theories (Adams, 1963; Kelley & Thibaut, 1978; Messick & McClintock, 1968). According to equity theory (Adams, 1963; Walster, Berscheid, & Walster, 1973), guilt is a form of distress that people experience in case of positive inequity (i.e., when their input/output ratio after a social interaction is more beneficial than that of their interaction partner). People will strive to restore this inequity because (persistent) inequity poses a threat to a potentially beneficial relationship, as the interaction partner may decide that maintaining a relationship is no longer worthwhile (Walster et al., 1973). Importantly, equity theory also contends that people will consider the costs and benefits of equity restoration. As was suggested by Walster, Berscheid, and Walster (1970), when experiencing guilt "the harm doer is not only motivated by a desire for equity restoration, but will also act in such a way as to achieve the highest possible profit and satisfaction" (p. 190). So, rather than simply stating that people will make an effort to restore equity unconditionally, equity theory predicts that people will match their efforts to the benefits that they expect to gain from social exchange.

Both evolutionary and social-exchange theories share the idea that social relations are not ends in themselves but are a means to an end in that they may enable the attainment of goals that would be harder or impossible to accomplish individually (Alexander,

[1] Similar predictions regarding the moderating impact of relational utility on the experience of guilt would follow if guilt evolved as a psychological mechanism that, more broadly, regulated people's standing in a social group rather than their relation with one particular individual (i.e., from the idea that guilt arose as an adaptation for maximizing opportunities for indirect reciprocity as well). However, recent insights suggest that feelings of guilt are more specifically attuned to violations that occur in a dyadic relationship. For instance, guilt appears to elicit reparative action toward the victim of a transgression but not toward other people (de Hooge, Nelissen, Breugelmans, & Zeelenberg, 2011). Concerns for indirect reciprocity, on the other hand, seem more likely to be mediated by the experience of shame, which appears to promote a tendency toward reinclusion with the collective (de Hooge, Breugelmans, Wagemans, & Zeelenberg, in press).

1974; Berscheid & Ammazzalorso, 2001). In other words, people are concerned with the well-being of others because close others are resources by which individuals try to achieve personal goals through social exchange. Consequently, it is a functional aspect of our psychological makeup to monitor conditions that may affect the costs and benefits of social exchange. Therefore, any investment in a relation, in terms of cooperation but also in terms of restoring transgressions, should be offset by the potential, future benefits of mutual goal striving. From this, I derived the hypothesis that relational utility should moderate the experience of guilt over social transgressions.

Relational Utility as a Moderator of Guilt

As stated, relational utility is the utility of another person for the attainment of personal goal(s) through social interactions. This definition is based on the view that engaging in social interactions is a means for an individual to attain goals, or in other words, that relations are a means to an end. Relational utility is a hypothetical construct that would at least (but see discussion) depend upon the three following factors.

The Value of the Goal

Some goals are more important or valuable than others. It will (initially) be more important for me to plaster the walls of my new house than to find the proper wallpaper. So a person who can help me plaster my walls is (initially) of greater relational utility than a person who can help me pick out wallpaper. In general, individuals that help one attain more valuable goals have greater relational utility than individuals that help one attain less valuable goals. So, people will experience more guilt toward others if these others may help them to attain more valuable goals (Prediction 1).

The Instrumentality of the Relation to Attain a Goal

Instrumentality refers to the ability of another person to help in attaining a particular goal. If I need my walls plastered, another person is instrumental to the extent that (s)he possesses sufficient skills to plaster walls. Different people may differ in terms of instrumentality to the attainment of a particular goal. As greater instrumentality implies greater relational utility, people will experience more guilt over transgressions toward others who are more instrumental to the attainment of a salient goal (Prediction 2).

The Level of In(ter)dependence on Relations to Attain a Goal

Interdependence refers to the degree to which a person requires someone else to accomplish a goal. This is also referred to as *instrumental interdependence* (Kelley & Thibaut, 1978). If I am perfectly capable of plastering my own walls, I am relatively independent of my social relations to attain that goal. As relational utility increases with greater interdependence, people will experience more guilt over transgressions if they are more dependent on others to attain a goal (Prediction 3).

Alternative Explanations

Three experimental studies were designed to test these predictions. It should be noted that although goal value, instrumentality, and dependence determine relational utility, relational utility itself is a hypothetical, and not an experiential, construct. Therefore, it cannot be measured by simply questioning if people perceive greater utility of their relations after manipulating goal value, instrumentality, or dependence. Relational utility is a common denominator for the factors that determine the extent to which social interactions may yield substantial personal benefits in goal striving. In line with general predictions from evolutionary psychology (e.g., Cosmides & Tooby, 1992), our psychological experience is attuned to such factors, not to their underlying significance. Just as people do not perceive the reproductive potential of a sexual partner, they do not perceive relational utility either, but they perceive and respond to proxies of relational utility as they also perceive and respond to proxies of reproductive potential (youth, (a)symmetry, waist-to-hip ratio, etc.). Moreover, questions that at face value would seem to tap into an assessment of relational utility (e.g., "How useful/important/valuable is this person to you?") would not only yield reluctant answers, as people do not like to think about social relationships as they do about the content of their wallets (Hatfield, Rapson, & Aumer-Ryan, 2008), but such measures would also be confounded by other characteristics of relationships, such as perceived closeness (see below).

Because relational utility itself cannot be measured, it is important to differentiate its impact from other relational variables that are known to affect how guilty people feel over social transgressions. Therefore, in each study, care was taken to exclude a possible influence of relationship closeness, of strategic motives for responding with guilt, and of the level of inequity resulting from the transgression. First, people in closer relations also feel guiltier over transgressions (e.g., Baumeister et al., 1994), use guilt more often as a social influence technique (Vangelisti, Daly, & Rudnick, 1991), and are more inclined to respond in prosocial ways to accommodate their partners (Rusbult, Verette, Whitney, Slovik, & Lipkus, 1991). In the present studies, closeness was either highly unlikely, or empirically excluded, as an alternative explanation to the observed effects.

Second, because expressions of guilt can be perceived as appeasement signals (e.g., Van Kleef, De Dreu, & Manstead, 2006), people may have conscious, strategic motives for expressing more guilt if their interaction partner is of greater relational utility because they stand to lose more from not doing so. Several studies show that people strategically adjust their emotional expressions. For instance, anger expressions are attenuated when people in negotiations face opponents of high versus low status or power (e.g., Evers, Fischer, Rodriguez-Mosquera, & Manstead, 2005; Lee & Tiedens, 2001; van Dijk, van Kleef, Steinel & van Beest, 2008; Van Kleef et al., 2006). Strategic motives were unlikely to account for the reported effects, however, because the present studies assessed experiences rather than expressions of guilt. Emotional experiences are less susceptible to conscious regulation efforts (Gross, 1999), and moreover, participants' guilt-ratings were never communicated to their interaction partners, so they were useless as appeasement signals.

Finally, it is important to realize that it is central to the hypothesis that relational utility can be varied and affects the intensity of guilt without changing the severity of the transgression. So, the transgressions to which people responded were kept constant, whereas the relational utility of the person to whom the transgression was committed was varied.

Study 1: Relational Utility as Partner Value

Study 1 manipulated relational utility through the value of the partner in a social interaction. Specifically, this study varied the financial endowments of participants' negotiation partners in a dictator game (Hoffman, McCabe, Shachat, & Smith, 1994). A dictator game is the simplest form of a two-party negotiation. One person proposes a division of some amount of money, which the other person has to except. In such an interaction, especially between strangers, the relational utility of the negotiation partner (the proposer) depends exclusively on the amount of money that (s)he can divide. Study 1 investigated the consequences of an identical transgression (assignment to a boring task) by the participants toward their future negotiation partner or toward someone else on feelings of guilt in a subsequent dictator game in which the negotiation partner either had a large or a small amount of money.

It was predicted that participants would feel more guilt toward an interaction partner in a dictator game whom they had previously disadvantaged by assigning him to a boring task than toward another interaction partner whom they had no previous history with. Moreover, in line with my main hypothesis, it was predicted that this effect would be stronger if the interaction partner had a large amount of money to divide (i.e., was of high relational utility) than when the interaction partner had only a small amount of money to divide (i.e., was of low relational utility).

Method

Participants and design. Participants in this study were 148 undergraduate students (M_{age} = 21.02 years, SD = 2.57, 59% female) who received course credit for completing this and several unrelated studies in a 1-hr experimental session. They were randomly assigned to one of four conditions in a 2 (Partner: Disadvantaged vs. Not Disadvantaged) × 2 (Value: High vs. Low) between-subjects design.

Procedure. Participants came to the lab in small groups of 6–8 people. Upon arrival, they were informed that some participants had already started and should not be disturbed. To bolster this suggestion, the doors to some of the cubicles in the lab were closed. This was done to avoid suspicion later on about their interaction partners not being members of the arriving party. Before participants were seated, their pictures were taken. All pictures were taken in front of a background that was identical to the one in the pictures they were presented in the subsequent experimental tasks. This was done to increase credibility of their interaction partners being actual participants that were also present in the lab.

After they were seated in individual cubicles, participants received the instructions and completed the manipulations and dependent measures on a computer. The experiment started with several unrelated studies that were paired in a 1-hr session. The present study started by asking participants to choose which of two tasks they wanted to do. This was part of my guilt manipulation (cf. Batson, Kobrynowicz, Dinnerstein, Kampf, & Wilson, 1997). The tasks to choose from were either a test of the impact of energy drinks on performance in a darts game (which was intended as a fun task) or pretesting a large battery of personality measures that were currently being developed by the department (which was intended to be a boring task). It was further explicated that initially they had been assigned to the pretesting of the personality measures, but that since they finished somewhat earlier, they could switch with one of two other participants who had originally been assigned to the darts task. If they decided to change tasks with another student—which all participants decided to do—they had to select either one of two other participants, of whom they saw a picture on their screens, to do the boring personality test. Ostensibly, this was necessary to update the data-storage routine so that the computer they were working on would skip the personality measure and proceed with the subsequent test, and the computer of the other participant would instead initiate this routine. The person they selected to do the boring task in their stead is hereafter referred to as the "disadvantaged partner."

Participants clicked on one of two pictures on their screens. Upon doing so, the picture of the disadvantaged partner was deleted. Importantly, participants were told that on the screen of the disadvantaged partner, their picture would replace that of the person they disadvantaged. So, the disadvantaged partner would be informed about their decision and the consequences thereof. After they made their decisions, participants played the darts game. This was not an integral part of this study but mainly served to boost the credibility of the previous manipulation.

After they returned to their cubicles, they received instructions for the subsequent task. This task was presented as a financial negotiation. It was explained that in this negotiation, they would be paired with another participant. The computer would do the pairing of the participants and assign them to their respective their roles in a random fashion. Half the participants were paired with another (fictitious) participant, of whom they had not seen a picture before. This person is hereafter referred to as the "not-disadvantaged partner." The other half of the participants was paired with the disadvantaged partner.

After the computer made the pairings, and participants saw the picture of their interaction partner, it was further explained that their partner was given some money to divide. The decision of how to divide the money was exclusively made by the partner. It was further stated that any amount they received, they could keep, and that their interaction partner would keep the rest. In the high-value condition, participants learned that their interaction partner received €20 to divide, and in the low-value condition, they learned that their interaction partner received €1 to divide.

Next, participants rated their current emotions and indicated how much money they expected to receive as well as the minimum amount of money they thought would be an acceptable offer. The latter measures served to exclude alternative accounts to the predicted effects (see discussion to the present study). Subsequently, their partners ostensibly made their decisions, keeping the full amount for themselves. Finally, participants were thanked for their participation and thoroughly debriefed before they left.

Dependent measures. After being presented with the choice between a game of darts and a personality measure, participants rated to what extent they liked playing darts and liked completing personality measures. Answers were rated on a 5-point scale (1 = *not at all*, 5 = *a lot*). As intended, participants found playing darts (M = 4.12, SD = 1.22) to be more fun than completing a personality measure (M = 3.60, SD = 1.38), $t(147) = 3.28$, $p < .001$.

After learning who their interaction partner was and the amount that he was given to divide, participants rated to what extent (1 = *not at all*, 5 = *extremely*), at that very moment, they felt each of

the following emotions: Nervous, Happy, Guilty, Ashamed, Sad, and Angry. These emotion ratings were not communicated to the ostensible interaction partner.

Results

A series of 2 (Partner: Disadvantaged vs. Not-Disadvantaged) × 2 (Value: High [20€] vs. Low [1€]) analyses of variance (ANOVAs) was conducted on each of the six emotion measures (see Table 1). Results revealed a main effect of Partner condition on feelings of guilt, $F(1, 144) = 9.15$, $p = .003$, $\eta^2 = .060$, confirming that participants felt more guilt toward an interaction partner who they previously disadvantaged ($M = 1.39$, $SD = 0.69$) than to an interaction partner who they had no prior history with ($M = 1.08$, $SD = 0.31$). This shows that the manipulation was successful in eliciting feelings of guilt. Of importance to the main hypothesis, there was also a main effect of value, $F(1, 144) = 7.59$, $p = .007$, $\eta^2 = .050$, and a significant interaction effect, $F(1, 144) = 6.35$, $p = .013$, $\eta^2 = .042$. This confirmed that feelings of guilt were higher if the transgressions affected a negotiation partner of high value ($M = 1.35$, $SD = 0.68$) than if the (same) transgression was made toward a negotiation partner of low value ($M = 1.08$, $SD = 0.28$). In fact, a simple effects analysis (cf. Aiken & West, 1991) revealed that participants in the low-value condition, in which the interaction partner had only €1 to divide, did not feel more guilt toward the disadvantaged than toward the not-disadvantaged partner, $F(1, 144) = 0.12$, $p = .729$, $\eta^2 = .001$, whereas they did feel significantly more guilt toward the disadvantaged than toward the not-disadvantaged partner in the high-value condition, where the interaction partner received €20 to divide, $F(1, 144) = 16.41$, $p < .001$, $\eta^2 = .102$ (see Table 1).

The same analysis on any of the other emotions revealed no significant effects of Partner or Value conditions and no significant interactions (all Fs < 1.07, *ns*), with one exception: a significant main effect of value on happiness, $F(1, 144) = 5.84$, $p = .017$, $\eta^2 = .039$. Participants were less happy if their interaction partner was given €20 ($M = 3.16$, $SD = 1.30$) instead of €1 ($M = 3.63$, $SD = 1.23$) to divide. This suggests that participants did perceive a value difference between the amounts that differentiated the high- and the low-value conditions. Perhaps the possibility of missing out on a large amount of money was less appealing to them.

Discussion

The present study manipulated relational utility through the value of the partner in a social interaction. The results confirmed Prediction 1 in that participants felt more guilt over the same social transgression if their interaction partners were of higher relational utility because of their greater financial endowments. In fact, the only time participants experienced guilt at all was when they were interacting with someone they previously disadvantaged and that person was given 20€ rather than 1€ to divide. Although floor-effects may sometimes produce spurious interactions, this is only likely if the experimental treatment should reduce scores on the dependent measure that, due to the insensitivity of the low end of the scale, cannot be assessed. My manipulation of goal value, however, increased rather than decreased participants' ratings on the dependent measure (guilt). Moreover, it is perfectly reasonable that in three out of four conditions, participants did not experience guilt at all. In the not-disadvantaged partner conditions, participants did not commit a transgression, and the absence of guilt in the disadvantaged partner with low relational utility condition may reflect a threshold effect, indicating that participants did not feel guilty over the transgression if the relational utility of the interaction partner was too low. In that way, the present data would even suggest that a certain level of relational utility is required for transgressions to elicit guilt in the first place, at least in case of minor transgressions. (It should be noted that the task-switch paradigm only constituted a mild transgression that was also easily justifiable as the result of an experimental procedure that was largely beyond the participant's control.)

Differences in perceived closeness are unlikely to account for the present findings. As participants were coupled with fictitious partners whom they did not now, and were guaranteed anonymity throughout the study, it seems unlikely that the procedures and manipulations resulted in different levels of perceived closeness in a fashion that would have driven the effects in the present study. However, to positively rule out closeness as an alternative account, subsequent studies included explicit measures of closeness. In a similar vein, it seems unlikely that the observed effects were the result of strategic motives as guilt-ratings strictly concerned participants' experiences of guilt and were not communicated to their negotiation partners.

Finally, because the transgression that triggered guilt was identical, these effects cannot be accounted for by discrepancies in the level of inequity. Perhaps participants in the high-value condition expected to get more money from their partners, who after all were given more money to divide, and therefore experienced more guilt because of the greater anticipated inequity after the distribution by the proposer. However, the level of anticipated inequity also depended on the minimum amount of money that participants still considered acceptable. After all, the allocation to the role of the dictator was made randomly by the computer, thus participants likely experienced entitlement to a certain proportion of the money. Therefore, a more accurate reflection of anticipated positive inequity would be the amount by which the expected offer exceeded the minimally acceptable offer. When calculated as the difference between the expected and the minimally acceptable amount, there was no difference in anticipated positive inequity between the experimental conditions (all Fs < 1.9, *ns*). So, even though they expected to receive more money in the 20€ conditions, participants did not consider this to be more inequitable, ruling out positive inequity as an alternative account of the present findings.

Table 1
Means (and Standard Deviations) of Emotion Ratings in Study 1

	Not-disadvantaged partner		Disadvantaged partner	
Measure	1€	20€	1€	20€
Guilty	1.07 (0.25)	1.09 (0.38)	1.11 (0.32)	1.56 (0.80)
Nervous	1.95 (1.12)	1.97 (1.03)	1.81 (0.83)	2.14 (1.30)
Ashamed	1.36 (0.89)	1.35 (0.85)	1.48 (1.09)	1.42 (0.91)
Sad	1.05 (0.21)	1.09 (0.29)	1.07 (0.27)	1.09 (0.37)
Angry	1.02 (0.15)	1.09 (0.38)	1.04 (0.19)	1.09 (0.61)
Happy	3.50 (1.23)	3.21 (1.32)	3.85 (1.23)	3.12 (1.29)

Study 2: Relational Utility as Instrumentality to Goal Attainment

Study 2 adapted a procedure from Fitzsimons and Shah (2008), using the instrumentality of significant others for the self's progress to currently activated goals to manipulate relational utility. Participants were asked to list the names of friends that helped them to attain various goals. Subsequently, one of these goals was activated and participants were confronted with a series of possible transgressions to one of their friends whose name was derived from the previously entered list. So, participants indicated how guilty they would feel if committing each of these transgressions toward a friend that they listed as instrumental (i.e., was of high relational utility) or to a friend they did not list as instrumental (i.e., was of low relational utility) to the attainment of the activated goal. I predicted that guilt-ratings would be higher if the friend was instrumental for the attainment of the activated goal than if the (same) friend was not instrumental or if no goal was activated.

In addition, Study 2 measured perceived closeness to the friend after the goal-priming manipulation to exclude the possibility that the effects of instrumentality on guilt were actually caused by (changes in) perceived closeness to the friend after the goal-priming manipulation. It should be noted that Fitzsimons and Shah (2008, Study 2) did find that priming a goal increased perceived closeness with friends who are instrumental to the attainment of that goal. As such, their findings deviated from the ones reported for the present study, which revealed no effect of goal-priming on perceived closeness. Possible explanations for this discrepancy are considered in the discussion to the present study.

Method

Participants and procedure. Participants in this study were 174 undergraduate students (M_{age} = 19.51 years, SD = 2.12, 85.6% female) who received course credit for completing this and several unrelated studies in a 1-hr experimental session. Participants came to the lab and were seated in individual cubicles in which they received instructions and completed the manipulations and dependent measures for the present research on a computer. Participants were randomly assigned to one of six conditions in a 3 (Goal: Neutral vs. Achievement vs. Social) × 2 (Friend: Achievement vs. Social) between-subjects design.

Friend's goal-instrumentality assessment. Participants were first asked to list the names of friends who helped them achieve various goals. Helping was defined for participants in the following way:

> When we say that this person "helps" you to attain this goal, we do not just mean that (s)he actually assists you in doing it, but also that his or her existence in your life motivates and inspires you to strive for this goal.

The goals were as follows: achieving in college, socializing and having fun with other people, being healthy and fit, keeping up with the latest trends, and doing chores. Only the names of friends listed in response to the goals of achieving and socializing were relevant to the present experiment.

Goal priming manipulation. Goals were primed with a scrambled sentence procedure (Srull & Wyer, 1979), in which participants unscrambled 15 sentences of five words into grammatically correct four-word sentences. For participants in the Achievement condition, 10 sentences contained words related to achievement (e.g., "I study very hard—course"). For participants in the Socializing condition, 10 sentences contained words related to socializing (e.g., "We have fun together—bar"). The sentences in the condition in which no goals were primed were neutral with respect to these goals (e.g., "I brush my teeth—toothpaste").

Closeness measure. After the goal-priming manipulation, directly before the guilt measures, participants completed the Inclusion of Other in the Self Scale (IOS; Aron, Aron, & Smollan, 1992) to measure perceived closeness with the friend to whom they were asked to imagine committing several types of social transgressions. Participants indicated which of seven graphic representations of two circles, with increasing levels of overlap reflecting increasing levels of closeness, best reflected their actual level of closeness with this particular friend.

Guilt measure. Subsequently participants were asked to imagine committing each of three transgressions to one of their friends. A name was randomly drawn from the two previously entered names of friends that helped participants attain either the achievement or the social goal. Participants were told that this was done to help them picturing to commit each of these transgressions toward someone they know. The transgressions were as follows: "Forget the birthday of FRIENDNAME"; "Say you cannot help FRIENDNAME move, while in fact you can"; and "Say that the essay of FRIENDNAME is badly written". Participants rated how guilty they would feel after committing each of these transgressions (α = .62) on a scale ranging from 1 (*not guilty at all*) to 7 (*extremely guilty*).

Results

Manipulation check. Participants who listed the same friend's name for both the goal of achieving in university and for socializing and having fun with others (N = 10) were excluded from analyses because this friend would be instrumental in both goal-priming conditions. The remaining sample consisted of 164 participants.

Closeness. A 3 (Goal: Neutral vs. Achievement vs. Social) × 2 (Friend: Social vs. Achievement) ANOVA on closeness ratings after the goal-priming manipulation revealed no significant effects (all Fs < 2.09, *ns*), suggesting that the manipulation of instrumentality did not result in any differences in perceived closeness to instrumental or non-instrumental friends. So, it seems that differences in closeness cannot account for the observed effects.

Guilt. A 3 (Goal: Neutral vs. Achievement vs. Social) × 2 (Friend: Achievement vs. Social) ANOVA on average guilt ratings revealed a significant interaction effect, $F(2, 158) = 3.42$, $p = .035$, $\eta^2 = .041$ (see Figure 1). Neither the main effect of Goal Priming, $F(2, 158) = 0.62$, $p = .539$, $\eta^2 = .008$, nor the main effect of the Friend, $F(1, 158) = 0.42$, $p = .518$, $\eta^2 = .003$, was significant. Confirming the prediction that guilt-ratings would be higher if the friend was instrumental for the attainment of the activated goal than if the (same) friend was not instrumental or if no goal was activated, guilt ratings toward instrumental friends (i.e., toward the social friend only after a social goal was primed and toward the achievement friend only after an achievement goal was primed: M = 4.54, SD = 1.04) were higher than guilt ratings toward (the same) non-instrumental friends (i.e., in all other conditions: M = 3.99, SD = 1.22), $F(1, 163) = 8.20$, $p = .005$.

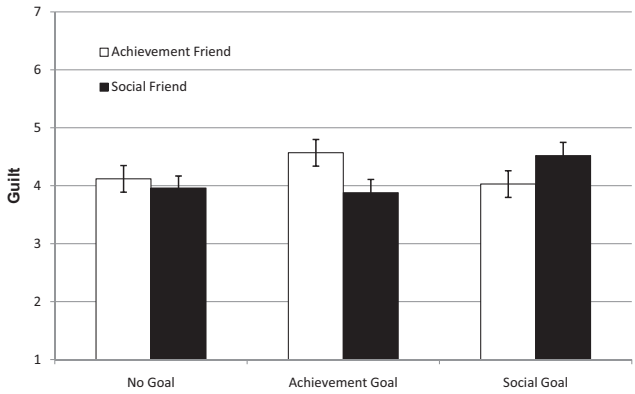

Figure 1. Mean guilt ratings (± *SE*) over hypothetical transgressions toward different friends and after priming of different goals in Study 2.

Discussion

The present study manipulated relational utility through the instrumentality to the attainment of a salient goal of a friend that was either listed or not listed as instrumental to that goal by the participants (cf. Fitzsimons & Shah, 2008). The results confirmed Prediction 2 in that participants felt more guilt over the same, hypothetical transgressions if the friend toward whom they imagined committing these transgressions was instrumental to a previously activated goal.

Differences in closeness between friends could not account for the observed effects of relational utility as the manipulations did not induce any differences in perceived closeness. As such, the present findings diverge from those reported by Fitzsimons and Shah (2008, Study 2), who found that instrumentality did increase perceived closeness. There is, however, a subtle difference between the procedure adopted in the present study and that of Fitzsimmons and Shah that may explain this discrepancy. The present study compared perceived closeness between a friend that was instrumental to the attainment of a primed goal and the same friend when not instrumental to the primed goal. Fitzsimmons and Shah compared perceived closeness between a friend that was listed as instrumental and another friend that was listed as non-instrumental, that is, a friend that obstructed participants to attain the primed goal. In fact, when comparing closeness ratings of the same friend after priming a relevant goal or not, they did not observe any closeness differences either. It might be that the impact of instrumentality on perceived closeness that was reported by Fitzsimmons and Shah was mainly due to participants experiencing less closeness to a non-instrumental friend than to an increase in perceived closeness as a result of greater instrumentality.

Because the present study used hypothetical transgressions,[2] guilt-ratings are unlikely to be affected by strategic consideration of other people's reactions. Moreover, this allowed us to keep the nature and thus the severity of the transgressions constant, ruling out inequity differences as an alternative account for any of the observed differences in guilt. However, my goal-priming manipulation might have affected participants' evaluations of their friends' past behavior, such that if there was a match between the primed goal and the help one received from a friend in a given domain, the friend's behavior would be evaluated more positively, causing greater positive inequity (and thus more guilt) when considering hypothetical transgressions to this person. Both the relational utility and the positive perceived inequity account of the present findings involve the same underlying process, that of goal-dependent evaluations. According to the relational utility account, the primed goal directly affects the evaluation of the person (in terms of relational utility), which should be higher if the person in question is instrumental to the attainment of the primed goal, causing more guilt. According to the positive inequity account, the friend's name would have served as a prime to activate memories of past behavior, and the goal prime then affected the evaluation of those memories, which resulted in greater perceived inequity (and more guilt) if the memories about the behavior are in the same domain as the goal.

Although the latter process cannot be excluded, it involves an additional step (i.e., assumption) and therefore carries the burden of proof as an alternative to the relational utility account. Moreover, if the friend's name primed memories of past behavior that actually helped the participant to accomplish the salient goal, the impact of the goal-priming manipulation would be profoundly reduced as previous research indicates that goals only affect evaluations if the goal itself is not yet accomplished (e.g., Ferguson & Bargh, 2004). So, the fact that the positive inequity account draws strongly on the memory of a friend's past behavior is not just an additional assumption but also one that seems unlikely to produce the effects of the present study.

Study 3: Relational Utility as Dependence

Study 3 manipulated relational utility by varying the level of dependence of participants on others to attain a particular goal. People who are more dependent on others are more likely to experience guilt (for an overview, see Rusbult & Van Lange, 2003). However, studies on the affective consequences of interdependence have focused on differences between people with an independent versus interdependent self-construal (e.g., Scherer, Matsumoto, Walbott, & Kudoh, 1988) or, closely related, on differences between people with high and low power (Lee & Tiedens, 2001), or found support for a relation between interdependence and feelings of guilt in non-experimental designs (e.g., Baumeister, Wortman, & Stillwel, 1993). So far, a causal relation between instrumental interdependence and guilt awaits empirical demonstration.

Participants were led to believe they were going to do a debating contest between two teams of four players. From each team, only one person would be selected to do the actual debating but all members of the team could contribute by providing useful arguments. Relational utility was manipulated by providing participants with either an easy (low dependence) or a difficult (high dependence) statement to defend. It should be noted that no one was actually assigned the role of debater. So, there was no actual

[2] Measuring responses to hypothetical transgressions is a common procedure in research studying the antecedents of emotions and capitalizes on the human capacity to anticipate emotional consequences of events. Obviously, this is only an approximation of actual guilt feelings and may be subject to particular biases even though I am not aware of biases that would have caused the observed pattern of findings. I wish to stress that this was the only study relying on guilt ratings to hypothetical transgressions.

difference in dependence between participants, only differences in perceived dependence that participants might derive from the difficulty of the statements. Moreover, this dependence strictly concerned the debating contest and any effects of the dependence manipulation on guilt, which was assessed in an unrelated social dilemma task, therefore could not be explained by participants in the high-dependence condition having a greater need to appease their team members (e.g., Van Kleef et al., 2006).

After providing arguments (i.e., the manipulation of dependence), participants were led to believe they played a four-player social dilemma game with the same participants that constituted their team for the debating task. Guilt was induced by providing participants with false feedback, suggesting that their contributions fell short to those of their team members. I predicted that participants with lower contributions would experience more guilt, but that this effect would be stronger for participants that were highly dependent on their team members' arguments if they were assigned the role of debater.

Method

Participants and procedure. Participants were undergraduate students ($N = 130$, $M_{age} = 20.76$ years, $SD = 2.48$, 56.3% female) who came to the lab for a study on "group processes," which combined several experimental tasks from different researchers. The present study was run first in the series. After being seated in individual cubicles, participants were randomly assigned to either the easy (low dependence) or hard (high dependence) statement condition in the debating task. Participants in both conditions received identical instructions. After writing down their arguments for the debating contest, participants completed several dependent measures about their perceptions of the debating contest as a manipulation-check to the dependence conditions. Subsequently, they were told they would be occupied with several other experimental tasks before the debating contest would actually take place. The first of these tasks was a four-player social dilemma task, during which the main dependent variables to the present study were collected.

At the end of the 1-hr experimental session, participants were paid the money they earned in the social dilemma task in accordance with the throw of a 10-sided die. They were debriefed, during which it was made clear that there would not be an actual debate. Finally, they were thanked for their participation and were dismissed.

Debating contest: Instructions. Participants received instructions to, and completed, the debating task (i.e., the dependence manipulation) and its associated measures on paper and pencil. They first received a sheet detailing the procedures of the debating contest. They were explained that they were going to participate in a debating contest between two teams of four players. One player of each team would be assigned to the role of the debater in the actual contest. The debater would be randomly selected from each team right before the start of the contest, at the end of the experimental session. All team members, however, could contribute by writing down as many useful arguments as possible, which would be passed along to the debater to help him/her prepare for the contest. The debating contest would be held publicly among all participants and the experiment leader. These instructions were designed to ensure involvement of all participants in the debating task to boost the effectiveness of the manipulation, while at the same time not introducing within-condition differences in dependence between participants that were to be the debater and those that merely contributed by only providing arguments.

On the flip-side of the instruction-sheet, participants read the statement and whether their team would be arguing in favor or against this statement. In fact, all participants learned that they would be arguing in favor of one of two different statements. The easy statement (low-dependency condition) was "Donor registration should be obligatory" and was accompanied by a few lines of clarification explaining that this statement implied that all people should be required by law to register whether or not they wanted to be organ donors after they deceased. The hard statement (high-dependency condition) was "Female circumcision should be allowed" and was also accompanied by a few lines of clarification explaining that this statement implied that there should not be a law that prohibited the surgical removal of external female sex organs. Subsequently, all participants were asked to provide as many possible arguments to help the debater of their team win the contest. Participants were instructed to provide arguments both in favor and against the statement as this could help the debater to think about negations of possible argument of the other team. This instruction was included to make participants realize that theirs was in fact an easy (hard) statement to defend, as it would be difficult (easy) to list counterarguments.

Debating contest: Measures. The number of arguments provided in favor or against the statement as provided by the participants was counted. Subsequently, after handing in their sheets with arguments, participants completed a brief questionnaire measuring perceptions of the debating task. Participants rated to what extent they thought it was easy/difficult "to provide arguments in favor of the statement", "to provide arguments against the statement" (reversed), and "to win the debating contest." Answers to all three items ($\alpha = .72$) were rated on a 9-point bipolar scales (1 = *very easy*, 9 = *very difficult*) and were averaged into a single measure of perceived challenge.

Next, participants imagined that they were assigned the role of debater and to rate to what extent in that case they would "need the input from their team members," "would be dependent upon the input from their team members," and "would value the input of their team members." Answers to all three items ($\alpha = .80$) were rated on a 5-point scale (1 = *not at all*, 5 = *extremely*) and were averaged into a single measure of perceived dependence.

Next, participants rated perceived aversiveness (1 = *very aversive*, 9 = *very enjoyable*) and the perceived chance (1%–100%) of being assigned the role of debater.

Finally, participants rated perceived closeness with the other team members, using an adapted version of the IOS (Aron et al., 1992). Participants indicated which of seven graphic representations of two circles, with increasing levels of overlap, reflecting increasing levels of closeness, best reflected their actual level of closeness with their team.

Social dilemma: Instructions. After they handed in all completed materials to the debating contest, participants received instructions to, and completed the measures of, the social dilemma task on paper and pencil. It was explained that they were going to play a financial interaction game with the members of their debating team. The procedure of the financial interaction as it was explained to the participants followed the basic rules of a four-player social dilemma task in which each player received 5 euros, which they could distribute at will (in increments of 50 ct.) to a

group fund or to a personal fund. Every player made his/her decision blind and anonymous. The money in the group fund was doubled and distributed evenly among the players. At the end of this one-round interaction, each player would own the money in his/her personal fund and the money (s)he received from the (doubled) group fund. Each participant had a 1 in 10 chance of actually being paid their outcome, which was determined by the roll of a 10-sided die at the end of the session.

Social dilemma: Measures. Participants indicated how much (of €5) they wanted to keep for themselves and how much they wanted to invest in the group fund on the instruction sheet, which they handed to the experimenter.

After an intermediate filler task, participants received a sheet with a table ostensibly detailing the decisions of all team members in the financial interaction. The contribution of the other three team members was fixed. According to the table, Players 1 and 4 had decided to invest 5 euros in the group fund, and Player 2 invested 4 euros. The table also specified their own contribution in the row labeled Player 3, which was marked with an asterisk and was copied from the instruction sheet. To increase the salience of their contribution (most likely) falling short to that of their team members, participants indicated if they contributed more or less than the average of the other three team members.

Finally, emotional reactions to the outcome of the financial interaction were measured. Participants rated on a 5-point scale (0 = *not at all*, 4 = *very strongly*) the extent to which they felt each of the following emotions at that very moment: Guilt, Anger, Sadness, Shame, Joy, and Disappointment.

Results

Manipulation check. Participants listed more arguments in favor of the easy ($M = 3.51$, $SD = 1.62$) than in favor of the hard statement ($M = 2.48$, $SD = 1.37$), $F(1, 128) = 14.98$, $p < .001$, which suggests that the former was in fact easier. The number of counterarguments did not differ between easy ($M = 0.72$, $SD = 1.08$) and hard ($M = 0.58$, $SD = 0.85$) statements, $F(1, 128) = 0.71$, $p = .400$. Maybe, participants focused more on providing support, implying a confirmation bias in spite of the instructions. Perceived challenge was higher in the hard ($M = 6.21$, $SD = 1.49$) than in the easy ($M = 4.34$, $SD = 1.03$) statement condition, $F(1, 129) = 69.73$, $p < .001$, which confirms that the latter was also perceived as easier. As intended, this resulted in greater levels of perceived dependence in the hard ($M = 3.59$, $SD = 0.68$) than in the easy ($M = 3.03$, $SD = 0.60$) statement condition, $F(1, 129) = 25.76$, $p < .001$.

Further confirming the effectiveness of the manipulation, participants in the hard statement condition rated the prospect of them being selected as debaters as less enjoyable ($M = 3.33$, $SD = 1.36$) than participants in the easy statement condition ($M = 4.20$, $SD = 1.48$), $F(1, 129) = 12.14$, $p = .001$. This reflects the greater perceived challenge of the hard statement condition as enjoyment and challenge were in fact negatively correlated, $r(130) = -.38$, $p < .001$, as were enjoyment and perceived dependence, $r(130) = -.53$, $p < .001$.

Participants in the easy ($M = 30.85$, $SD = 14.21$) and the hard ($M = 29.67$, $SD = 16.62$) statement conditions did not differ in terms of their perceived chance of being selected as debaters, $F(1, 129) = 0.19$, $p = .665$. This confirms that differences in perceived dependence were not due to biased perceptions of the chance of being selected as a debater but were caused by the perceived challenge of the debating task. Of particular importance to the validity of the results of the present study as a test to the relational utility hypothesis, participants in the easy ($M = 4.35$, $SD = 1.55$) and the hard ($M = 4.00$, $SD = 1.80$) statement conditions also did not differ in terms of perceived closeness with their team members, $F(1, 129) = 1.40$, $p = .239$, which singles out differences in perceived dependence as the only likely explanation to the observed effects.

Social dilemma game. Contributions to the group fund in the social dilemma task did not differ between the easy ($M = 1.80$, $SD = 1.37$) and the hard ($M = 1.66$, $SD = 1.17$) statement conditions, $F(1, 129) = 0.43$, $p = .513$. This suggests that dependence did not affect participants' initial levels of prosocial behavior. Even though previous research suggest that greater dependence results in more prosocial behavior, the manipulation did not vary levels of dependence in the social dilemma task but constituted carryover effects of perceived dependence that were elicited by the preceding debating contest manipulation. Moreover, the hypothesis strictly pertains the effects of these carryover effects of dependence on guilt over social transgressions, which as at the time participants decided on their contributions to the group fund were not yet apparent.

Emotions. A hierarchical linear regression analysis[3] tested the main hypothesis by predicting reported levels of guilt over personal contributions to the group fund in a social dilemma game by the amount participants kept to themselves, experimental condition (dummy coded), and their interaction (see Table 2). Results showed the expected, positive main effect of the amount participants kept to themselves. The less people contributed to the group, the guiltier they felt after learning that the other group members in fact contributed more. A significant Contribution × Condition interaction effect further confirmed the relational utility hypothesis. An analysis of simple effects confirmed that the amount kept to oneself had a stronger effect on participants' guilt feelings in the high-dependence condition ($\beta = .60$, $SE\ B = .12$, $p < .001$) than in the low-dependence condition ($\beta = .27$, $SE\ B = .09$, $p = .013$; see Figure 2).

The Contribution × Condition interaction effect was not significant for any of the other emotions (see Table 2), except for marginally significant interaction effects on shame and happiness. For both emotions, the association with the amount participant's kept to themselves was more pronounced in the high-dependence condition, although effects for happiness were in the opposite direction as those for guilt and shame (i.e., participants who kept more to themselves experienced less happiness). The fact that the manipulation of dependence also affected shame, albeit to a lesser extent, can probably be accounted for by the fact that in a multiple player social dilemma interaction an interpersonal transgression

[3] In these analyses, participants ($N = 5$) who failed to correctly indicate that their contribution was more or less than the average of the three other group members were excluded because this misidentification rendered the guilt rating uninformative as it no longer corresponded to their actual contribution. If these participants were included in the analysis, however, the main effect of the amount kept to oneself ($\beta = .40$, $SE\ B = .07$, $p < .001$) and the interaction effect ($\beta = .28$, $SE\ B = .15$, $p = .060$) were both retained, although the latter was only marginally significant.

Table 2
Results From Hierarchical Linear Regression Analysis of the Effects of Dependence, Contribution, and Their Interaction on Emotion Ratings in Study 3

	Guilty			Disappointed			Ashamed			Sad			Angry			Happy		
Variable	β	*SE B*	*p*	β	*SE B*	*p*	β	*SE B*	*p*	β	*SE B*	*p*	β	*SE B*	*p*	β	*SE B*	*p*
Dependence	.11	.19	.180	.08	.10	.371	.13	.20	.129	.02	.04	.868	.07	.05	.470	.08	.23	.385
Amount kept (€)	.40	.07	<.001	−.03	.04	.720	.38	.08	<.001	.07	.02	.458	−.13	.02	.170	−.11	.09	.225
Interaction	.30	.15	.049	−.01	.08	.941	.28	.16	.062	.09	.03	.593	−.14	.04	.397	−.28	.18	.086

that elicits guilt is also a public transgression as the other team members are an audience to the participant's behavior. Public transgressions commonly also elicit feelings of shame (R. H. Smith, Webster, Parrott, & Eyre, 2002).

Discussion

The present study manipulated relational utility through the level of dependence on one's social relations for the attainment of a goal. The results confirmed Prediction 3, in that participants felt more guilt over a transgression if they were more dependent on their social relations for attaining that goal. Instead of keeping the transgression constant, as in the previous studies, the severity of the transgression depended upon the participant's contribution to the group fund and thus varied between participants. As such, the findings from the present study show that relational utility moderates the impact of transgression severity on guilt in a gradual fashion.

Because participants in the high-dependence condition were asked to support a negative cause (female circumcision), whereas participants in the low-dependence condition were asked to defend a positive cause (organ donation), one might argue that the manipulation of dependence itself could have induced guilt. The observed interaction then may be the result of two additive main effects of guilt rather than the result of guilt being moderated by relational utility. However, my results provide several suggestions that rule out this alternative explanation. First, if the dependence manipulation would have elicited guilt, participants in the high-dependence condition would have listed more counterarguments to reduce the impression that they were unable to reject or even supported the statement. This was not the case, as participants in both conditions provided equal numbers of counterarguments. Second, if the dependence manipulation would have elicited guilt, participants in the high-dependence condition would have made larger contributions to the group fund in the social dilemma game as a result of carry-over effects of their elevated guilt state. Indeed, such carry-over effects of guilt (e.g., Nelissen et al., 2007) and other emotions (e.g., Lerner, Small, & Loewenstein, 2004) have been documented repeatedly in research on economic decisions. Again, this was not the case. Participants in the high- and the low-dependence conditions contributed equally to the group fund in the social dilemma game. For the same reason, it seems unlikely that participants in the high-dependence condition felt more guilt because in addition to making a low contribution to the group fund, they perceived a greater chance of letting their team members down in the debating contest. Not only was nobody assigned to the role of debater at that point, the anticipation of giving a poor performance in the debating task would also have elicited feelings of anticipated guilt that would have resulted in higher contributions to the group fund (e.g., Nelissen et al., 2011, 2009).

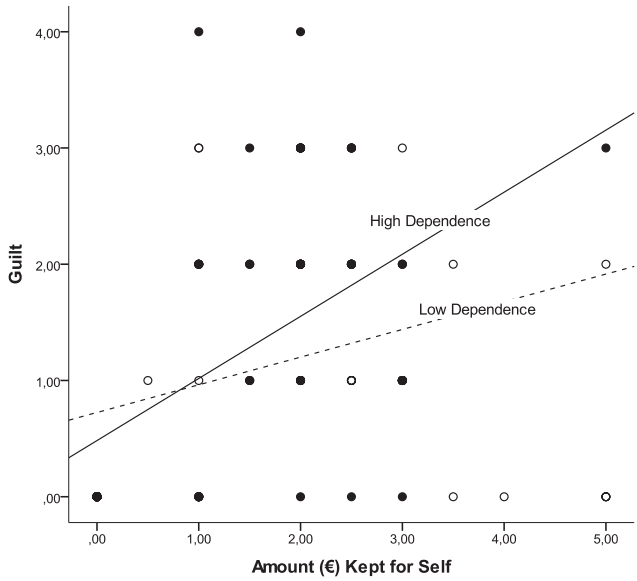

Figure 2. Graphic representation of the relation between the amount kept to oneself in the social dilemma game and subsequent feelings of guilt at high (black markers and solid interpolation line) and low (white markers and dashed interpolation line) levels of dependence in Study 3. Markers may represent multiple cases.

Also, differences in inequity cannot account for these effects as the level of inequity was strictly determined by the discrepancy between the participants' contributions and that of their group members, not by the manipulation of dependence. Moreover, as the dependence manipulation did not affect closeness ratings, differences in perceived closeness with the other group members could not account for the observed effects. Finally, the transgression (a below-average contribution to the group fund in a social dilemma) did not affect the attainment of the goal (doing well in the debating task) for which people were dependent on their social relations. After all, all participants already handed in their list of arguments for the debating task. Therefore, strategic motives for appeasing those on whom their outcomes depended cannot account for the higher guilt levels in the high-dependence condition.

General Discussion

It is generally assumed that the capacity to experience guilt is individually beneficial as it makes people forfeit the immediate

gains of acting selfishly for the more rewarding benefits of repeated, cooperative interactions (Darwin, 1874; DeSteno, 2009; Frank, 1988; Haidt, 2003; A. Smith, 1759; Trivers, 1971). The aim of the present article was to deepen our understanding of the individual-level function of guilt. Based on the idea that social relations are not ends in themselves, but are a means to an end in that they may enable the attainment of goals that would be harder or impossible to accomplish individually (Alexander, 1974; Berscheid & Ammazzalorso, 2001), I hypothesized that the experience of guilt in social interactions should be moderated by factors that determine what I call the relational utility of the interaction partner. Relational utility is defined as the utility of another person for the attainment of personal goal(s) through social interaction. In other words, I predicted that people would experience more guilt over a particular social transgression if the benefits of a subsequent social interaction with a particular individual are substantial rather than small, that is, if the interaction partner has a high relational utility for a goal that the individual is currently pursuing.

Present Findings and Limitations

The hypothesis was confirmed in three studies that manipulated different factors that determine the relational utility of an interaction partner. Study 1 manipulated relational utility through the value of the partner in a social interaction. People experienced more guilt over a social transgression (assigning the interaction partner to a boring experimental task) if their interaction partner had a high (20€) rather than a low (1€) amount of money to divide in a subsequent dictator game. Study 2 manipulated relational utility through the instrumentality of the other person for the attainment of individual goals. People expected to feel guiltier over hypothetical social transgressions toward a person that was instrumental to the attainment of a salient goal than toward a person that was instrumental to the attainment of a non-salient goal or toward the same person when no goal was primed. Study 3 manipulated relational utility through the level of dependence on others to attain a particular goal. People felt guiltier over a social transgression (a below average contribution in a social dilemma game) if they were more dependent on their group members for performing well in a subsequent debating contest. Together, these findings consistently supported the relational utility hypothesis.

Because relational utility is a hypothetical construct that is a common denominator for factors that determine the extent to which social interactions may yield substantial personal benefits in goal striving, it is important to differentiate the impact of these factors from other relational variables that may also affect how guilty people feel over social transgression. In each study, care was taken to exclude a possible influence of perceived closeness, of strategic motives for responding with guilt, and of the level of inequity resulting from the transgression. First, closeness was unlikely to affect guilt in Study 1 as the transgression occurred in an anonymous interaction between strangers with no previous history of social exchange. Studies 2 and 3 empirically excluded an effect of perceived closeness. Second, conscious, strategic motives were unlikely to account for the observed effects because the present studies assessed experiences rather than expressions of guilt. Emotional experiences are less vulnerable to conscious regulation and moreover, participants' guilt-ratings were not communicated to their interaction partners, so were unlikely to have any value as appeasement signals. Even when disregarding this general consideration, strategic considerations were unlikely to play a role in Study 2 as participants responded to hypothetical transgressions in which there is no need for appeasement. Furthermore, in Study 3, the transgression (a below-average contribution to the group fund in a social dilemma) could not affect the attainment of the goal (doing well in the debating task) for which people were dependent on their social relations, so there was no need for strategic considerations whatsoever. Third, differences in inequity were unlikely to account for observed differences in guilt, as I kept the severity of the transgression constant in each study. In sum, it seems unlikely that factors other than relational utility present a more likely account of the observed effects.

Still, the fact that relational utility is a hypothetical construct is the key bottleneck for the validity of the present findings. A hypothetical construct, by definition, is a theoretical concept that "refers to processes or entities that are not directly observed" (MacCorquodale & Meehl, 1948, p. 104). In that sense, a hypothetical construct cannot be directly measured or manipulated "and, so, its existence may not be directly and conclusively demonstrated" (Lovasz & Slaney, 2013, p. 23). The value of a hypothetical construct as an explanation for observable phenomena is dependent upon the condition that the hypothetical construct "is not merely a summary of the relationships between observable variables but contains surplus meaning over and above such relationships" (Colman, 2006, p. 359). My relational utility construct meets that criterion. It not only provides an abstraction of several qualitatively different factors (i.e., the value of the goal in a social interaction, the instrumentality of the relationship partner to the attainment of that goal, and the level of dependence on social partners to goal attainment) but also provides a general, functional explanation as to why these factors affect the experience of guilt over social transgressions. Goal value, instrumentality, and dependence all determine the extent to which the individual may derive substantial benefits from social exchange, which is a theoretically derived precondition for guilt to be adaptive.

Future studies that investigate the impact of other factors that determine relational utility are required to further establish the value of the relational utility construct. For instance, when a particular social relation is not just conducive to the attainment of one but also to the attainment of multiple personal goals, the relational utility of that person is higher than the relational utility of a person that is only instrumental to the attainment of a single goal. Considerations about relational utility might also identify unexpected determinants of guilt. For instance, I would predict that people with a higher sense of self-efficacy would experience less guilt than people with lower self-efficacy as they probably feel less dependent upon their social relations. Some counterintuitive predictions can be made as well. For instance, people with more social relations at their disposal that may help in the attainment of personal goals are likely to feel less guilty over transgressions to any one of these relations than a person who has fewer relations, simply because the level of dependence on any particular social relation is higher if a person has fewer, rather than more friends. In sum, the relational utility construct, albeit hypothetical in nature, has both integrative potential in explaining, and generative potential in identifying, the impact of previously non-recognized determinants of guilt in interpersonal transgressions.

Reconciliation With Other Views of Guilt

The hypothesis that relational utility should affect the intensity of guilt experienced over social transgressions is not necessarily inconsistent with, but at the same time does not explicitly acknowledge other views of guilt and its determinants, such as appraisal-based views of guilt, guilt over norm violations that do not directly harm others, and moral views of guilt as an emotion that guards interpersonal relations and benefits society as a whole by enabling the adoption and adherence to a shared set of norms. This section sketches how the impact of relational utility can still be reconciled with these alternative approaches to understanding guilt.

First of all, I believe that the impact of relational utility has not surfaced in appraisal theories of guilt because most appraisal theories of emotion are mainly concerned with identifying the factors that differentiate one emotional experience (e.g., guilt) from another (e.g., shame) rather than with explaining more subtle differences in the extent to which people experience guilt in different occasions (Scherer, Schorr, & Johnstone, 2001; C. A. Smith & Ellsworth, 1985). So, in studying the antecedents of guilt, the prime focus of appraisal theories has been on perceptions of the preceding act that uniquely cause feeling of guilt (Ortony et al., 1988; Tangney & Dearing, 2002). It was revealed that guilt is elicited by negative evaluations of one's actions rather than of the self (Lewis, 1971; Tangney, 1991) and that guilt arises from the attribution of one's actions to efforts rather than abilities (Tracy & Robins, 2006). Other action-related appraisals that appear to affect the experience of guilt are whether or not the behavior involved a public or a private violation of a moral standard (R. H. Smith et al., 2002) and whether or not the behavior involved the violation of a prescriptive (approach) or a proscriptive (avoid) moral standard (Olthof, Ferguson, Bloemers, & Deij, 2004; Sheikh & Janoff-Bulman, 2010). When the focus is on differentiating one emotion from another, the impact of such appraisals about the nature of the preceding transgression will account for most of the variance in subsequently experienced feelings of guilt.

Still, determinants of relational utility may refine appraisal models that seek to account for differences in the intensity of guilt over particular transgressions toward different people. Many researchers emphasize that emotions are social phenomena that mainly occur between people and affect their ongoing relations (Fischer & Manstead, 2008; Parkinson, Fisher, & Manstead, 2005; Tiedens & Leach, 2004; Van Kleef, 2009). Yet, few have structurally included social relations at any point in the process of emotion elicitation and expression (Fischer & Van Kleef, 2010). With the recognition that relational utility moderates the experience of guilt over particular social transgressions, the present findings may contribute to appraisal theories of guilt by identifying an important "social appraisal" (cf. Fischer & Manstead, 2008) underlying the experience of guilt.

Second, although it seems that most instances of guilt are experienced in interpersonal transgressions (Baumeister et al., 1994), people may also experience or anticipate guilt over moral transgressions that do not cause harm to any particular person (Olthof et al., 2004; Sheikh & Janoff-Bulman, 2010; R. H. Smith et al., 2002; Zeelenberg & Breugelmans, 2008). This seems to imply that guilt can be experienced even in the absence of any relational utility. Still, I believe that the possibility to feel guilty in the absence of direct interpersonal harm need not be at odds with the present findings for two reasons. For one, whether or not the relational utility hypothesis also has relevance to guilt concerning norm violations with no direct consequences for others is an empirical question. It might well be the case that the extent to which people experience feelings of guilt over certain norm violations depends on the relational utility of the social group (rather than the individual) that supports the norm.

The other reason why guilt in the absence of direct interpersonal harm does not contradict the impact of relational utility on guilt over interpersonal transgression, is related to the fact that both instances of guilt relate to distinct functions of guilt that appear at different levels of analysis (Keltner & Haidt, 1999). Specifically, the impact of relational utility follows from the individual-level function of guilt as an adaptive mechanism that ensures the long-term benefits of mutually rewarding social interactions. The fact that guilt can also be experienced over transgressions without direct harm to others follows from the group-level function of guilt as a moral emotion that is elicited by concerns for others rather than the self (e.g., Haidt, 2003). At the level of the social group guilt undeniably has the additional beneficial consequence of enabling the adoption of shared moral standards (e.g., Ausubel, 1955; Frank, 1988; Freedman et al., 1967; Haidt, 2003; A. Smith, 1759; Tangney et al., 2007; Wong & Tsai, 2007). The moderating influence of relational utility, which obviously reveals a self-interested side of guilt, may seem at odds with extant views of guilt as a moral emotion. However, I believe that this dual function of guilt can be readily explained by recent insights in multi-level selection processes (e.g., Nowak, 2006; Sober & Wilson, 1998).

From a multi-level selection perspective, group-level benefits are emergent properties of individual level adaptive mechanisms. In other words, whereas guilt may have originally evolved for its benefits at the individual level, groups of individuals that were more efficient at recruiting the individual capacity for guilt to coordinate social behavior in accordance with situation-dependent norms for (un)desirable conduct would have had a selective advantage over groups that did not foster the capacity of guilt to regulate individual behavior at the group level. Acknowledging the ultimate self-interested nature of guilt, then, does not contradict its emergent moral properties at the level of the group but may allow for a better understanding of the conditions under which moral effects are likely to occur and helps to identify situational factors that cause moral behavior to break down.

Implications

This is undoubtedly a more callous view of guilt and the facets of human relations that are governed by its experience than is commonly adhered to. Still, I believe that this insight lends credit to certain ways of promoting prosocial exchange between people that would not have emanated from the strict adherence to the view of guilt as a moral emotion. I would predict that people will be more committed to take the concerns of others or the group or even society in general into account to the extent that they foresee this to be in their self-interest. Hence, increasing efforts in romantic relationships, offering employee development programs in business relationships, and providing stable systems of social security in a society will be beneficial strategies—not just because they make it more attractive for people to be a part of a relationship, organization, or community but also because they will make peo-

ple more reluctant to take advantage thereof. This contradicts rational economic models, which often assume that, save the implementation of sanctioning systems, people will be seduced into social loafing as the benefits thereof become more attractive. The present perspective would predict otherwise.

Conclusion

Feelings of guilt over a social transgression toward another person depend on the relational utility of that person, which is defined as the utility of that person for the attainment of personal goal(s) through social interaction. By showing that relational utility moderates the experience of guilt over social transgressions, the present studies support the presumed individual level function of guilt.

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