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FIGURE 1 **.** Each trial began with a fixation and then a cue indicating which partner was paired with the participant for the current trial. The participant was told that his/her partner had to quickly estimate the number of dots on the screen by pressing a corresponding button to indicate whether his/her estimation was more or less than a number (randomly chosen from 19, 20, and 21) which appeared on the next screen. The outcome of the estimation (correct versus incorrect) was communicated to the participant on the next screen. After a correct performance, the partner received 100 monetary tokens as a reward and the next round began. After an incorrect performance, the participant was threatened with the possibility of receiving noise stimulation, and the partner had the chance to choose from two compensation options: paying 100 tokens to the participant or bearing the noise for the participant. The partner's decision was communicated to the participant on the screen. Finally, the noise stimulation was delivered to the participant if his/her partner decided to pay money, or to his/her partner if the partner decided to bear the noise stimulation for the participant.

noise) was used in the following analysis. The participant's perceived closeness (or social distance) with respect to each of the two partners was measured with two questions ("to what extent do you prefer your partner to be your roommate" and "to what extent do you prefer your partner to be your friend") adapted from Bogardus (1933)[1]

attitudes and tendencies. Moreover, due to the specific question we were interested in (i.e., how the preference of communal versus exchange way of social interaction influences social relationship and reciprocal behavior), we were not able to balance the sequence of our di erent tasks and surveys.

The Second Phase

In the second phase of the study (**Figure 2**), the roles of the participant and the partners were reversed; the participant was informed that the partners were not aware of the role-change until then. The participant was then told that in each round, his/her partner had to bear a pain stimulation if he/she (i.e., the participant) estimated incorrectly. The intensity of the electrical stimulation for the partner was randomly chosen from three levels (none/low/high) for each round of the game. The level of pain stimulation delivered to the partner in that trial was communicated to the participant. After pain delivery, the participant decided how many monetary tokens (between 0 and 100) he/she would like to transfer to the partner as compensation. Note, the participant could compensate the partner only by allocating money. The participant was also told that he/she would get 100 tokens as a reward (and the partner would not receive pain stimulation) if he/she made a correct estimation. Thus participant's account was always su cient to pay 100 tokens in each round. Unbeknownst to the participant, the feedback of the performance was predetermined. Specifically, there were 72 trials (36 for each partner) in the second phase of study. For the interaction with each partner, there were 18 rounds in which the participant responded correctly (fillers) and 18 rounds in which the participant responded incorrectly. For the latter rounds, there were six rounds in which the partners had to receive high pain stimulation, six rounds of low pain stimulation, and another six rounds of no pain stimulation. On average, the participant could make ¥45 (∼ $ 8; ¥40 for show-up and about ¥5 for bonus).

Before the participant left the lab, he/she answered a set of open questions such as "What do you think about your partners?" and "Do you have any suggestions for improving the interactive settings?" This was to make sure that the participant was not suspicious of our experimental setup. No participant expressed suspicion of the experimental setup or interactive nature of the game.

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In the first phase of the study, the participants showed large variability regarding with whom they preferred to form the social versus exchange relationship. To quantify this variability, we computed a score for exchange relationship preference by subtracting the perceived exchange relationship value for the social partner from that for the monetary partner. **Figure 3A** illustrates the distribution of this score over participants. The individual di erences most likely resulted from the participants'

FIG E 2 . Each trial began with a cue indicating which of the two partners had been chosen for that particular round. The next

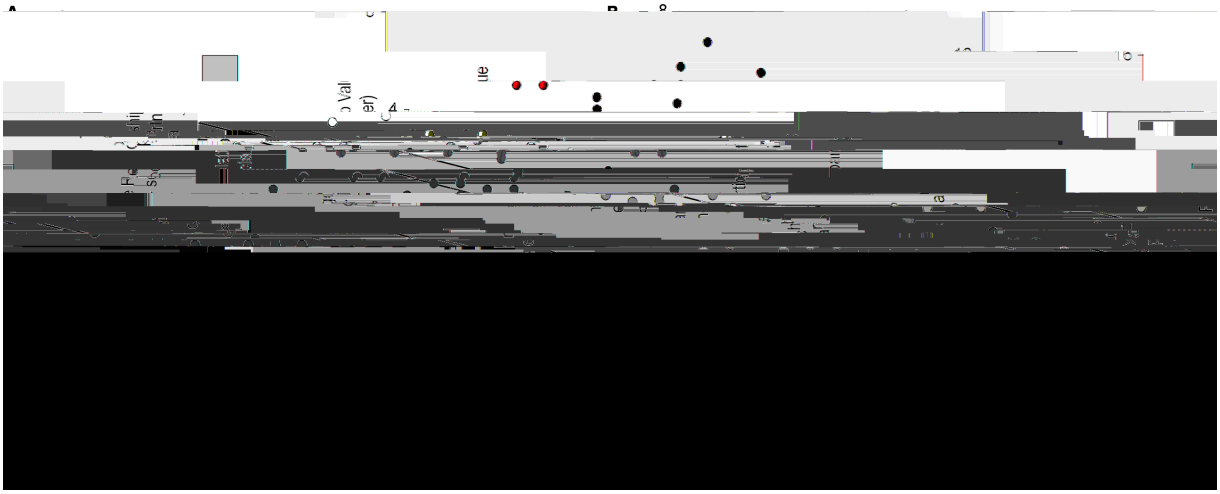

FIG E 3 I **). (A)** The frequency distribution of the difference in participants' exchange relationship value toward the monetary partner versus social partner. **(B)**

of compensation. However, di erent forms of compensation are not equally e ective for every individual in every social context. Here we showed that after being harmed, some people preferred to be compensated by money while others preferred non-monetary compensation, such as the transgressor sharing the harm. Moreover, the individual di erences in preference for compensation not only had an impact on the victim's perceived social distance toward the transgressors (participants felt closer to the transgressor whose compensation matched the their own preference) but also had an impact on the victim's subsequent reciprocal behaviors toward the transgressors. Compared with previous investigations into guilt and compensation (e.g., de Hooge et al., 2007, 2011; de Hooge, 2012; Yu et al., 2014), the current study contributes two novel findings: first, we distinguish two types of compensation (communal versus exchange) that are commonly used in di erent social contexts as well as two subgroups of individuals who prefer di erent compensation strategies; second, we go one step further to show how individuals' preference of certain way of compensation influences their own social relationship and reciprocal behaviors.

The progress made by the current study benefited from the interpersonal paradigm adopted here and in a few previous studies (e.g., Koban et al., 2013; Crockett et al., 2014, 2015; Yu et al., 2014). This paradigm has the strength of putting the participants in the social context and confronting them with the (ostensibly) real social consequences of their performance, choices, or decisions. The interpersonal paradigm allows us to investigate the psychological mechanisms of social emotions, interactions and relationships as they actually occur (rather than being limited to the participant's imagination). Moreover, it is natural and convenient to include social modulations, such as communal versus exchange norms, in the interpersonal paradigm to broaden our understanding of the regularity underlying complex social interactions (Schilbach, 2014). As hypothesized, our results suggest that the participants' preference of the manner of social interaction (e.g., communal versus exchange) did influence both their social relationships and reciprocal behaviors.

Monetary compensation is calculable and thus easy to precisely balance an inflicted harm. The downside is that money may readily trigger the monetary/exchange norm, which runs the risk of further dampening the social relationship (Heyman and Ariely, 2004; Ariely et al., 2008; L4(x)74(A)-4.8t10eu(ultsc [(o(ns)-492.50958 7.21266)2.(d)-3u(ultsi(or)-15TJ 0 g010.0674 0 TD35.0038

for this matching process? A possible explanation appeals to the individuals' self-verification motivation (

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