

How Does Guilt Decay? the Effect of Rationalizations on Prosocial Behavior

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Abstract

Guilt, a negative self-conscious emotion, has been proven to motivate reparative behaviors in oneself as well as in interpersonal relationships. However, guilt decreases over time and there is little evidence on what cognitive process is involved in the decaying of guilt, and how it will affect subsequent behaviors. Thus, the present study examined if rationalization took part in the decaying process. In addition, we investigated whether people would react to the decision about conducting prosocial behavior afterward. Guilt was elicited through a challenging brainteasers game and participants were randomly assigned into three conditions (Denial of Responsibility, Social Norms, Control) to either rationalize their behavior or do a memory task. After that, participants were asked if they were willing to help their partner in the room, and if so, how many more trials would they be willing to complete. We found that people who did a memory task in the control condition had less guilt than their counterparts in the rationalization conditions. In addition, there was no significant difference between the decreased guilt level in the denial of responsibility and social norms conditions. Finally, the study showed that there was a significant correlation between guilt level and the willingness to help others. The findings demonstrated that rationalization after misdeeds can backfire and prevent the natural decay of guilt.

Introduction

How would you feel if you accidentally damage a priceless piece of art in the museum? Nick Flynn, a man in 2006 who tripped over his shoelaces and accidentally knocked over three ancient vases that worth about \$225,000 in Fitzwilliam Museum, noted his experience as “Although I knew the vase would break I didn’t imagine it would be loose and crash into the other two. I’m sure I only hit the first one and that must have flown across the windowsill and hit the next one, which then hit the other, like a set of dominos. I can say with my hand on my heart that it was not deliberate...” As one of the many in the world who made mistakes unintentionally, Nick still confessed that he felt guilty and truly sorry about what happened. Guilt, one of the basic emotions that play an important role in human’s daily life, is often elicited by undesirable events, causing stress both physically and mentally. Despite its unwelcomeness, guilt, along with the emotions of shame and embarrassment, serves as an alert to oneself, therefore motivating people to change their behaviors and thoughts. Due to its nature that involves a sense of self-reflection, guilt is defined as one of the self-conscious emotions (Tracy & Robin, 2004). The self-reflection of guilt encourages people to repair their misdeeds. (Keltner & Buswell, 1997).

Guilt and reparative behavior

People are driven by guilt to fix their mood and their behaviors in order to prevent similar aversive situations in the future (Baumeister, Stillwell, & Heatherton, 2007). Past research of guilt has indicated that one would resolve his/her negative feeling by directly addressing the source of guilt and fixing the mistake. However, this might not always be possible. Consider the case of Nick Flynn, he might want to repair the vases that he broke, but it is not feasible because

the museum would not allow a visitor to repair the precious vases. Under conditions like this, people might seek to resolve their guilt feelings in other domains (Allard & White, 2015). For example, Nick Flynn might carry out behaviors like donating money to charity or exercise (Ketelaar & Au, 2003). Research evidence has shown that the cross-domain effect of guilt is also correlated with behaviors such as emotional eating or shopping (Bybee et al. 1996; O'Guinn and Faber 1989). In addition, the reparative function of guilt can trigger a desire to elevate oneself to meet important values and self-standards. Hofmann and Fisher (2012) demonstrated that guilt increases self-control when people encounter the same temptation in the future.

Guilt as a social emotion

The motive to repair wrongdoings is an internal, cognitive process that exists within a person. However, the reparative function of guilt does not only limit to internal self-change: guilt is also a social emotion as it prompts us to repair interpersonal relationships (Baumeister, Stillwell, & Heatherton, 1994). As Keltner and Buswell (1997) suggested, guilt emerges when there is a need to complete complex social goals such as to maintain or enhance status or to prevent group rejection. Thus, guilt might stimulate behaviors such as apologizing or confessing mistakes.

Research also shows that guilt can facilitate prosocial behaviors such as volunteering or cooperating in the bargaining game (Tangney & Dearing, 2002). In a study conducted by Leith and Baumeister (1998), guilt-prone participants were better at perspective taking when they were asked to write down an experience of interpersonal conflict both from their own perspective and the perspective of the other person. This study demonstrated that guilt can be crucial in producing positive relationship outcomes just like the emotion of empathy. Further supporting

this result, Lickel and his colleagues (2005) tested vicarious guilt, which is the guilt that is induced by another's wrongdoing. They discovered that one's interdependence with the transgressor predicted vicarious guilt. Their finding corroborated the interpersonal aspect of guilt. Moreover, guilt can promote cooperation within a group for the reason that non-cooperative individuals will use this negative affect state as an "information" of their future cost when taking an uncooperative strategy, therefore forcing them to coordinate with each other (Au & Ketelaar, 2003).

The decaying process of guilt

Emotions exist temporally and relationally within social situations. Guilt, as one of the emotions, exhibits a dynamic pattern as it peaks immediately after a behavior and declines as time passes (Macht & Dettmer, 2006; Ramanathan & Williams, 2007). The existing research framework on how guilt decays suggests that guilt goes through two phases as it decreases: interruption and reparation. Guilt will interrupt the ongoing action of the transgressor, reduce the desire of continuing the action, and therefore suppress further negative behavior (Duke & Amir, 2018). Thus, guilt should mount shortly after a behavior, causing interruption, and then generate the intention to repair transgression. However, the idea to repair is not permanent since guilt decays over time. According to Ferguson, Olthof, and Stegge (1997), guilt that was reported one day later after misdeeds was significantly lower than guilt that was measured instantly after misdeeds.

The decline of guilt can be explained both by the physiological and psychological processes. It can be seen as a natural response to attenuate guilt back to the homeostatic baseline in the paracingulate dorsomedial prefrontal cortex (Wagner, N'Diaye, Ethofer, & Vuilleumier,

2011), as well as a progress to reduce the guilt results from the discrepancy between a current self-state and goal state (Tracy & Robins, 2004). The cognitive dissonance that rises from transgression drives individuals to rationalize their problematic act (Fointiat, 1998). Wrongdoers might start with the introspection of themselves and then proceed to rationalize their behavior either in a conscious or unconscious manner. They would also try to regulate their emotion to reevaluate the underlying meaning of the event in order to reduce its emotional impact. Miceli and Castelfranchi (1998) proposed denial of responsibility as a cognitive defense against the feeling of guilt. By adjusting perceived personal control for the wrongdoing, people that use denial of responsibility can use thoughts such as “I didn’t mean to do it”, “I couldn’t have foreseen it”, and “It served him or her right” to reduce the negative feeling of guilt. Further supporting this idea, Yi and Baumgartner (2010) discovered that consumers impulsive buying tendency is positively associated with the frequency that they used coping strategies such as denial and blaming others, meaning that the more impulsive shopping they have done, the more denial of responsibility would they adopt as a mechanism to cope with guilt.

Another rationalization strategy that could possibly take place in the decaying process of guilt is changing self-standards. When one fails to meet a standard that is important to the self, failure would become salient and therefore trigger the feelings of guilt (Allard & White, 2015). More specifically, guilt is associated with the violation of the person’s own sense of morality or justice (Higgins, 1987). Research found that guilt can activate a general desire to improve oneself to meet other important self-standards (Allard & White, 2015). However, the discrepancy between one’s moral principle and the reality can also be resolved by social norms. Self-standard can be influenced by the social group so that it can fulfill a person’s need for social

approval (Abrams & Hogg, 1990). Therefore, people change their self-standards to fit into the group by rationalizing what is considered “normative” in the group.

The Present Study

Past research tests how guilt influences subsequent behaviors at its peak, that is, how guilt motivates people to repair their misdeeds when they feel the worst (Allard & White, 2015; Au & Ketelaar, 2003;). However, guilt decays over time. Accordingly, the motivation to repair will not last long. Few studies have discussed what exactly happened in this decaying process and whether it would produce the same behavioral consequences as when guilt peaks. Some researchers proposed that people might rationalize to solve the cognitive discrepancy that ultimately leads to guilt. Nevertheless, it is still not clear how people perform this rationalization: what aspect of the guilt appraisal do they re-evaluate? The goal of this present study, therefore, was to investigate if different rationalization strategies would aid the decaying process of guilt, and whether they would affect how people make prosocial decision. We proposed that denial of responsibility would help people reduce their guilt, and correspondingly they were less likely to help others afterward. The logic was that denial of responsibility acts as a defensive strategy to neutralize feelings of moral obligation in the situation of behavioral choice, thus undermining the impact of internalized values as motivations of helping behavior (Schwartz & Howard, 1980). Apart from including denial of responsibility as a scheme of rationalization, we also predicted that lowering self-standards by comparing with social norms would also serve as a rationalization approach to reduce the cognitive dissonance, therefore reduce the guilt. We expected that people who rationalized based on social norms would be less likely to help others when they believed that others had done the same. Moreover, though we expect that both denial

of responsibility and social norms will reduce guilt effectively, we postulated that these two strategies will not produce the same emotional outcome since denial of responsibility is based on resolving conflict from the inside, whereas comparing with social norms is about changing standards from the outside, that is, based on what other people have done.

Therefore, the formal hypotheses of this study are as follows:

Hypothesis 1: Individuals will exhibit less guilt after rationalization than individuals in the control group, and therefore are less willing to help others.

Hypothesis 2: There will be a difference of guilt level between denial of responsibility condition and social norms condition.

Hypothesis 3: The willingness to help is predicted by the level of guilt after rationalization/control: the less guilt is, the less willing to help.

Method

Participants

260 undergraduate ($M_{age} = 21^1$, $SD_{age} = 2.17$, 36% female) students at University of California, San Diego participated in the study in exchange for course credit. Participants were recruited through the university SONA system and completed the experiment on Qualtrics. Seven participants were removed from analysis due to task incompleteness. Therefore, 253 participants were included for data analysis.

Procedure

The effect of rationalization was assessed across two levels: denial of responsibility and social norms. A control condition was added to the experiment as a comparison to the rationalization conditions (i.e. denial of responsibility and social norms).

¹ One participant mis-typed the age so his/her age wasn't included, but the data is retained.

At the beginning of the experiment, participants were told that they would be paired up with another participant in the room, who in fact did not exist, and their performance in the task would have a consequence on their partner's experience. Participants then selected their partner by choosing a SONA ID from a drop-down list. After that, participants filled out the Positive and Negative Affect Schedule (PANAS) (Watson, Clark, & Tellegen, 1988), which is comprised of ten positive emotions and ten negative emotions, including guilt. Participants were instructed to rate their emotions on a five-point scale, where 1 indicates "Very slightly or not at all" and 5 indicates "Extremely". Having a scale consisting of multiple emotions not only can provide a comprehensive understanding of participants' current emotional states but also can let the participant be unaware of what emotion the study was testing. The measurements taken from PANAS here served as a baseline and would be compared to other measurements at a later point. Participants then completed a game with ten extremely challenging brain teasers, with each brainteaser presented for only 15 seconds (for details see appendix). As a result, it was almost impossible for participants to identify correct answers within a limited time. After they completed all the brain teasers, participants were asked to write down their feelings regarding this game. Participants were told later that among ten brain teasers they completed, they got five wrong, which was below average. Therefore, their partner in this room would have to do twenty brain teasers while listening to annoying high-pitched noise. In order to maximize the guilt that participants experienced, we asked participants to put on their headphones to hear the noise clip that their partner would be listening to. All participants filled out PANAS again, which would serve as a post-game measure, and would be compared to the baseline to assess if the game

induced guilt effectively. Then participants were randomly assigned to one of the three conditions (Denial of responsibility, Social Norms, Control).

In the Denial of responsibility condition, participants were directed to the rationalization prompt that states “Sometimes, people behave in a way that causes harm to another person, but after some thought, they realize it wasn't their fault. Please think about the fact that your performance caused someone else to have to listen to the unpleasant sound. In the space below, can you list some reasons why it is not your responsibility/fault after all?” Participants were given one minute to rationalize.

In the Social Norms condition, participants were directed to the rationalization prompt that reads “Sometimes, people behave in a way that causes harm to another person, but after some thought, they realize they are not alone. Please think about the fact that your performance caused someone else to have to listen to the unpleasant sound. As it turns out, only a few people are very good at the visual brain teasers game, and most participants in this lab study do not perform well, even given unlimited time. In the space below, can you list some reasons to justify your behavior?” Same as the Denial of responsibility condition, participants were given one minute to write down their responses.

In the Control condition, participants were asked to memorize twenty words in 30 seconds. Then they were asked to try to recall as many of the words as they could in 30 seconds. The intention of the control condition was to retain participants' guilt feeling to serve as a basis of comparison to other two conditions, as research shows that simple cognitive load can make people stay consistent when they are trying to cope with negative emotions (Drolet & Luce, 2004).

Lastly, all participants completed PANAS after manipulations. The self-report data taken from this PANAS would be used as a post-manipulation measurement to compare with the post-task measurement to see if the manipulation affect guilt. Then they were told that they could help their partners by completing some of the twenty brain teasers that their partners had to do. Every brainteaser they complete was one less brain teaser their partners need to complete while listening to the annoying sound. Then they chose the number of brain teasers they would be willing to do for their partners. The dependent variable, therefore, was the difference between the post-game PANAS and post-manipulation PANAS as the difference represents the change of the emotions after rationalization/control.

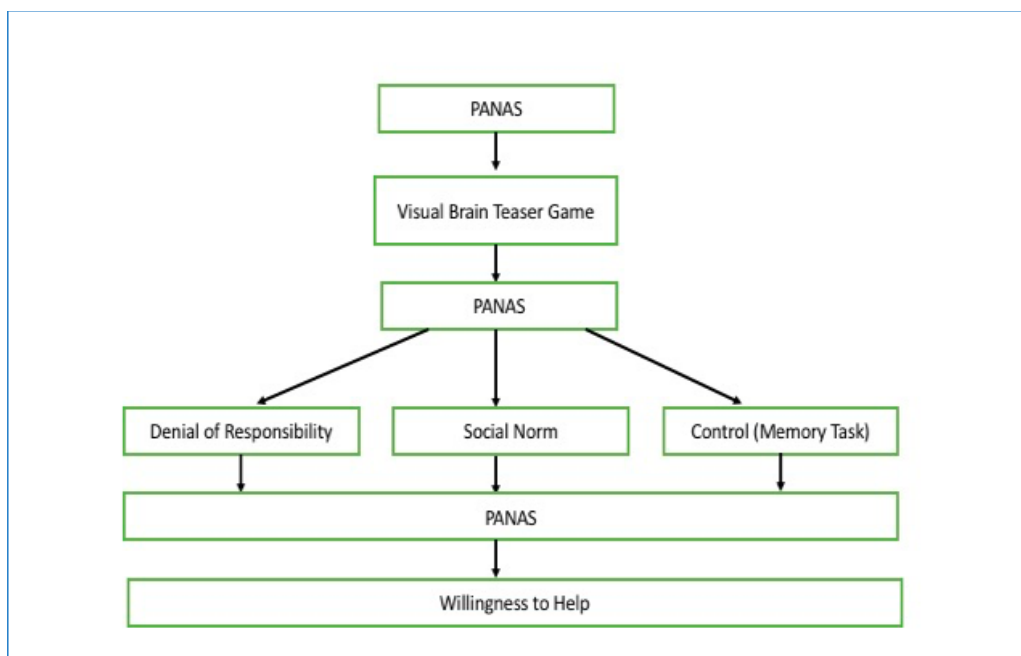


Figure 1. Experiment Methodology

Result

Manipulation Checks on Emotion Induction

To explore whether the visual brain teaser game induced negative emotional arousal as intended, we examined emotion self-report data from baseline PANAS and post-game PANAS.

Paired-Sample t-test analysis of the emotions confirmed that this game elicited higher levels of negative emotions than positive emotions. Specifically, the emotion of guilt increased after the game, meaning that the game successfully induced a sense of guilt among participants. In addition, the emotions of upset, guilty, hostile, irritable, ashamed, jittery, and distressed increased after game. The emotions of interested, inspired, excited, determined, attractive, active, strong, enthusiastic, proud and alert decreased after the game. No significant difference between scared and afraid (see Table 1).

Emotions	Distressed	Upset	Guilty	Hostile	Irritable	Ashamed	Jittery	Afraid	Proud	Scared
	+0.18	+0.63	+0.73	+0.17	+0.20	+0.49	+0.21	+0.09	-0.38	-0.04
Emotions	Enthusiastic	Strong	Excited	Alert	Inspired	Nervous	Determined	Attentive	Active	Interested
	-0.47	-0.49	-0.48	-0.17	-0.22	-0.12	-0.51	-0.47	-0.45	-0.64
+ indicates increased, - indicates decreased										

Table 1. Emotions change between Baseline and Post-Game.

Hypothesis 1: Rationalizations VS. Control

To test the hypothesis that people in rationalization conditions (Denial of Responsibility, Social Norms) would show less guilt than the control condition, we conducted an independent samples t-test. Participants in the rationalization conditions ($M = 2.28$, $SD = 1.15$) did not show significantly less guilt than participants in the control conditions ($M = 1.94$, $SD = 1.16$). In fact, participants in the control condition had a significantly lower level of guilt after they completed

their memory tasks, compared to participants who rationalized their behaviors, $t(251) = 2.28$, $p < 0.05$.

Hypothesis 2: Denial of Responsibility VS. Social Norms

We predicted that different ways (denial of responsibility, social norms) of rationalization would affect guilt differently. More specifically, we proposed that there would be a difference of guilt level for people in the denial of responsibility condition, compared to people in the social norms condition since denial of responsibility targets at reconciling the internal conflict within oneself, whereas social norms is based on comparing one's behavior with the majority. After controlled for guilt level at baseline, three conditions did not differ significantly in the post-rationalization guilt; $F(2, 249) = 1.87$, $p = 0.16$. Specifically, there was no significant difference between the denial of responsibility condition ($M = 0.08$, $SD = 0.89$) and social norm condition ($M = -0.05$, $SD = 0.84$); $t(250) = 0.41$, $p = 0.68$ (see Figure 2).

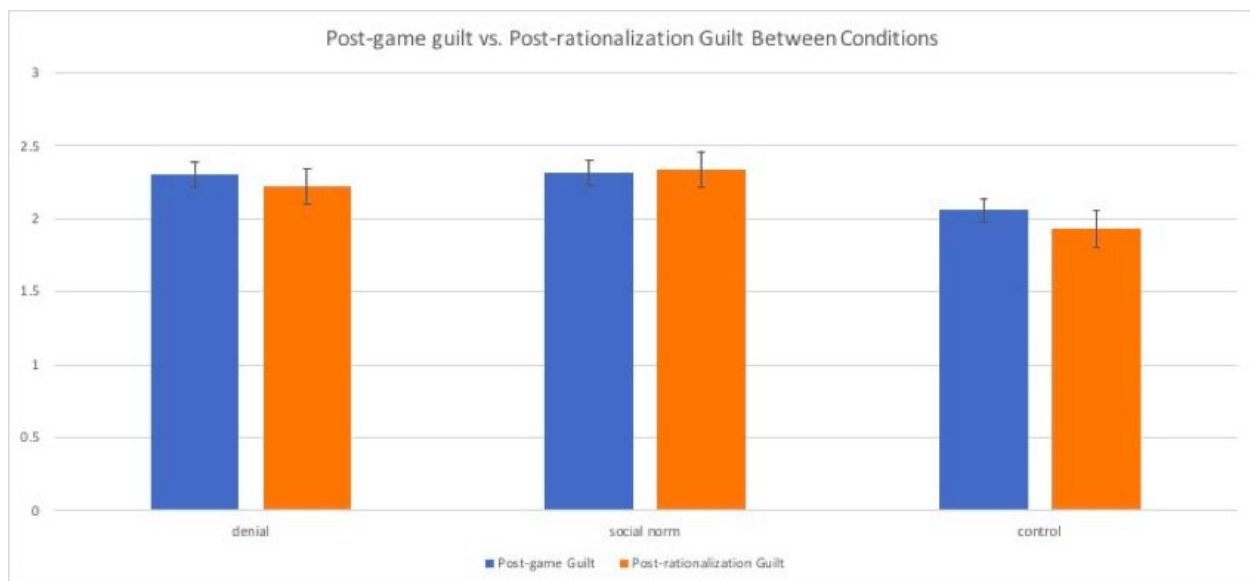


Figure 2. Guilt difference between post-game and post-rationalization across conditions

Hypothesis 3: Willingness to help

We conducted a one-way between-subjects ANOVA to compare the effect of post-rationalization guilt on willingness to help in denial of responsibility and social norms conditions. Control condition was not included since it is served as a baseline measurement. The analysis showed that there was a significant effect of post-rationalization guilt on willingness to help for the two conditions; $F(1,247) = 18.61, p < 0.001$. This means that the willingness to help is correlated with how much guilt people feel after rationalization, $\beta = 1.21$.

Discussion

Theoretical and Practical Contributions

Built on the past models about guilt, this experiment not only examined the connection between guilt and prosocial behavior but also explored if any cognitive process took place to reduce guilt, and if guilt would still motivate people to repair after their guilt decreased. This study shows that people do feel guilty when they found out they could've tried harder but they didn't, which in turn produced inconvenience for other people in the lab. This finding supports the idea that guilt results from internal and controllable events as people who blame poor performance on effort ("I didn't try hard enough") will be likely to feel guilty (Tracy, Robins, & Tangney, 2007). The result also reveals that, in contrast to the hypothesis, rationalization, either by denying responsibility or comparing with social norms, failed to aid the decaying process of guilt. In fact, participants who did a memory task in the control condition showed significant lower guilt than participants in the rationalization conditions. One possible explanation for this phenomenon would be that instead of retaining of guilt through the memory task, people in the control condition experienced the natural decaying process of guilt since their attention was

shifted to memorize the words rather than keep thinking about the event that made them feel guilty. On the other hand, participants in the rationalization conditions were forced to recall the fact that their behavior affected other people negatively. Therefore, instead of reconciling the cognitive dissonance, writing down rationalizations actually evoked the memory of their misdeeds and make them feel guilty again. This idea is supported by Levine and Safer (2002), who demonstrated that people tend to use their current emotions and interpretations of past events to assume their feelings. Therefore, the process of rationalization, either by denying responsibility or by comparing with social norms, holds the guilt and prevent the natural decay of guilt.

This experiment confirms that guilt is linked to prosocial behavior, particularly, willingness to help other people. As past research often linked guilt with prosocial behaviors that are irrelevant to the source of guilt, the present study illustrates that guilt can lead to directly repair self as well as the interpersonal relationship with strangers. The result shows a positive correlation between post-rationalization guilt and willingness to help, meaning the guiltier the people feel, the more they are willing to help others. This is consistent with the notion that guilt is associated with a general motivation to improve the self in the self-related domain since guilt emerges from failing to achieve standards that are important to oneself (Allard & White, 2015). Participants in this study offered to share their partners' extra workload to decrease their guilt in a way that fulfilled their original moral standards.

The findings in this experiment provide further implications for the ways in which people can have a better understanding of their negative emotions, especially guilt, when they encountered events that opposed to their expectations or self-standards. Such knowledge can be

applied in our daily life and serves as a way to affect regulation. Instead of keeping thinking about the mistakes and trying to find excuses for themselves, people can shift their attention away from the misdeeds and let their emotions decay naturally. Moreover, this study can change people's negative impression of how negative emotions such as guilt can lead to poor decision making. Guilt can serve as a motivation to better oneself as well as to improve interpersonal relationship, which is important in the social context such as school and business operations.

Limitations and Future Direction

The current research has several limitations that should be noted. First of all, due to the fact that emotion is a subjective experience, the brain-teaser game did not induce strong guilt. Even though there was significant evidence that the game elicited guilt, the difference between baseline guilt and post-game guilt was only 0.7 away. Most past research on guilt asked participants to write down events that make them feel guilty. However, the re-appraisal of the events does not evoke the exact same memory. Therefore, future research can explore the decay of the guilt from comparing the instant guilt with guilt in emotional memory. It was also difficult to tell if people used the scale correctly since most people reported low in the PANAS and few were above. Additionally, the prompts that were supposed to direct participants to rationalize might not be clear enough, which might possibly lead to the ultimate no difference within the denial of responsibility and social norms condition. Lastly, the current study has limited generalizability because it was conducted at a university in North America. The universality of guilt has always been a controversial topic as some research suggests that guilt in Eastern culture might be grouped in emotions that associate with not losing face.

The findings of this study can serve as a foundation and provide insights for the future. The current study raises a question regarding the conscious or unconscious characteristic of guilt. Future research could seek to improve our understanding of rationalization and explore what conscious aspect in the process of rationalization prevents the natural decay of guilt. Future research should also emphasize on extending the present knowledge about the universality of self-conscious emotions, as past research discovered that shame in Eastern culture may motivate reparative behavior as well (Haidt, 2003). In addition, future research can examine the origin of guilt in an individualistic culture and collective culture because the prior one tends to focus on the self whereas the later one emphasizes the benefit of an entire group. In this case, further research is needed to fully understand if there is a cultural difference in the starting point of guilt and whether it would influence the following social decisions.

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Appendix

PANAS (Positive and Negative Affect Schedule) that participants report their emotion states at baseline (before the game), post-game, and post-rationalization.

	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Interested	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Distressed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Excited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Upset	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strong	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guilty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scared	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Hostile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enthusiastic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Proud	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Irritable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alert	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ashamed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Inspired	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
Nervous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Determined	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Attentive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jittery (Uneasy)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Afraid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

At the beginning of the experiment, participants chose their partner from a list of SONA ID.

CHOOSE A PARTNER

Please select **which participant** you will work with from by choosing a SONA ID from the list below.

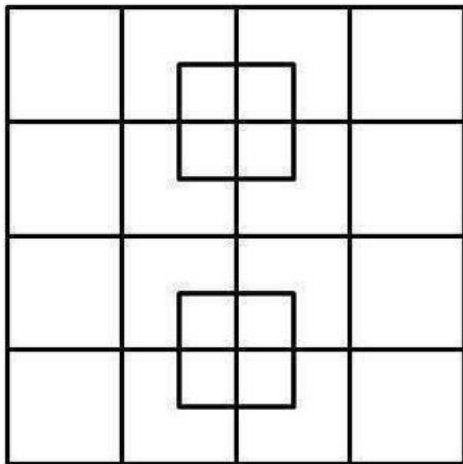
After they completed the baseline PANAS, they read:

In a short time, you will begin the "How Good Are Your Eyes" task. You will be given a set of visual brain teasers. You will need to find out the answer to every question within 15 seconds. Remember, **your performance will affect your partner's experience.**

The task involves viewing a photo and answering the question about that photo.

When you're ready to begin, click the arrows to proceed to the next page.

The following shows an example of brainteasers that participant had to complete. There were 10 brain teasers in the game.



How many squares are there in this picture?