Interpersonal Effects of Emotions in Morally-charged Negotiations

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Abstract

The majority of research on emotion and moral decision-making has focused on the intrapersonal effects of emotion. However, witnessing and displaying emotional expressions is also known to play a significant role in the facilitation and coordination of our social interactions. In this work, we hypothesize that interpersonal emotions effect moral appraisals by prioritizing different moral concerns. We investigate the impact of facial displays of discrete emotions, specifically anger and sadness, in a morally charged multi-item negotiation task. The results of our experiment support our hypothesis that moral appraisals can be strongly affected by interpersonal emotional expressions. We show that displays of anger may backfire if one of the parties associates moral significance to the objects of the negotiation, whereas displays of sadness promote higher concession-making. Overall, we argue that emotional expressions can shift moral concerns within a negotiation in ways that can promote cooperation.

Keywords: Emotion, Sacred Values, Moral Decision-Making, Negotiations

Introduction

Recent research into emotion and moral decision-making reveals a consistent pattern. When confronted with possible threats to moral or sacred concerns, people tend to become emotional (e.g. Ginges et al., 2007), uncompromising (e.g. Tetlock, 2003), and act in ways contrary to traditional formalizations of rational self-interest (e.g. Atran, 2010). This article adds a bit of hope to this otherwise gloomy picture. Building on findings from both moral decision-making and the interpersonal effects of emotion, we show how emotion can sometimes foster cooperation rather than conflict. Our findings have potential important implications for negotiation and conflict resolution in sacred domains.

In this article, we build on the social-functional framework of emotions (Keltner & Haidt, 1999; Frijda & Masquita, 1994) which claims that different sociomoral concerns are prioritized based on the distinct emotions that are experienced (Horbeg, Oveis & Keltner, 2011). This theory argues that our perception of the permissibility of actions in moral situations is affected by the emotions experienced, as different emotions heighten the salience of different moral domains. For example, disgust has been linked to violations of purity-sanctity (Rozin, et al., 1999), and research shows that experimentally predisposing individuals to disgust increases their tendency to focus on purity related issues (e.g. sexuality) as opposed to other moral concerns such as justice (e.g. Tapias, Glaser, Keltner, Vasquez & Wickens, 2007). However, the research on emotion-related moral appraisals has been mostly limited to the intrapersonal effects of emotion in decision-making.

In contrast to research on moral decision-making, research on negotiation and conflict resolution has largely emphasized both the intrapersonal as well as interpersonal effects of emotion (Carnevale, 2008; Forgas, 1998). Work on interpersonal aspects of emotion argues that emotional expressions by one party can change how the other party construes and reacts to a situation. The evidence from this line of research suggests that cognitive emotional appraisals are not only antecedents of emotions experienced, but they may also follow from the perception of emotional expressions in others (Lerner, Han, & Keltner, 2007). For example, it has been widely documented that perceiving expressed anger during a course of a negotiation can elicit more concessions compared to other emotions (such as happiness) or no emotions at all (e.g. Van Kleef, De Dreu & Manstead, 2004a, 2004b, 2010; Sinaceur & Tiedens, 2006). These authors argue that anger communicates that a party has high aspirations and that concessions would be required from the other party to reach an agreement. The majority of these findings, however, rely on negotiations only involving issues that might be of interest to people but have no sentimental or moral significance to them (e.g. negotiating over the price of a cellphone and its duration of service). In this article, we build on these findings and show that interpersonal effects of emotion unfold somewhat differently in moral contexts.

Here, we investigate the impact of facial displays of discrete emotions, specifically anger and sadness, in a morally-charged multi-item negotiation task. We hypothesize that perceiving different emotional expressions in others can influence moral cognition by prioritizing different moral domains and shifting interpretive-frames. In other words, our interpretation of a moral issue can be subjected to the emotional expressions conveyed by other individuals involved in the negotiation. Anger is connotated with the prioritization of ethics of autonomy concerned with rights and justice (Rozin, et al., 1999), and sadness is linked to eliciting sympathy and heightening the salience of need, weakness and harm/care (Horbeg, Oveis & Keltner, 2011). We predict that when an object is perceived as a sacred (or protected) value (with intrinsic moral significance) (Tetlock,

2003; Baron & Spranca, 1997), angry or sad facial displays expressed by an opponent will have opposing effects on the behavior of individuals, as these emotions heighten different moral concerns. Recent work in social and cognitive psychology suggests that people with sacred values (SVs) tend to reject tradeoffs with other values (especially with secular ones) and will express anger when considering such tradeoffs (e.g. Tetlock et al. 2000).

We hypothesize that when facing angry opponents, SV participants (those associating moral significance to the item) will show the typical rejection of tradeoffs and concede very little, as their concerns about their sacred values will be amplified by the anger expressed in the other party. In other words, we predict perceiving expressed anger will back-fire for SV participants, that is, will lessen the likelihood of concession. However, when interacting with an opponent who displays sadness, concerns about need and care will become salient, and participants will concede more than SV participants in the anger condition. For non-SV participants we expect to see the known pattern of concession due to perceived anger consistent with findings of Van Kleef and others in non-moral domains (e.g. Van Kleef et al., 2004a, 2004b; Sinaceur & Tiedens, 2006).

We begin by discussing the negotiation task used in this study. Then we explain our hypotheses, and describe our experiments. We close with a discussion of our findings and its implications.

Sacred-Objects Negotiation Task

It has been argued that research on morally motivated decision-making relies heavily on a "narrow empirical base", in regards to subject populations as well as the stimuli used in experiments (Medin & Atran, 2004). The research populations used in these studies mostly consist of undergraduates at major research universities. And the scenarios and the stimuli materials used mainly focus on single-shot trade-offs scenarios where participants are asked about the permissibility of set hypothetical actions (e.g. killing one person instead of five). However, many real-life moral situations unfold over repeated interactions (which can sometimes span years), such as socio-political conflicts involving sacred values (e.g. Israel-Palestine conflict: Ginges et al., 2007; Iran nuclear conflict: Dehghani, et al., 2009, 2010).

In order to overcome some of the above shortcomings, we have recently developed a new web-based multi-round negotiation task involving a participant and an opponent (computer agent), where different objects are placed on a board and the participant and the agent take turns in taking ownership of some of the items and giving away the others (Carnevale et al., 2011) (Figure 1). Participants can move items around the board by grabbing them with a mouse and putting the items either on their own side or on the opponent's side. After each new proposal is extended by the participants, the agent evaluates the offer, expresses an emotional reaction to the offer and decides whether or not to accept the offer or propose a new offer. Participants can express emotional reactions at any point by choosing one the emotional facial displays at the bottom right corner of the screen (Figure 1).

Aspects of this task are easily configurable in order to consider a variety of experiment questions. In the context of this article, all items are initially placed in the middle section of the board and are up for grabs. The negotiation
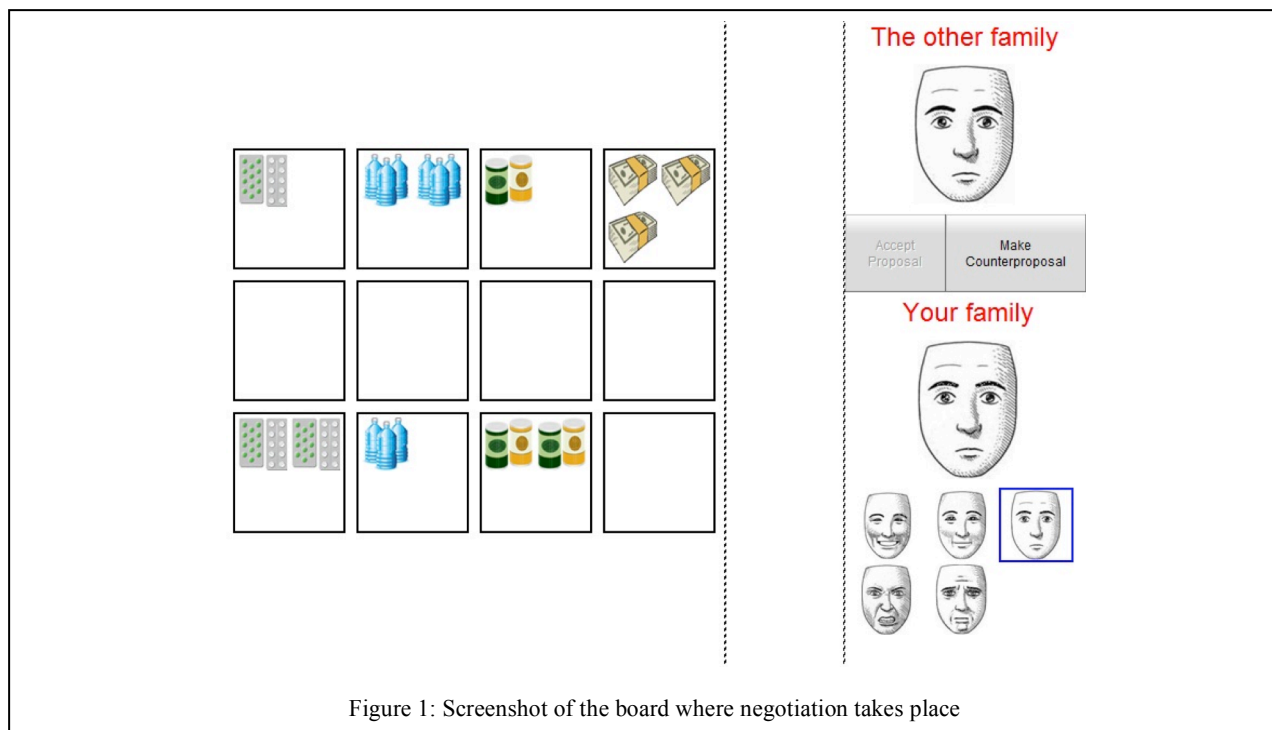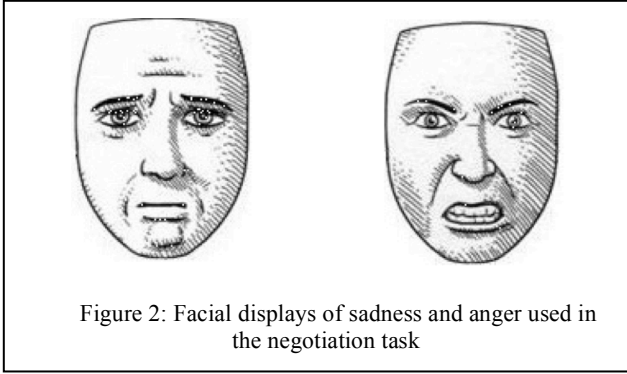

Figure 1: Screenshot of the board where negotiation takes place

Figure 2: Facial displays of sadness and anger used in the negotiation task

consists of 12 rounds with each player taking turns making or receiving offers six times. When a participant makes an offer, the computer opponent decides to accept or reject the offer based on a pre-programmed strategy unknown to the participant. If the opponent decides to reject the offer, it will make a new proposal that the participant can in turn accept or reject.

Agent Offers
All agents in this study follow the same strategy -- a fixed, non-contingent series of offers that has been designed to simulate resistance to tradeoffs involving sacred values. In pilot testing, most participants perceived this policy to be tough but plausible. There are four different groups of items involved in the negotiations (medicine, water bottles, food cans, money), with three items per group. The negotiation strategy of the agent is as follows ([medicine, water, food, money]): Round 2: [0, 0, 0, 0]; Round 4: [0, 0, 0, 1]; Round 6: [0, 0, 0, 1]; Round 8: [0, 1, 0, 1]; Round 10: [0, 1, 0, 1]; Round 12: [0, 2, 0, 2], where the numbers in the brackets represents how many items in each group the agent chooses to give to the participant. In the decision-making algorithm of the agent, the items are given the following qualitative payoff values: [50, 10, 5, 1]. These payoff values are only used for internal calculations and are not shown to the participants. The agent will accept a participants' offer if it has a higher or equal overall utility than the offer that the agent was about to make. Otherwise, it will reject it and make its next offer.

Agent Expressions
Agents follow one of two possible facial display policies depending on the condition. The angry agent follows a fixed, non-contingent policy, displaying anger on rounds 2, 6 and 10, and returning to a neutral face after five seconds (i.e., the policy is the same no matter what the participant offered). The sad agent follows the same policy but displays sadness rather than anger. Figure 2 illustrates the expressions. In all other rounds, both agents display a neutral face (Figure 1).

Experiments

In the following experiment we investigate the interpersonal effects of angry and sad facial displays in the sacred-objects

Imagine the following hypothetical scenario:
There has been an earthquake in the town you live in and many have been injured. All roads to your town have been blocked and as a result aid is coming in very slowly. Because of this every family has to split packages of aid sent using helicopters with another family.

You and the family that have to split the aids with each other, both have babies who have [A: been injured and have developed infections] [B: have caught minor colds]. [A: The only way to control the spread of infection, which if not stopped will become lethal, is to use penicillin] [B: In order to relieve the cold you can give your child acetaminophen]. You are also running low on food, but have enough clean water that would last you for several days. All the shops in the town are closed, so it is uncertain whether you can use the money to purchase goods.

Given the circumstances, you know that no other aid package will be received for another week. The aid packages include medicine including [A: penicillin] [B: acetaminophen], canned food, some money and water bottles.

In the task that follows, you have to negotiate how these items have to be split between your family and the other household. You do not know how much food and water the other family has.

The negotiation is done in a sequence of alternating offers. You will make the first offer. The other negotiator may or may not accept your offer. If it does not accept it, that is, if it rejects your offer, it will send you a new offer. You can either accept or reject its offer. If you accept it, you will get to keep the items that you did not give them. If you reject their offer, you can make another offer and submit it to them. If after 12 rounds there is no agreement, the negotiation will end in no agreement. In this case, you both will only receive one of each item and the rest will be given away.
Try to get as many items as you can.

Figure 3: Participants were presented either with scenario A (deadly-infection) or scenario B (minor-cold)

task discussed in the previous section. Similar to other negative emotions, both anger and sadness serve as calls for adjustment of behavior (Van Kleef et al., 2004). Anger, which is the most common emotion in conflict situations, signals potential confrontation (Allred, 1999) and is related to the ethics of autonomy concerned with rights and justice (Rozin et al., 1999). On the other hand, the hypothesized communicative function of sadness, especially when combined with tears, is to elicit sympathy, signal appeasement, indicate a social need for help and to prioritize the salience of need, harm and care (Shariff & Tracy, 2011; Hasson, 2009; Tiedens, 2001; Horbeg, Oveis & Keltner, 2011). As discussed previously, we hypothesize that perceiving different emotional facial displays in others would prioritize different moral domains and affect moral decision-making. Therefore, we expect that the participants' moral appraisals would be influenced by the angry or sad emotional expressions displayed by the agent during the negotiation. We specifically predict that participants who view an object of the negotiation as a sacred value would show the typical rejection of tradeoffs seen in SV

participants (e.g. Tetlock et al. 2000) but only when they interact with the agent displaying anger. On the other hand, SV participants interacting with the sad agent would concede significantly higher than SV participants interacting with the angry agent. Moreover, the backfiring effect of anger should only be seen for participants who perceive the negotiation object as sacred.

Participants

Two hundred and fourteen American Amazon-Turk workers (age: 33.71, gender: 56% female) were paid $1 each to participate in our study. On average it took each worker 6 minutes and 16 seconds to complete our task.

Design

The study employed a between subject 2 X 2 X 2 full factorial design, where the first factor was agent's expressed emotion (anger/sadness), the second factor was the experimental scenario (deadly-infection scenario/minor-cold scenario, Figure 2), and the last factor was whether or not participants held a SV for the medicine package. After reading one of the two scenarios described in Figure 3, we assessed participants' values regarding the medicine package using Baron and Spranca's (1997) measure. In accordance with this measure we asked our participants: "How do you feel about giving up the medicine package?", and they were provided the following four choices to choose from:

a. I think this definitely needs to happen.

b. I do not object to this.

c. This is acceptable only if the benefits of trading the medicine are great enough.

d. This shouldn't be done no matter how great the benefits are.

Participants who answered "d" were categorized as holding a SV for the medicine package. Participants then played the Sacred-Objects task as described in the last section.

Results

Participants who dropped out of the negotiation before Round 4 (made only one or two offers and were exposed to the emotional displays of the agent only once) were excluded from the analysis ($N = 21$). From the participants who read the deadly-infection scenario, 62.77% ($N = 59$) perceived the medicine package as a sacred value, compared to 44.44% ($N = 44$) in the minor-cold scenario ($\chi2$ (1 , $N = 193$) = 5.7884, $p = 0.0161$). However, the scenario manipulation did not have an effect on the course of the negotiation and there was no difference in participants' responses and offers between the two scenarios. Therefore, for the rest of the analysis we combine the data from the two scenarios into one condition.

We examined demands for the items through the course of the negotiation (Figure 4). As predicted, SV participants conceded less on medicine than Non-SV participants throughout the negotiation (Demand 1: $t(191) = 2.8485$, $p = 0.0292$; Demand 2: $t(191) = 5.1783$, $p < 0.0001$; Demand 3:
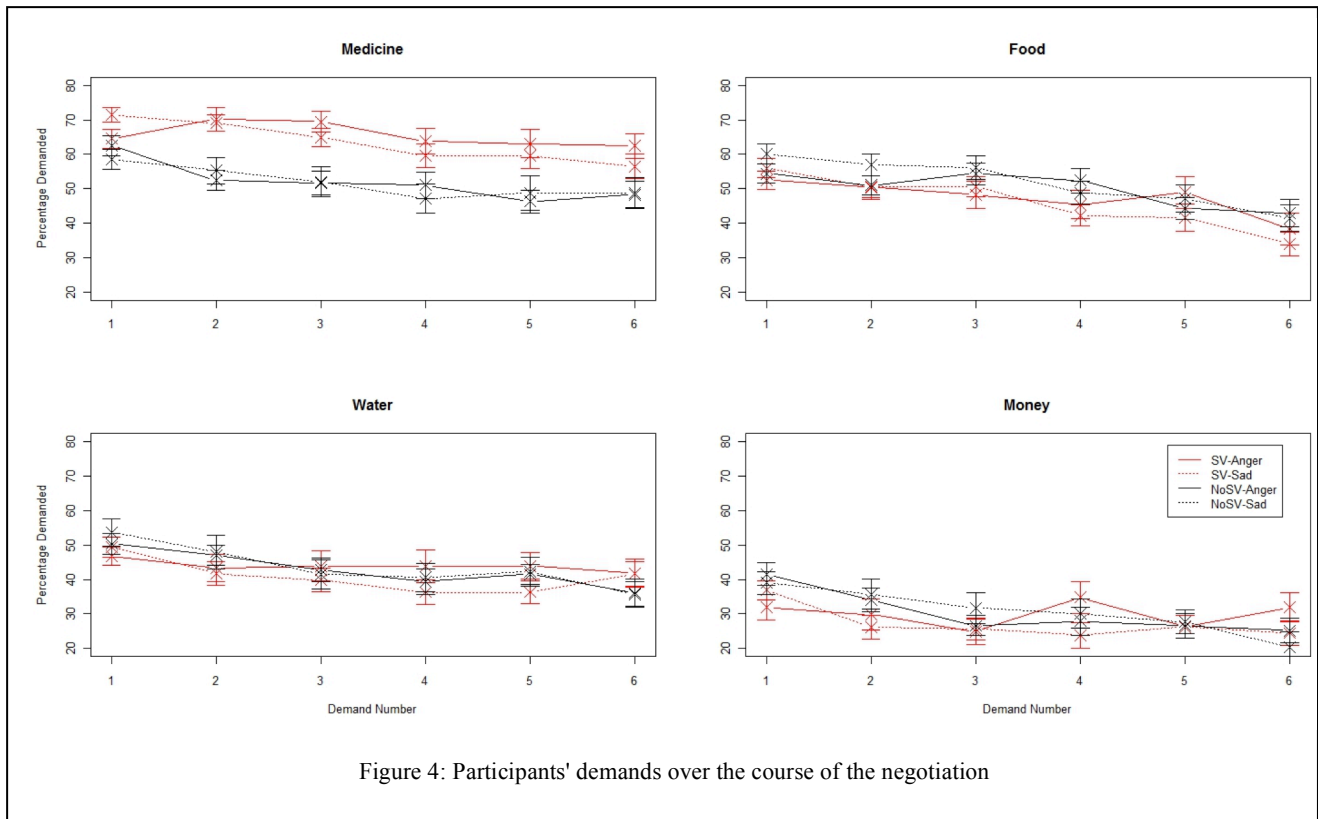

Figure 4: Participants' demands over the course of the negotiation

$t(191) = 4.5055$, $p < 0.0001$; Demand 4: $t(191) = 3.2353$, $p = 0.0086$; Demand 5: $t(186) = 3.7789$, $p = 0.0013$; Demand 6: $t(185) = 2.8966$, $p = 0.0254$; p-values have been adjusted for multiple comparisons using Bonferroni correction). Corresponding effects were not obtained for the non-sacred objects (water bottles, food cans, money). Repeated measures ANOVA with Greenhouse-Geisser correction, with proposal round number as the within-subjects factor, and SV/NoSV and displayed-emotion as between-subjects factors, determined an overall main effect of time ($p < 0.001$) for all the four objects, and an interaction between time, SV/NoSV and agent's emotion for medicine ($F(4.585, 839.99) = 2.082$, $p = 0.053$). Again, corresponding effects were not obtained for the non-sacred objects.

To further analyze the differences in concession rates between the groups for different items, we used demand difference (number of packages in the first offer deducted from last offer) for medicine as a dependent variable in a 2 X 2 ANOVA where the first factor was the displayed emotional reaction (sadness/anger) and the second factor was the presence or absence of sacred values. For medicine, there was a significant interaction between SV and the agent's displayed emotion ($F(1,189) = 4.7615$, $p = 0.0303$) (Figure 5). As predicted, SV participants who interacted with the sad agent conceded significantly higher than SV participants who interacted with the angry agent ($t(101) = 2.3809$, $p = 0.0191$). Interestingly, SV participants who interacted with the angry agent conceded much less on medicine than Non-SV participants interacting with the same agent ($t(94) = 2.1191$, $p = 0.0367$).

Given that the trends of negotiation for the rest the objects were similar, we combined them into a single group called non-sacred objects. A 2 X 2 ANOVA (SV/NoSV X AngryAgent/SadAgent) with average demand difference for non-sacred objects as the dependent variable, revealed a significant main effect of SV/NoSV, where SV participants conceded less ($F(1,189) = 3.8550$, $p = 0.0511$), and a main effect of agent's emotion, where displayed sadness induced more concession ($F(1,189) = 3.8915$, $p = 0.0499$). There was no interaction between SV and Agent's emotion for the non-sacred objects.

We also analyzed the participants' expressed emotion throughout the length of the negotiation. A planned comparison revealed that the difference in expressed anger between SV participants who interacted with the angry agent and non-SV participants interacting with the same agent was marginal ($t(86) = 1.2613$, $p = 0.1053$, one-tailed). Also, another planned comparison showed that SV participants who interacted with the agent that displayed sad facial expressions, expressed more sadness than SV participants who interacted with the angry agent ($t(93) = 1.6826$, $p = 0.0479$, one-tailed).

Discussion

Our experiment shows that there was an overall concession over time for all items. However, for the medicine package, the amount of concession made by participants depended on
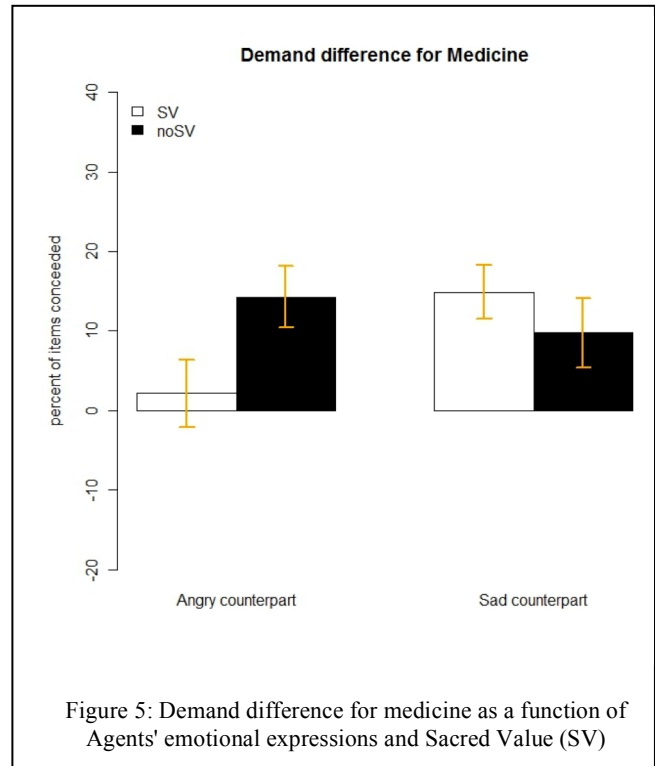

Figure 5: Demand difference for medicine as a function of Agents' emotional expressions and Sacred Value (SV)

whether they viewed the item as sacred and the agent's displayed emotion. As predicted, SV participants who interacted with the agent that displayed anger made significantly smaller concessions compared to SV participants who interacted with the sad agent. This finding supports our hypothesis that not only are moral concerns prioritized based on experienced intrapersonal emotions (Horbeg, Oveis & Keltner, 2011), but interpersonal emotions also affect moral appraisals by heightening different moral concerns. Specifically, we had predicted that witnessing sad facial displays would affect the decision-making of SV participants, by heightening the salience of need, weakness and harm/care (Horbeg, Oveis & Keltner, 2011). On the other hand, SV participants interacting with the angry agent showed the typical rejection of tradeoffs, as witnessing anger expressions amplified their concerns about their sacred values. Interestingly, consistent with findings of Van Kleef and others in non-moral domains (e.g. Van Kleef et al., 2004a, 2004b; Sinaceur & Tiedens, 2006), anger expressions for non-SV participants resulted in higher concession rates.

Overall, the contribution of our work is two-fold. First, our result emphasizes that moral appraisals can be strongly affected by interpersonal emotional expressions of other parties. Second, we showed that expressing anger may not be the best strategy to achieve higher concession rates in negotiation. Our result demonstrates that displays of anger may backfire if one of the parties associates moral significance to the objects of the negotiation. Displaying sadness was found to be a far more effective strategy to elicit concessions from the other party.

Sacred values play important roles in many cultural and political conflicts (e.g. Ginges et al., 2007; Dehghani et al., 2009, 2010). In this work we argued that moral concerns can be shifted within a negotiation in ways that promote cooperation and concession-making. One real-world implication of our research is that in negotiation involving sacred values, displaying anger and aggression might backfire, in the sense that it will result in conflicts to escalate and anger to reciprocate. However, non-aggressive and non-confrontational signals may result in better outcomes and larger concessions in these circumstances.

Acknowledgments

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