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For what its worth: 'Negative' ritual actions increase monetary valuations of ritual objects

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'Negative' ritual actions increase monetary valuations of ritual objects

by

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ABSTRACT

The theoretical study of ritual has focused on its ability to facilitate feelings of connection, enhancing the social bonds between participants. Here, we propose that rituals can also serve to intensify monetary valuations of objects that are central to the ritual. We hypothesized that rituals, in general, will enhance valuations of ritual objects, but the nature of those ritual actions will determine the valence of that enhancement (e.g. whether the valuations are more positive or more negative). We tested this hypothesis in a series of three studies. In the first study, we used an existing individual ritual paradigm to determine the effect of different ritual actions (disgust, savor and neutral) on valuations of a ritual object. In the second study, we drew upon the idea of ritual as group phenomenon and developed a new ritual paradigm to examine differences between positive and negative ritual actions as a function of individual and group rituals on valuations of a ritual object. In the third study, we manipulated similarity to fellow ritual participants in order to more directly examine the relationship between feelings of group connectedness and valuations of ritual objects. Overall, results indicated that the ritual object was assigned the highest monetary value by participants in the ostensibly 'negative' ritual conditions. Possible explanations and future directions are discussed.

Introduction

Human beings around the globe participate in group rituals, often as part of religious or other collective gatherings. The ubiquity of human rituals has made them a widely studied topic in disciplines like anthropology and sociology. Studies of ritual are often conducted by anthropologists of religion and, as such, have focused on religious rituals. Two notable examples are Durkheim (2012) and Radcliffe-Brown (1933) both of whom take similar positions on the purpose of religious rituals: They are a social mechanism that facilitates the coordination of ritual participants. Specifically, the Durkheimian perspective posits that this coordination occurs on both a physical level and mental level -- not only are the physical actions of ritual participants coordinated, but their values, motivations, and judgments are synchronized as well, a notion that informs the proposed research. This perspective further conjectures that the coordination of physical and mental states leads to "intellectual and moral conformity," a state in which people begin to lose their individual identities and instead view themselves as part of a group (Durkheim, 2012). Durkheim termed this group-level state *collective effervescence* and stressed its importance in increasing ingroup identification and cooperation.

Similar to Durkheim's perspective but from a different theoretical framework, evolutionary theories of religion and group rituals highlight their ability to bind groups together, promoting cooperation and pro-social behavior among group members (Ahmed & Salas 2013; Richerson & Boyd 2001). For example, Atran and Henrich (2010) argue that rituals and other religious ceremonies function as costly displays of commitment to the group, meaning that they signal to ingroup members that one has adopted and adheres to group norms and values. As such, displays of synchronous action may serve as a vital

part of religious rituals because they serve as an obvious indicator of who is a committed member of the group and who is not (Irons, 2001). Thus, both the Durkheimian perspective and evolutionary theories of ritual emphasize ritual's ability to increase ingroup solidarity.

However, questions remain as to the function of ritual and specifically whether ritual's only effect is to bind individuals within a group together. Does ritual do more than increase positive feelings toward fellow ritual participants and the ritual group? There is very little research to this end. We hope to fill this gap in the research by exploring how ritual might influence evaluations of material objects associated with the ritual experience. Given that evaluations are likely related to the group nature of ritual, we begin with a review of empirical evidence of ritual's ability to increase ingroup connectedness.

Ritual and Ingroup Solidarity

Past research provides empirical support for the notion that rituals enhance pro-social and within- group cooperative behavior. Ginges and colleagues (2009) provide evidence for this in their research examining the relationship between religion and support for suicide attacks. They conceptualize suicide attacks as an extreme form of parochial altruism (Choi & Bowles, 2007), in which the suicide attacker kills members of outgroups in an act of ultimate sacrifice for the ingroup. As such, support for suicide attacks (against outgroups) would be indicative of commitment to the ingroup. The authors present two hypotheses about the existence of the relationship between religion and support for suicide attacks. The first of these is the religious belief hypothesis, which holds that devotion to a religious belief, a set of religious doctrines or dogma is the

cause of support for suicide attacks (Harris, 2005). On the other hand, the coalitional commitment hypothesis holds that participation in collective activities enhances within-group commitment which, in turn, enhances support for suicide attacks. Using a cross-cultural sample of participants, the authors found that attendance at collective religious services was positively related to support for suicide attacks. Interestingly, prayer (here defined as an inward communication with God [James, 1961]) was not. This lends support to the coalitional commitment hypothesis as attendance of religious services is understood as participation in a group religious activity, and so provides some evidence that collective, group activities facilitate ingroup commitment.

This link is further underscored by Sosis and Ruffle (2003) in their research related to the relationship between religious ritual and cooperation within Israeli religious and secular kibbutzim. Grounded in theoretical perspectives set forth by Rappaport (1979, 1999), Sosis and Ruffle argue that engagement in religious rituals increases ingroup cooperation because rituals are a costly demonstration of loyalty and commitment to the ingroup. Sosis and Ruffle note that Jewish religious rituals exclusively completed by males are public and collective. On the other hand, female Jewish religious rituals are more private and individualistic. As such, the researchers expected that religious males would be most cooperative, as they were regularly involved in costly demonstrations of ingroup commitment and loyalty via their public, collective rituals. To test this idea, they had men and women who lived in religious and secular kibbutzim play a common pool resources dilemma with members of their own kibbutz (in which limited resources are in a publically accessible pool and "over-harvesting" by individuals will destroy the pool for everyone). As hypothesized, researchers found that

religious males claimed less money from the pool than religious females, secular males, and secular females, indicating that they were more cooperative. Sosis and Ruffle argue that collective rituals are expressions/reaffirmations of shared beliefs, norms and values, and consistent engagement in such collective rituals functions as an ingroup commitment mechanism by enhancing social bonds. Indeed, further analyses revealed that for Jewish males, perceptions of cooperation within the kibbutz were positively correlated with synagogue attendance such that those who attended synagogue more regularly perceived greater degree of cooperation within the synagogue. As such, participation in collective rituals is linked to the perception of increased cooperation and solidarity of the group as well as increases in cooperative behavior.

Both the research by Sosis and Ruffle as well as the research by Ginges and colleagues provides evidence consistent with the possibility that participation in collective religious activities enhances commitment to the ingroup. However, there are several issues that must be considered with regard to these data and the conclusions drawn. The first of these issues concerns self-selection. This issue is particularly important with regard to Sosis and Ruffle's research on Israeli religious and secular kibbutzim. The authors argue that synagogue attendance contributes to tendencies to cooperate. Although the authors acknowledge that the causal direction of this relationship cannot be distinguished by their correlational data, "[they] find it unlikely that those who perceive greater levels of cooperation on the kibbutz are more likely to participate in regularly in collective ritual" (Sosis & Ruffle, 2003). However, we believe that they dismiss this interpretational problem too swiftly. Indeed, it seems highly plausible to us that highly cooperative individuals are drawn to collective group rituals more than

individuals with less cooperative tendencies. Ginges and colleagues acknowledge this issue by arguing that frequency of religious service attendance predicts support for suicide attacks, but does *not necessarily cause* that support. As such, it should be acknowledged that the correlation between participation in rituals and cooperation could be accounted for by a third factor: natural variations in cooperation tendencies (or perhaps some other unmeasured variable).

Another question that arose with regards to the research by Ginges and colleagues (2009) and Sosis and Ruffle (2003) is: What features of these collective activities or rituals are most important for increasing in-group solidarity? Both researchers used religious service attendance as a measurement of ritual, but religious services are so multi-faceted that it is difficult to grasp which particular features of religious attendance might exert a causal influence on solidarity in their studies. Likewise, there is no clear definition or description of which particular features of religious service attendance make it a ritual – are people passively listening to a sermon or are they performing some sort of ritualized behaviors? Furthermore, there is no consideration given to the fact that non-ritual features of religious service could be driving the effects. For example, the religious service might involve explicit instruction or persuasion, formally or informally, by other congregants or religious leaders to act in favor of the ingroup, which might increase the salience of this moral norm. Though each of these might be a part of a ritual experience, extant research does not tease these features apart in order to determine which feature (or combination of features) is involved in increasing feelings of commitment to the group.

Why Does Ritual Increase Ingroup Solidarity?

There are strong theoretical reasons to suspect that ritual participation will increase ingroup solidarity, and there is some evidence consistent with this possibility. A question that naturally arises is: *Why* does ritual participation increase ingroup solidarity?

Ritual intensity. Xygalatas and colleagues (2013) provide some insight. They examined the effect of high-ordeal and low-ordeal rituals on pro-social behavior and identity amongst Mauritian Hindus. High-ordeal rituals included activities like body piercing, carrying heavy structures and dragging carts barefoot; whereas, low-ordeal rituals included activities like singing and collective prayer. Interestingly, there were differences in both pro-social behavior and social identity based on the type of ritual experienced. Individuals who were part of high-ordeal rituals (as either performers or observers) were more pro-social towards in-group members (in a task in which participants could choose how much they wanted to donate to a temple) than people who were part of low-ordeal rituals. Additionally, high-ordeal ritual participants reported a stronger national identity (i.e. they saw themselves as more Mauritian, a more inclusive super-ordinate identity), while low-ordeal ritual participants reported a stronger parochial identity (i.e. they saw themselves as more Hindu). Given the features of high- and low-ordeal rituals, the authors were able to detect a potential mechanism that underlay their findings: perceptions of pain. Indeed, the authors found that the greater the judgment of pain intensity by high-ordeal ritual participants (by both participants and observers), the more pro-social they were and the more inclusive the identity they reported.[1]

[1] The authors did not report whether there was a significant influence of pain perception on donation amounts amongst low-ordeal ritual participants.

This finding can be discussed in relation to research by Aronson and Mills (1959), who found that more severe or unpleasant group initiations resulted in greater liking for the group. Aronson and Mills related this finding to cognitive dissonance (Festinger, 1957), arguing that individuals need to resolve the discrepancy between the negative cognitions resulting from the unpleasant initiation to a group and the cognition that the group may not have been worth such an experience in one of two ways: either believing that the initiation was not as negative as previously perceived or by amplifying the positive aspects of the group (e.g. "The initiation was unpleasant but completely worth it because this group is amazing). Similarly, Xygalatas et al.s' participants in high-ordeal rituals had a more intense experience (as indicated by higher perceptions of pain) and as such, became more pro-social towards their group. Although pro-social behavior is not the same as generalized positive feelings towards the group, these phenomena are likely linked to one another. Further, the empirical work of Xygalatas and colleagues and Aronson and Mills is consistent with the evolutionary and Durkheimian theoretical perspectives discussed earlier: Ritual serves to increase feelings of ingroup connectedness and ingroup cooperation.

With regard to the finding that participants of the severe ritual experience reported a stronger superordinate identity (e.g. a national identity that includes several different religious identities), Xygalatas et al. (2013), write "identity functions in a social context" meaning that by having a stronger superordinate identity, high-ordeal ritual participants were reacting to the physical space of their ritual, meaning that they were considering that their ritual occurred in a public space that is used by members of their community, e.g. people who might not necessarily share a religious identity but who likely share a

national identity. As such, it seems that it is not just partaking in a ritual that matters but what actually occurs during the ritual. In other words, the mental processes of the ritual do not operate independently of the physical conditions of that ritual (i.e. where the ritual is occurring, what types of actions and behaviors are being engaged in, who the other ritual participants are, etc.). Indeed, the mental processes of the ritual are most certainly influenced by the physical reality of that ritual. Thus, it may be the case that if the certain aspects of the physical reality of the ritual are changed (for example, the behaviors enacted during that ritual) then the ritual could have different consequences. This idea will be further discussed below.

Collective synchrony. Given that rituals usually involve some sort of group based physical behavior, it is possible that collective synchronous action is one mechanism underlying ritual's ability to increase feelings of ingroup connectedness. Recently, social psychologists have explored the notion that synchronous action results in stronger intra-group relations because they weaken the boundary between the self and the group. Indeed, this idea was set forth by Durkheim (2012) who argued that synchronized actions play a vital role in rituals for they allow for the boundaries between the self and other members of the group to deteriorate, resulting in a state he termed collective effervescence.

The notion of collective effervescence forms the basis of the so-called *hive hypothesis*. As defined by Haidt, Seder and Kesebir (2008), the hive hypothesis suggests that the individual self poses an obstacle to happiness and that people occasionally need to lose their individual identities and become part of a larger social organism in order to reach the highest level of individual wellbeing. This hypothesis echoes Durkheim by

emphasizing that humans have a need to occasionally lose themselves to something grander. Haidt and colleagues propose that the loss of the self can result in feelings of intense happiness, even ecstasy. Indeed, when looked at through the lens of the hive hypothesis, cultural practices like dance, music, ritual (both religious and non-religious), feasts and celebrations allow for individuals to become part of something larger than themselves and achieve a state of ecstatic happiness. Put another way, this hypothesis postulates that things such as rhythm and synchronous actions are evolutionary byproducts of a distinctly human need to transcend individual consciousness and merge with a group. The attendant euphoric state provides the motivational push to bind with others.

Yet despite this reasoning, psychological research on synchrony and the notion of collective effervescence has found evidence to the contrary. Specifically, there is experimental evidence that although synchronous action does increase group cohesion, happiness is not a necessary outcome or link in that process. Wiltermuth and Heath (2009) tested this the association between happiness and synchronous action in a series of experiments. The researchers hypothesized that acting in synchrony with others can foster cooperation by strengthening group cohesion. They further predicted that the synchronous action necessary to foster cooperation need not be "grossly" physical nor a joyful experience. These hypotheses stand in contrast to both the Durkheimian perspective and Haidt's hive hypothesis, which maintain that synchronous behavior needs to involve an emotionally positive state. Using two different types of synchrony procedures and two different economic games, Wiltermuth and Heath found that synchrony does indeed increase cooperation (even at personal expense) by strengthening

feelings of attachment and cohesion amongst participants. However, participants who acted synchronously did not self-report feeling happier than those who acted asynchronously. This supports the idea that synchronous action need not be coupled with happiness in order to achieve group cohesion and cooperation. Indeed, it may be that feeling attached and connected to fellow group members allows for the transcendence of the individual self a la Durkheim and Haidt and colleagues, and that the positivity associated with the transcendence of the self is not effervescence or joy, but rather, simply a feeling of connection to others. Such an account fits in well with evolutionary perspectives, which argue that happiness may increase the probability of a behavior, but the function of a behavior must extend beyond the creation of a particular emotional state (see Dennett, 1995). The function of group ritualistic behaviors may be to heighten feelings of group connectedness and strengthen bonds between group members in order to increase the group's fitness.

Group cohesion and cooperation are not the only effects of synchronous action. Acting in synchrony with an individual can also lead to compassion and altruism towards that individual after he or she had been unfairly treated by another (Valdesolo & DeSteno, 2011). Synchrony has also been linked to greater entitativity (the perception of the group as a unified and cohesive whole as opposed to a conglomerate of individuals) and greater feelings of trust towards fellow synchronous action participants (Fischer et al., 2013). Based on the experimental evidence, researchers have proposed a model such that synchrony leads to feelings of similarity, liking and a weakened boundary between the self and the other, which in turn leads to greater group commitment (operationalized

as pro-social behavior, helping behavior and cooperation within groups) (Valdesolo & DeSteno, 2011).

This prior research highlights how enacting coordinated bodily movements can have a direct impact on mental processes and behavior. Simply by moving one's body in the same way as another person mental boundaries between one's self and the other are blurred. As discussed above, the consequences of such a blurring are particularly beneficial for groups because feelings of ingroup connectedness and tendencies towards ingroup cooperation both increase. Synchronous action is clearly one mechanism by which ritual serves to amplify feelings of connectedness.

The Ritual Endowment Effect: Intensifying the Value of Ritual-Connected Objects

As reviewed in the previous section, most of the extant literature builds upon the ideas of Durkheim and evolutionary theorists regarding ritual as a path to group cohesion. Other scholars, including us, are interested how rituals might influence the perceived value of objects that are associated with ritualized activity. Indeed, a major function of ritual may be to imbue specific parts of the material world with increased value, as in the cases of creating 'sacred ground', imbuing a talisman with magical healing or protective powers, or infusing a vehicle that will transport loved ones with the power to avoid danger (Eliade, 1957). In other words, material objects that are part of ritual may acquire special status or value because of their part in that group ritual experience. We call this possibility the *ritual endowment effect*.

Recent research has provided some evidence to this end, although researchers have not yet directly investigated group rituals. Vohs and colleagues examined the effect of ritualistic behavior on an individual's enjoyment when consuming food (2013). The

authors define ritual as "symbolic activity that often includes repeated and unusual behaviors occurring in a fixed, episodic sequence." The authors argued that such individualistic ritualistic behaviors lead to heightened levels of enjoyment of an experience because they increase involvement in that experience. They found that ritualized consumption of a food item led to increased enjoyment of the consumption experience, increased perception of the food item's value, and increased judgment of how flavorful the food item was. Additionally, Vohs and colleagues found that participants reported higher intrinsic involvement with ritualized consumption experiences.

Although these authors argue that greater personal engagement as a result of ritualistic behavior is the cause of a heightened food consumption experience, close examination of their methods suggests that their ritual behaviors might have inadvertently activated the concept of "savoring." If this is the case, it is possible that direct activation of the concept of savoring could explain their findings. To elaborate, the behaviors that Vohs and colleagues used in their rituals involved slowly unwrapping half a chocolate bar, eating it, then unwrapping the other half; pouring half an amount of lemonade powder, stirring, then pouring in the other half; closing one's eyes and taking deep breaths during these experiences. These behaviors are commonly associated with savoring a culinary experience. As such, it may be that the researchers, rather than manipulating ritual *per se*, manipulated the extent to which the concept of savoring was activated. Following this reasoning, it is possible that if the researchers had instead used "ritual" behaviors that are associated with disgust (pushing the object away, holding one's nose), the food and consumption experience would be thought of as having very little value indeed.

Collective Attention. Vohs and colleagues provided evidence consistent with the idea that ritual can increase the value of ritual-connected objects (with the caveats noted above). Their notion of ritual, however, is quite different from that in the literature reviewed earlier. For Vohs et al., rituals need not be group-based. This contrasts markedly with the Durkheimian and evolutionary perspectives, which hold that rituals are inherently collective activities. As discussed above, a great deal of prior work (Durkheim, 2012; Haidt et al., 2008; Wiltermuth & Heath, 2009) theorizes that participating in a ritual with others (i.e. a *group* ritual) should enhance the ritual experience. We posit that group based rituals might also have the effect of enhancing evaluations of ritual objects. As such, being part of a group ritual might involve group-specific mechanisms that lead to heightened evaluations of ritual objects.

One potential psychological mechanism by which the evaluation of a ritual object might be enhanced is collective attention. Previously, collective attention has not been studied in relation to group rituals *per se*. However, given that rituals tend to involve people simultaneously paying attention to objects or events (Malinowski, 1922), collective attention should examined as a potential effective feature of ritual because it has previously been linked to evaluative judgments of the object of attention. Specifically, there is some evidence that collective attention can lead to increased evaluations of objects of shared attention. Objects that are the focus of shared attention are often viewed more positively than objects that are individually attended to. For example, in a series of four different experiments, Shteynberg and colleagues (2013) examined how shared attention towards a neutral object influences evaluations and reactions towards that object. Participants were told that they were taking part in an

online focus group in which they would be asked to evaluate a painting with two other (ostensibly real) individuals. The identity of the other individuals was varied such that they either chose the same (*ingroup*) or a different (*outgroup*) online avatar as the participant. Results indicated that shared attention (e.g. when all participants in the online focus group were presumably looking at the same painting) with ingroup members (as opposed to outgroup members or individual attention) leads to more positive evaluations of both the experience and the object of focus. The authors argue that objects that are experienced jointly with other group members are subject to deeper elaborative processing which in turn leads to more positive evaluations.

This is consistent with research by Tomasello and colleagues who have found that objects that are attended to by both an infant and a caregiver are more deeply encoded by the infant (as indicated through duration of gaze and pointing towards object) than objects attended to by the infant alone (Liszkowski, Carpenter, Henning, Striano & Tomasello, 2004; Tomasello 1999; Tomasello et al., 2005). Furthermore, objects which are jointly attended are better recognized than those which are attended to by only the infant. Work with adults has found that objects to which people jointly attend are described with greater verbal complexity and are better remembered (Eskenazi et al., 2012; He, Lever & Humphreys, 2011; Shteynberg 2010; Shteynberg et al., 2013). Taken together, this research provides evidence that objects which are simultaneously attended by ingroup members and other significant individuals are processed more deeply.

Of course, the question remains: Why are objects attended to by ingroup members processed more deeply? Bayliss and colleagues (2006) propose that shared/collective/joint attention functions as a signal that the object is of some

importance or value, and as such is worth considering. Indeed, when we see someone gazing in a particular direction we are likely to gaze there ourselves (Shepherd, 2010). Furthermore, as Bayliss et al. demonstrate, we are likely to rate the objects more positively when another individual has gazed on it. Interestingly, this seems to only occur when the gaze cue comes from another person. When the cue is an arrow (as opposed to a human looking), then there was no effect on the ratings of the object. As such, increased evaluations, which arise from collective attention, rely on social signals and cues. Taken together, this research gives one explanation of how collective attention leads to increased value: Collective attention indicates that the object may *potentially* be valuable, which leads to deeper processing of said object, which in turn, leads to heightened evaluations of that object. To put it another way, noting that an object is the focus of collective attention indicates that it is worth a second, closer look; in turn, that second, closer look might lead to an individual imbuing that object with value[2].

Does Ritual *Add Positive Value* to Objects or *Intensify Feelings* (of either valence) toward Objects?

The research on collective attention focuses on how evaluations of objects that receive collective attention are *positively* enhanced. If the only mechanism used during group rituals were collective attention then it would be reasonable to assume that ritual objects would be positively looked upon (given that the object is thought of somewhat positively to begin with[2]). However, this is certainly not the case – rituals involve both

[2] This is complicated if one considers the elaboration likelihood model (Petty & Cacioppo, 1981, 1986; Petty, Cacioppo, Strathman & Priester, 2004). According to this model, deeper processing will increase positive evaluations only when there is some evidence for positive value of what is being processed. If the entity which is being processed is actually negative in some way, then deeper processing of that entity will increase negative evaluations of that object. Indeed, the experiments described in the preceding paragraphs used objects which may be rated as neutral to positive.

synchronized actions and group processes, which, when combined with collective attention may affect how ritual objects are processed and evaluated. Indeed, it is easy to imagine ritual objects that are collectively attended to and acted upon synchronously which are not viewed positively, but rather are viewed negatively. For example, in Zimbabwean understanding of witchcraft, sorcerers can use *undofa*, or a familiar person (a servant, spy, or companion to a witch), to harm their intended victims. Though these *undofa* are thought of as beings, they can also be considered ritual objects because they are attended to and acted upon by members of the community (Rodlach, 2006). In this case, the *undofa* as ritual objects are acted upon in a certain way and collectively attended not because they are of great positive value but because they are powerful and feared, and so must be treated so as to prevent their ill-effects from occurring. As such, it may be that ritual objects are associated with strong affects, but whether that those affects are positive or negative is determined by how they are conceptualized and treated in the course of the ritual. In other words, it is possible that ritual intensifies evaluations of a ritual object independent from the valence of the evaluation.

In the current work, we hypothesized that the value of the ritual object is intensified during rituals due to both the effects of collective attention and synchronous action. Importantly, we predicted that group rituals *intensify* rather than *improve* evaluations. We predict that the type of ritual actions determine if the evaluations are enhanced in a positive or negative direction. We predict that acting synchronously upon an object connotes that the object has value, while the *specific* manner in which it is acted upon determines the *valence* of that value. For example, some rituals may involve lifting an object, raising it to the sky, washing the object in a special manner, storing it in a

special place, and so on. All of these actions and regulations concerning the object connote that the object is to be respected, valued and revered. Furthermore these actions require that participants treat the object with great care indicating that the object should not only *be* respected, but that the object actually *is* respected. By sheer virtue of acting as if the object is worthy, the object may gains worth. Other rituals might involve more negatively connoted actions. For example, rituals may involve burning or breaking or somehow destroying the ritual object (e.g. the practice of burning flags either as protest or as a sanctioned means of flag disposal). Additionally, some religious rituals involve throwing the ritual object off a fifty-foot tower (AP, 2009) or leaving a ritual object exposed so that it can be destroyed by nature (as in the case of Zoroastrian funerary practices). In such cases, the value ascribed to the object might still be intensified, but in the opposite direction.

In sum, we hypothesized that performing synchronized *positive* actions on a ritual object will cause more *positive* evaluations of the object while performing synchronized *negative* actions on a ritual object will cause more *negative* evaluations. We tested this idea in three different studies. In the first study, we used variation of the paradigm developed by Vohs and colleagues (2013) to explore if the type of actions performed on an object during an individual ritual influences the value judgment of that object. In the second study, we used a paradigm akin to the one used in a pilot study to explore the ritual endowment effect. In the pilot study, we tested the effect of group rituals on monetary value judgments of a mundane ritual object. Results of this study revealed that liberal (but not conservative) participants valued the object more after partaking in rituals containing collective attention and synchronized action (See

Appendix A for full methods and results). Additionally, participants who partook in the ritual containing collective attention and synchronized action reported higher feelings of group connectedness, regardless of political orientation. Based on these results, we used the pilot study paradigm in the second and third studies; however we manipulated the nature of the synchronized actions (i.e. making them positive towards the object or negative towards the object). In the third study, we manipulated group identification in order to experimentally investigate the effect of group connectedness on evaluations of the ritual object. Taken together, these three studies tested the hypothesis that ritual actions enhance value judgments of ritual objects while the particular *nature* of the ritual action determines the valence of the judgment.

Study 1

Methods

Participants. Ninety-three Lehigh undergraduates participated in exchange for .5 course credit. Nine were eliminated because they failed to complete the primary dependent variable. The final sample size was 84 (45 females).

Procedure and Measures. Participants were told that this study was about how people eat. After completing demographic information, participants received specific instructions about how to eat a piece of chocolate. The nature of those instructions varied as a function of condition.

Participants were randomly assigned to one of four conditions (no action, neutral action, savor, disgust). In the no action condition participants were told: "Count back from 15. Then eat the chocolate bar." In the neutral condition participants were told: "Without unwrapping the chocolate bar, rotate it 180 degrees. Unwrap it, and then split it

in half. Flip over one half, and then eat it. Flip over the other half and then eat it." In the savoring condition, participants received the following instructions: "Slowly unwrap the chocolate bar, taking note of the color and texture. Then, gently break it in half. Inhale deeply, allowing yourself to experience the smell of the chocolate. Then, eat half of the chocolate bar. Next, inhale deeply again, allowing yourself once again to experience the smell of the chocolate. Then, eat the remainder of the chocolate." Finally, in the disgust condition, participants were instructed: "Without unwrapping the chocolate bar, push it away from you while turning your head in the opposite direction. While it is at arm's length, unwrap it. Then while the chocolate is at arm's length, break it in half. Pick up one half using only your index finger and thumb and eat it. Then pick up the second half with your index finger and thumb and eat it."

After reading the instructions, participants were instructed to ask the experimenter for a piece of chocolate. After participants received the chocolate, they were then instructed to click forward to the next page, which displayed the instructions about how to eat the chocolate. Additionally, this page recorded how long participants spent eating the chocolate, which, based on past work, we conceptualized as a behavioral measure of savoring (Quiodbach et al., 2010).

After eating the chocolate, participants were asked to rate a variety of items (*1 = strongly disagree, 7 = strongly agree*) about their experience. Four items assessed *enjoyment* (e.g. "I really enjoyed tasting the chocolate"; "I savored every bite") (M = 4.57, SD = .81, α = .912). Participants were also asked to rate three items related to the *negative aspects of their chocolate experience*. Sample items included: "I felt like the taste of the chocolate was too intense" and "There were some subtle flavors in the

chocolate I did not enjoy" (*M* = 2.06, *SD* = .86, α = .859). Additionally, participants rated four items related to *negative evaluations of the chocolate's taste* (e.g. "The chocolate's taste was cloying"; "The chocolate tastes overly processed") (*M* = 2.73, *SD* = .97, α = .666). Additionally, participants completed two items related to how the *chocolate could be improved* (*M* = 4.31, *SD* = 1.17 α = .552) (See Appendix B for full list of items).

Participants were also asked: "How much would you be willing to pay for the chocolate?" Additionally, participants were asked to rate how rich/sweet/sugary/bland/unappetizing/harsh they thought the chocolate seemed (*1 = not at all, 7 = very much*).

Participants then completed the Disgust Sensitivity Scale – Revised (Haidt, McCauley & Rozin, 1994, modified by Olatunji et al. 2007). After completing this scale, participants were led to believe the experiment was over. The experimenter told participants that they could choose between another piece of chocolate or a small pack of mints as a token of appreciation for completing the experiment. The experimenter made a note of what each participant chose and gave participants whatever item was chosen. Finally, participants were debriefed and thanked.

Results

In order to test the hypothesis that the manner in which the chocolate is handled prior to eating influences evaluations of the chocolate, one-way ANOVAs were conducted on the dependent variables, including how much participants were willing to pay for the chocolate, how long participants spent eating and evaluations of the chocolate's taste and experience.

The first of these looked at the effect of our manipulation on how much participants were willing to pay for the chocolate. The effect of condition was statistically significant, $F(3, 69) = 4.352$, $p = .007$, such that participants in the disgust condition were willing to pay the most for the chocolate ($M = \$1.63$, $SD = 2.46$), followed by those in the savor condition ($M = \$.43$, $SD = .29$), the neutral condition ($M = \$.43$, $SD = .31$) and the no action condition ($M = \$.39$, $SD = .29$) (See Figure 1). Post-hoc tests revealed that participants valued the chocolate more in the disgust condition than in the savor ($t(79) = 2.843$, $p = .006$), neutral ($t(79) = 3.071$, $p = .006$) and no action ($t(79) = 3.014$, $p = .004$). There were no significant differences between savor, neutral and no action conditions (all p's > .9).

Additionally, there was a significant main effect, $F(3, 79) = 4.077$, $p = .01$ (see figure 2), on the amount of time participants spent eating the chocolate in each condition, which has been conceptualized as a behavioral measure of savoring (Quiodbach et al., 2010). Post-hoc analyses revealed significant differences between the disgust and no action conditions, $t(79) = 2.703$, $p = .008$, such that those in the disgust condition spent more time eating ($M = 43.23$, $SD = 29.55$) than those in the no action condition ($M = 23.26$, $SD = 19.09$). Additionally, those in the disgust condition spent more time eating than those in the neutral condition ($M = 21.07$, $SD = 14.72$), $t(79) = 3.031$, $p = .003$. Also, there was a significant difference between the savor ($M = 36.07$, $SD = 30.843$) and neutral conditions, with those in the savor condition spending more time eating, $t(79) = 1.99$, $p = .05$. There was a trending difference between the savor and no action conditions, $t(79) = 1.686$, $p = .096$. The difference between disgust and savor was not significant, nor was the difference between neutral and no action significant (both p's >

.36). As such, it appears that both the disgust and savor conditions increased the amount of time spent eating relative to the baseline (e.g. neutral action and no action) conditions.[3]

One-way ANOVAs revealed no significant effects of the manipulation on enjoyment, negative aspects of the chocolate experience, negative evaluations of the chocolate's taste and improving the chocolate (all p's > .12). Additionally, there was no effect of condition on perceptions of how rich, sugary, sweet, bland, unappetizing or harsh the taste of the chocolate was (all p's > .28).

Thus far, results of this study indicate that actions which originally were conceptualized as 'disgust'-inducing actually resulted in the highest monetary valuation of the chocolate. This stands in contrast to the hypothesis that the disgust actions would lead to the most negative evaluation of the chocolate (as a ritual object) and the savor actions would lead to the most positive evaluation of the chocolate. It should be noted here monetary valuation is just one means by which the value of an object can manifest. It can also be indicated by attitudinal evaluation, an idea that we tried to capture with our inclusion of attitude statements about the chocolate. However, our manipulations did not change attitudinal evaluations of the ritual object. Below, we report exploratory analyses involving disgust sensitivity as a potential moderator in order to examine what our disgust condition might be doing.

Exploratory Analyses with Disgust Sensitivity

[3] Interestingly, there was no correlation between time spent eating and participant's monetary valuation of the chocolate, enjoyment or negative evaluations of the chocolate's taste (all p's > .32). There was a weak, marginally significant positive relationship between time spent eating and negative aspects of the chocolate experience, $r(83) = .199$, $p = .071$. This does not support the original conceptualization of time spent eating is a measure of savoring, but, if anything, the opposite. However, given that these results are unpredicted, weak and exploratory, they should be taken with a grain of salt.

Follow up analyses suggested that the effect of condition on participant's monetary valuation of the chocolate was driven by participants low in disgust sensitivity - as revealed by results of an ANCOVA run with disgust sensitivity as the covariate. Results of this ANCOVA revealed a marginally significant interaction between ritual action condition and disgust sensitivity, $F(3, 65) = 2.201$, $p = .096$ (See Figure 3). Simple effects tests revealed that for participants low in disgust sensitivity (-1 SD) there were significant differences between the conditions $F(3, 65) = 6.162$, $p = .001$. Specifically, participants low in disgust sensitivity valued the chocolate more in the disgust condition than the savor condition ($p = .001$), the neutral condition ($p < .001$) and the no action condition ($p = .001$); there were no differences between the savor, neutral and no action conditions (all p's > .79). However, for those high in disgust sensitivity (+1 SD) there were no differences between conditions, $F(3, 65) = .103$, $p = .958$.

Discussion

Overall, results of this study indicate a rather unexpected pattern of results. Participants placed the highest monetary value on the chocolate when performing the actions originally intended to activate the idea of disgust. A more in-depth analysis suggested that this effect was driven by participants low in disgust sensitivity; individuals high in disgust sensitivity showed no differences in monetary valuation of the chocolate across conditions.

Interestingly, it is only monetary value that was affected by our manipulation; the other attitudinal indicators of value (e.g. *enjoyment*, *negative aspects of their chocolate experience*, *negative evaluations of the chocolate's taste*, *chocolate could be improved*) were not affected. We had hypothesized that these attitudinal valuations would act in

parallel to the monetary valuations. However, analyses indicated not only no effect of condition of these attitudinal statements, but no relationship between the attitudinal valuations and the monetary valuations. Perhaps then, our attitudinal items did not capture value, but some other constructs unrelated to value.

Additionally, participants showed no differences in ratings of different aspects of the chocolate's taste (e.g. sweet, bland, unappetizing, etc.). This may be because the chocolate that was used in our study (a 'fun-size' Kit-Kat bar) was one with whose taste participants were already quite familiar. Our different ritual actions probably are not enough to override many past instances of eating (non-ritualized) chocolate and the knowledge of its taste. As such, across conditions, participants' equivalent ratings of different aspects of the chocolate's taste might be due to an overarching familiarity with and knowledge of the chocolate's taste.

However, despite this familiarity, there were differences in monetary valuation of the chocolate. One possible explanation for the tendency to assign the most monetary value to the ritual object in the disgust condition is that participants in the disgust condition had a greater anticipation of the chocolate than those in the savor, neutral or no action conditions. As discussed by Loewenstein (1987), people are willing to pay more for positive events that occur after a slight delay than those that occur immediately. Loewenstein argued that the delay contributes to an "anticipal pleasure" of the positive event that in turn leads to a higher monetary value assigned to that event.

As Rozin, Levine and Stoess (1991) point out chocolate is one of the most highly craved and liked food items. Furthermore, given the high ratings of enjoyment and low ratings of the negative aspects of the chocolate experience across conditions, we can

safely assume that the chocolate eating experience was a positive one. As such, any anticipation of that chocolate eating experience should heighten monetary valuations of that experience. Indeed, the tendency for participants to spend the most time eating in the disgust condition supports this claim; they spent statistically longer anticipating the chocolate in the disgust condition than the neutral or no action condition[4].

Yet, it is also true that participants spent a statistically equivalent amount of time eating in the savoring condition. If the anticipation account were to be true, then wouldn't the savor condition have similar effects as the disgust condition on monetary valuations of the ritual object? One possible reason for the non-effect of savor on monetary valuations of the ritual object is that although the savor condition increased anticipation temporally, it did not do so spatially. In other words, the savor condition involved experiencing the color of texture of the chocolate and smelling it, all of which call for a physical proximity to the chocolate. On the other hand, the disgust condition creates a space between the consumer and the chocolate. Thus, it may be this twofold spatial and temporal distance unique to the disgust condition that increases anticipation for the chocolate, resulting in higher monetary valuations of the chocolate.

Study 2

In Study 1, we drew upon an existing experimental ritual paradigm (Vohs et al., 2013) in order to experimentally test whether the nature of a particular ritual action influence valuations (monetary and otherwise) of a ritual object. However, there is an obvious difference between this operationalization of ritual and theoretical

[4] Admittedly the conceptualization of time spent eating as a measure of anticipation is complicated by the weak relationship between time spent eating and negative aspects of the consumption experience. However, given that this relationship *is* weak and only marginally significant and that negative aspects of the consumption experience were unaffected by our manipulation, time spent eating could be assessing any number of psychological constructs, including anticipation.

understandings of ritual discussed in the introduction: the presence of others. Indeed, seldom in anthropological work is ritual discussed as an individualistic endeavor. Remaining cognizant of this literature, our aim in Study 2 was to apply the group dimension to our operationalization of ritual. As such, the specific goal of Study 2 was to test whether the type of actions performed during group rituals (as compared to individual rituals) influences valuation of ritual objects.

Methods

Participants. Ninety-three (47 Males) Lehigh undergraduates participated in exchange for .5 course credit.

Procedure and Measures. Participants arrived at the lab, provided informed consent, and were introduced to the study; participants were told that the researchers were interested in "how to improve concentration through relaxation" and that, after completing a few questionnaires, they would be completing a relaxation exercise.

After completing demographic information, participants were led to the ritual room. The room had been set-up to include a circular table with two chairs. The mundane ritual object—a silver, metal geometric sphere atop a placemat—was already on the table when participants entered the room. Additionally, we varied whether participants completed the ritual by themselves (individual condition) or whether they completed the individual with another person (group condition). In the group conditions, one confederate (an ostensible fellow participant) was already seated at the table. All participants were then given instructions about the relaxation exercise. The nature of the relaxation exercise was varied depending on the condition. There were two different ritual conditions:

1) *Positive* Synchrony Ritual – participants were told to: hug the object; lift the object in the air; hold the object in their hands
2) *Negative* Synchrony Ritual – participants were told to: drop the object; push the object away from themselves; put their feet on top of the object (See Appendix C for full detailed instructions)

Participants in all ritual action conditions completed their rituals while listening to a soundtrack (Gill, 2013, track 1). The soundtrack involved a repetitive, "ritualistic" frame drum pattern along with three cues—a bell, a short phrase about breathing by a Buddhist nun, a gong. Each cue functioned as prompt to complete one of the ritual actions - the bell prompted participants to complete the first ritual action (hug/drop the object), the short phrase prompted the second action (lift/push the object) and the gong prompted the third (hold/put feet on object). The ritual lasted for seven minutes.

After completing the ritual, all participants were brought back into their individual cubicles where they completed the relevant dependent measures. Value was assessed monetarily (e.g. Participants were asked: "How much do you think the object is worth?") (*object dollar value*: M = \$15.52, SD = 16.53). Additionally, participants were asked to rate the extent to which they found the object: *appealing, favorable, good, pleasing, attractive* and *likeable* (*positive feelings toward object*: 1 – *Not at all*, 7 – *Very*) (M = 3.8, SD = 1.11, α = .928). Additionally participants were asked to rate the extent to which they found the object: *disagreeable, objectionable, bad, irritating, offensive* and *distasteful* (*negative feelings toward object*: 1 – *Not at all*, 7 – *Very*) (M = 1.91, SD = .83,

α = .826)[5]. The presentation of the 'positive feelings towards object' items and the 'negative feelings towards object' items was counterbalanced between participants.

Participants were asked to rate their agreement with items related to how special they thought the object was (e.g. "This object is special", "This object is valuable", "This object is important", "This object should be protected", "This object belongs in a museum", "This object should be respected") (*object special*: $M = 3.22$, $SD = 1.06$, α = .864). Other items looked at how gross they believe the item to be (e.g. "This object is repugnant", "This object is disgusting", "This object should be destroyed") (*object repugnant*: $M = 2.28$, $SD = .96$, α = .794). Two items looked at the extent to which participants believed the item should be handled in a particular manner (e.g. "This object should only be used by certain people" "This object should only be used during special occasions") (*special treatment*: $M = 2.76$, $SD = 1.25$, α = .779). Participants were asked to rate items related to how they felt about the treatment of the object: "It felt wrong to treat the object as I did" and "I felt like I treated the object appropriately" (reverse coded) ($M = 3.05$, $SD = 1.19$, α = .513). Additionally, participants were asked to rate a variety of items about their experience including: "I found this experience relaxing;" "I enjoyed this experience;" "I found this exercise easy to complete;" and "I felt invested in this experience" (*positive experience*: $M = 4.16$, $SD = 1.44$, α = .872). All of these items were rated on a *1 – strongly disagree* to *7 – strongly agree* scale.

Participants were then asked if this activity reminds them of anything they do in their day-to-day life and, if so, to describe the activity.

[5] Because a large number of participants (42) did not report answers to these questions, results of this analysis will not be reported.

Participants in the group ritual conditions were asked to complete a measure of group identification ($M = 3.67$, $SD = .72$, $\alpha = .929$) (e.g. "I felt a bond with my group;" "It was pleasant to be a member of my group") (Packer & Chasteen, 2009**)**.

After completing these dependent variables, all participants completed a few different individual difference measures including the Big Five Inventory (Benet-Martinez & John, 1998; John, Donahue & Kentle, 1991; John, Naumann & Soto, 2008), a measure of general collective identification (Ungson & Packer, 2014; adapted from Packer & Chasteen, 2009), a measure of religiosity (Koening & Bussing, 2010) and the Disgust Sensitivity Scale (Haidt et al., 1994).[6] Finally, participants were debriefed and thanked.

Results

To test our hypothesis that group (vs. individual) rituals enhance the strength of evaluations of a ritual object, but the nature of ritualistic actions influences the valence of evaluations, we conducted a series of 2(Ritual Size: Individual, Group) x 2 (Ritual Action: *Positive* Synchrony Ritual, *Negative* Synchrony Ritual) ANOVAs on the key dependent variables: object dollar value, non-monetary evaluations of object value, evaluations of ritual actions/experience.

Object Dollar Value

The first of these ANOVAs focused on our primary dependent variable – appraisals of the monetary value of the ritual object. Seven participants either failed to answer this question or did not give a numeric response (e.g. 'not much; 'little'; 'not a lot') and so were excluded from this analysis. Additionally, participants who reported values over three standard deviations from the mean (N = 2; one in the negative,

[6] None of these individual difference measures moderated key findings.

individual condition and one in the positive, individual condition) were excluded from this analysis.[7] Results of this ANOVA revealed a significant main effect of ritual size, $F(1, 83) = 4.525$, $p = .036$, such that people in the group condition assigned the ritual object a higher monetary value ($M = 16.89$, $SD = 12.96$) compared to people in the individual condition ($M = 11.24$, $SD = 7.61$). Additionally, there was a main effect of ritual action type, $F(1, 83) = 6.998$, $p = .01$, such that people in the negative ritual condition valued the object more ($M = 15.39$, $SD = 12.72$) than those in the positive ritual condition ($M = 11.72$, $SD = 7.24$). Both of these main effects were qualified by a significant two-way interaction, $F(1, 83) = 5.026$, $p = .028$ (See figure 4).

In order to explore this interaction, simple effects test were conducted. Results of these tests revealed that participants in the negative group ritual assigned significantly greater monetary value to the object than those in the positive group ritual condition, $F(1, 83) = 8.142$, $p = .005$. Additionally, those in the negative group condition assigned more monetary value to the ritual object than those in the negative individual condition, $F(1, 83) = 12.04$. $p = .001$. There were no significant differences between the two positive ritual conditions, nor the two individual ritual conditions (both p's $> .77$). Overall, results from this analysis lend partial support for our initial hypothesis such that group rituals do enhance the strength of appraisals towards ritual objects (compared to individual rituals); however, contrary to hypotheses, this occurred only when the ritual actions were negative.

Non-Monetary evaluations of the ritual object

[7] Results of an ANOVA including these outliers revealed non-significant main effects of group-type condition ($p = .52$) and ritual type ($p = .212$) and a non-significant interaction ($p = .177$).

Next, we computed the same ANOVA on the dependent variables pertaining to attitudinal evaluations of the ritual object. Correlational analyses revealed a significant positive relationship between *positive feelings towards the object* and *object special* $r(78) = .38$, $p = .001$. As such, these items were aggregated[8]. Results of the ANOVA on this composite variable (*positive evaluations of ritual object)* revealed a trending main effect of ritual action type, $F(1, 74) = 3.091$, $p = .083$, such that participants in the negative ritual condition had more positive evaluations of the object ($M = 3.73$, $SD = .95$) than those in the positive ritual condition ($M = 3.42$ $SD = .85$). Neither the main effect of ritual size nor the interaction was significant (both p's > .15). Despite the lack of a significant interaction, we computed follow-up tests to gauge whether the pattern was similar to the findings with dollar value. Indeed, simple effects tests revealed that the difference in positive evaluations between positive and negative ritual actions was driven by the group conditions. Those in the negative group condition had more positive evaluations than those in the positive group ritual condition, $F(1, 74) = 4.267$, $p = .042$. The difference between the individual conditions was non-significant ($p > .8$), as was the difference between the positive group and positive individual and the negative group and negative individual (both p's > .24) (see figure 5).

Results of the ANOVA for how gross participants felt the object was revealed a trending main effect of ritual type $F(1, 85) = 2.75$, $p = .101$, such that those in the negative ritual condition thought the object was less gross ($M = 2.13$, $SD = 1.02$) than those in the positive ritual condition ($M = 2.42$, $SD = .88$) than those in the negative ritual condition. The main effect of ritual size and the interaction were not significant ($p > .24$

[8] ANOVA analyses on each of these items separately revealed trending patterns that mimicked those reported.

and $p > .14$, respectively). Although the interaction was not significant, we conducted follow up tests in order to determine the extent to which these findings fit the pattern of dollar value and *positive evaluations of ritual object*. Simple effects analyses revealed significant differences between the positive and negative group ritual conditions, $F(1, 85) = 4.232$, $p = .043$, and marginally significant differences between the negative individual ritual condition and the negative group ritual condition, $F(1, 85) = 3.501$, $p = .065$. There were no significant differences between the two positive ritual conditions or the two individual ritual conditions (both p's $> .84$) (See figure 6).

Taken together, analyses of variables pertaining to attitudinal evaluations of the ritual object present an interesting story: participants in the negative ritual condition found the ritual object to be more positive and less gross than those in the positive ritual conditions.

Evaluations of Ritual Actions/Experience

So far, these analyses seem to indicate that the ritual actions we conceived of as being 'negative' were actually resulting in more positive and less negative evaluations of the ritual object. However, participant's responses to how they felt about their treatment of the object provides an interesting insight; they provide some information as to whether the positive and negative ritual actions were as we conceptualized them as being. In other words, these items shed light on whether the 'positive' ritual actions were indeed positive and the 'negative' ritual actions were indeed negative.

A 2 x 2 ANOVA revealed a trending main effect of ritual type $F(1, 87) = 3.58$, $p = .062$, such that those in the negative ritual condition more strongly agreed they had treated the object in an inappropriate manner ($M = 3.29$, $SD = 1.25$) than did those in the

positive ritual condition (M = 2.83, SD = 1.08). Neither the main effect of the ritual size nor the interaction was significant (both p's > .75).

Finally a 2-way ANOVA was conducted examining differences in how positively participants thought of the experience. Neither of the main effects of ritual action type or ritual size or the interaction term was significant (all p's > .3).

Group identification

A t-test was conducted to see if the level of identification with the group varied as a function of ritual type in the group conditions. However, results were non-significant (p > .92), indicating that participants in the positive and negative group ritual conditions felt similarly about their ritual groups. Moreover, both collapsing across positive and negative group ritual conditions and analyzing each condition separately, there were no correlations between feelings of group connectedness and value judgments (all p's > .4).

Discussion

Overall, results from the second study indicate that ritual objects are judged as having the most monetary value when actions we conjectured in advance would have negative connotations are performed on them with a partner (but not when the same actions are performed individually). Furthermore, in the group negative condition, there was a tendency to have more positive evaluations of the object and to think of the object as less gross compared to the positive group ritual condition (although there is not a significant correlation between these two judgments). Interestingly, there were no differences in feelings of group connectedness based on the type of ritual action. Yet, it is clear from the analyses of monetary and nonmonetary evaluations of the ritual object

that the presence of another made a difference (at least when participants performed negative ritual actions).

As such, these results lend partial support for our original hypothesis – that object valuations are enhanced more in a group (as opposed to individual) ritual; however, unexpectedly, positive value increased only when the ritual was ostensibly based on negative actions toward the object. It is clear then that there is something about combining the presence of others and ostensibly negative actions, which led to higher value appraisals of ritual objects.

One plausible explanation for this is that the ritual actions that we classified as being negative were not in fact purely negative. Indeed, if we more closely examine the negative ritual actions – drop the object, push the object, put feet on the object – several other adjectives come to mind. For example, these actions might be thought as 'fun.' Although the lack of difference in how much participants enjoyed the ritual as a function of condition speaks against this possibility, there is no direct evidence that refutes this claim. Furthermore, it should be noted that the items that composed the levels of enjoyment factor include evaluations of how relaxing and how invested one was in the experience as well as general levels of enjoyment. The enjoyment factor seems to be tapping not only general enjoyment, but also perceptions of how engaging the ritual was, and, as such, is a qualitatively imperfect measure of fun. In the future, items and measures that more directly relate to how fun participants thought the ritual was will be included (e.g. "This activity was fun" and the PANAS-X).

Another possibility is that the negative actions might instead have been thought of as 'subversive'. If we consider the so-called negative ritual actions in this sense, it may

be that participants are acknowledging that the negative ritual actions are indeed unsuitable in some way, but instead of looking upon the object unfavorably as a result (as was hypothesized), the subversiveness of ritual actions actually contributed to the value of the object. The tendency for participants to believe that the negative ritual actions were more inappropriate than the positive ritual actions is consistent with this possibility. As such, the ritual creates a space for actions normally frowned upon to occur. From this authorized subversion of societal norms, stems the increased monetary and nonmonetary evaluations of the ritual object. On real-life illustration of this idea is that ancient Aeginetan festival of Poseidon. During this festival, the Aeginetans subverted the norm of boisterous feasting with family and friends by isolating themselves and feasting in silence for a length of time. As Bremmer argues, this "disturbance of the social order" (1999, p. 46) was an inherent aspect of ritual that signified its importance. Furthermore, although during this festival the individual partook in solitary action, they did so with the knowledge that their isolation and actions mimicked those of fellow festival participants. Similarly, we might conceptualize the 'negative' ritual actions as contributing to a social subversion, mimicked by fellow ritual participants, which signals its importance thus leading to a heightened monetary and attitudinal valuation of the ritual object.

Importantly, Bremmer's suggestion and our data imply that there is something important about the presence (real or imagined) of other people in the function of 'negative' ritual actions increasing the value of the ritual object. Although there were no differences found in feelings of group connectedness as a function of the type of ritual action, it may be that rituals in general allow for feelings of group connectedness, and the specific type of ritual action plays no part in this process of feeling group connectedness.

Indeed, the majority of theoretical and experimental work on ritual supports this claim (see Durkheim, 2012; Xyglatas et al., 2013). This past work has looked at wide variety of rituals involving a diversity of ritual actions, which supports the idea that despite variations in the specific ritual actions, rituals generally increase feelings of group connectedness.

However, our interest is not simply in rituals increasing feelings of group connectedness as an end in itself; we are interested in other effects of ritual: primarily how rituals might enhance evaluations of ritual objects. Yet, it would be foolhardy to ignore the possible relationship between feelings of group connectedness and evaluations of a ritual object. Although Study 2 indicated that there was no relationship between measured feelings of group connectedness and monetary valuations of a ritual object, this may be due to the lack of difference between positive and negative rituals in feelings of group connectedness for the reasons stated above.

Considering this, we decided to experimentally manipulate feelings of group connectedness (by way of manipulating how similar participants felt towards their fellow ritual participant) in Study 3, to directly explore the effects of group connectedness on evaluations of ritual objects. We chose to exclusively use the negative ritual actions as these actions demonstrated the effect of the presence of others on evaluations of ritual objects.

Study 3

Participants. Twenty-four (12 females) Lehigh undergraduates participated in exchange for .5 course credit.[9]

[9] The small sample size is the result of a limited participant pool in the Psychology department in the Spring of 2015. We are planning on 'topping up' the sample in the near future.

Procedure. The general procedure of Study 3 was the same as Study 2, with three major changes. Importantly, we eliminated the individual condition; all participants were in the group condition. Additionally, we varied whether participants were in a high-similarity or low-similarity condition. Participants were told that, before beginning the relaxation exercise, we would like them to know a little bit about each other. Under this pretext, we introduced them to a 'Getting to Know You' survey, which included questions about their attitudes on twelve items (randomly selected from Byrne, 1971) (See Appendix D for full list of questions). Participants were instructed to complete this survey with the knowledge that their answers would be shared with a partner and that they would receive their partners answers as well. After completing their survey, participants alerted the experimenter who then provided them with the survey of their partner. In actuality, the contents of their 'partner's' survey was manipulated such that participants were presented with a survey that mimicked their responses on 10 of 12 questions (high-similarity condition) or 2 of 12 questions (low-similarity condition). Experimenters randomly chose the questions that were to be mimicked. For questions that were not mimicked, the answers were randomly chosen. Experimenters were instructed to draw from a list containing randomized choices corresponding to each potential non-mimicked question. As such, experimenters selected either two (for the high-similarity condition) or ten (for the low-similarity condition) choices from that list as answers for the non-mimicked questions.

After being given a few minutes to look over their partner's answers, participants were led into the 'ritual room' (which had the same setup as in Study 2), where they were

given instructions about the relaxation exercise they would be completing with their partner.

The third major change was that unlike in Study 2, all participants were assigned to the negative ritual condition; the instructions for this ritual were the same as in Study 2.

After completing the ritual as in Study 2, participants were lead back into their individual cubicles where they completed the dependent measures. The dependent measures were the same as those used in Study 2. The primary dependent variable was the value appraisal of the object (M = \$18.20, SD = 12.77). Other items included *positive feelings toward object* (7 items, M = 3.83, SD = 1.02, α = .869) and *negative feelings towards object* (7 items, M = 2.11, SD = 1.05, α = .947), the extent to which the object was thought of as special (*object special:* 6 items, M = 3.09, SD = 1.38, α = .842), the extent to which the object was thought of as gross (*object repugnant*: 3 items, M = 2.00, SD = .82, α = .769), the extent to which the experience was thought of positively (*experience positive*: 3 items, M = 3.87, SD = 1.18, α = .777) and the extent to which participants thought the object should be handled in a specified manner (*special treatment*: 2 items, M = 2.09, SD = .98, α = .652). All participants were asked to complete a measure of group identification (Packer & Chasteen, 2009) (M = 3.62, SD = 1.00, α = .926). Additionally, all participants completed the Big Five Inventory (Benet-Martinez & John, 1998; John, Donahue & Kentle, 1991; John, Naumann & Soto, 2008), a measure of general collective identification (Ungson & Packer, 2014; adapted from

Packer & Chasteen, 2009), a measure of religiosity (Koening & Bussing, 2010) and the Disgust Sensitivity Scale (Haidt et al., 1994)[10].

Finally, participants were debriefed and thanked.

Results

In order to test the hypothesis that feelings of identification with fellow ritual participants influence value judgments of ritual objects, several t-tests were conducted comparing participants in the high similarity condition with those in the low similarity condition. Importantly, results indicated that the similarity manipulation was functioning as hypothesized; participants in the high similarity condition reported being marginally more connected with their fellow ritual participants (M = 3.95, SD = .78) than those in the low similarity condition (M = 3.28, SD = 1.1), t(22) = -1.733, p = .097.

Participants in the high similarity condition also viewed the experience somewhat more positively (M = 4.17, SD = 1.02) than those in the low similarity condition (M = 3.55, SD = 1.3), although this difference did not approach statistical significance (p > .21). Collapsing across conditions, these two measures were highly correlated, r(23) = .683, p < .001, indicating that the more similar participants felt to the fellow ritual participant, the more positively they viewed the experience.

Although the similarity manipulation functioned as expected and was linked to a more positive ritual experience, it did not have the hypothesized effect on object valuation. Specifically, we hypothesized that participants in the high similarity condition would place more value on the object than those in the low similarity condition. Interestingly, results were, if anything, in the opposite direction, t(20) = 1.354, p = .191; the pattern of means indicated that participants in the low similarity condition valued the

[10] As in Study 2, none of these individual difference measures moderated key findings.

object more (M = 21.82, SD = 16.8) than those in the high similarity condition (M = 14.59, SD = 5.59).[11] Interestingly, neither connection to group members nor perceptions of the experience were correlated with object valuations (both p's > .78).

In order to further explore what else might be occurring, t-tests were conducted on the other dependent measures. There were trending differences in how gross the object was thought of as being, t(22) = -1.74, p = .096. Participants in the high similarity condition thought the object was grosser (M = 2.78, SD = .87) than those in the low similarity condition (M = 1.72, SD = .68). However, there was no correlation between perceptions of how gross the object was perceived as being and how much value was placed on the object (p > .35).

Further analyses revealed that there were no significant or trending differences in how positively the object was perceived (p > .5) or how negatively the items was perceived (p > .7) as a function of condition. Additionally, as might be expected given that they performed the same actions, there were no differences in how appropriate participants felt their treatment of the object was (p > .7). Moreover, there were no differences in how special the ritual object was thought of as being or perceptions of whether the object should be handled in a specified manner (both p's > .6).

Overall, the results of the third experiment revealed that, contrary to our hypothesis, there was a weak tendency for participants who did not feel similar to their fellow ritual participants to value the object more than participants who did feel similar to their fellow ritual participants. Likewise, there was a marginally significant trend such that low similarity condition participants thought of the ritual object as being less gross

[11] Just as in Study 2, we screened for outliers. None of the participants reported values greater than three standard deviations from the mean.

than those in the high similarity condition. However, perceptions of how gross the object was and how much monetary value was ascribed to the object were not related. Given the null result for monetary evaluations and just one marginal effect across numerous dependent variables, it seems safe to say that the similarity manipulation had no effect. Furthermore, object valuations were not linked to either feelings of group connectedness or positive feelings towards the experience. Nonetheless, the small sample size should be taken into consideration and so any conclusions drawn from this study (whether marginal or null) are tentative in the larger realm of this research agenda.

General Discussion

This research was grounded in the hypothesis that the way in which a ritual is enacted would influence monetary and nonmonetary (e.g. attitudinal) valuations of ritual objects. We proposed the novel hypothesis that the nature of the action performed with a ritual object would influence judgments. Additionally, building upon past theoretical work from anthropology and evolutionary psychology, we conjectured that the presence of other ritual participants might be one important facet of ritual enactment that would influence monetary judgments. Combining these two predictions, we hypothesized that the type of ritual action performed with a ritual object would influence the *valence* of the evaluation of that object, while the presence of other ritual participants would *intensify* evaluations of the ritual object.

In order to test these hypotheses, three different studies were conducted. The first of these manipulated the type of ritual action performed individually in order to test the hypothesis that the manner in which a person interacted with a ritual object would influence judgments of that object; results indicated that the actions we conceptualized as

being 'disgust'-oriented yielded the highest monetary value for the ritual object. The second study manipulated the type of ritual action, as well as the presence of other ritual participants; results indicated that that the actions we conceptualized as being 'negative' yielded the highest valuations of the ritual object, but *only* when they were performed with another person. Finally, the third study manipulated feelings of similarity to fellow group members with the intention of assessing if feelings of group connectedness would influence judgments of the ritual object. Overall, results from this study (based on a very small sample) indicated that individuals who felt less similar to their fellow ritual participants had a tendency to value the object more than those who felt more similar to their fellow ritual participants.

Taken together, these results provide some support for the notion that ritual can intensify the value attached to objects, yet the pattern of intensification was inconsistent with our initial hypothesis. Specifically, the results of Studies 1 and 2 support the idea that at least some types of ritual actions can increase the perceived monetary value (and, in the case of Study 2, attitudinal valuations) of a ritual object. However, in both studies it was only the actions we conceptualized as *negative* that were associated with increases in perceived value.

Beyond this, some results also supported our hypothesis that the group nature of ritual is important. Specifically, in Study 2 the (putatively) negative ritual actions only resulted in intensified evaluations of the ritual object in the group (but not the individual) condition. Intriguingly, within both Studies 2 and 3 there was no relationship between feelings of group connectedness and monetary evaluations of the ritual object. These

results run contrary to both our initial hypothesis and the theoretical work in which that hypothesis was grounded.

We believe that there are several potential explanations for our finding that negative ritual actions increased monetary valuations of ritual objects. Below, we focus on several possibilities, discuss evidence (if any) in support of each explanation, and propose possible ways to test each explanation in future research. Importantly, given that we conceptualized the 'disgust' actions of Study 1 as being analogous to the 'negative' actions of Study 2, these explanations collapse across the 'disgust' and 'negative' actions, focusing on similarities between them (for other possible alternatives specific to 'disgust' and 'negative' actions, see discussion sections of Studies 1 and 2). Additionally, for the sake of consistency, the actions will be referred to with the labels given to them based on the original conceptualization (e.g. disgust and negative).

Possible Explanation 1: Negative Actions Increase Arousal

One possible explanation of our results is related to levels of physical engagement with the ritual object. It may be that the actions that we conceptualized as disgust (in Study 1) and negative (in Studies 2and 3) required more physical engagement/more intense activity in relation to the ritual object and, therefore, were more arousing to participants. Heightened feelings of arousal might then have translated into increased value judgments of the ritual object (Schacter & Singer, 1962; White, Fishbein & Rutstein, 1981).

A closer examination of our operationalization of positive and negative ritual actions provides some theoretical corroboration of this idea. Comparing the disgust (in Study 1) and negative (in Studies 2 and 3) actions (hereafter referred to just as negative

actions) with the positive and savor/neutral actions (hereafter referred to just as positive actions), it seems plausible that the negative actions are more physically taxing than the positive actions. Pushing the ritual object away, dropping it, putting it on the floor and then putting your feet on top it require greater physical engagement with the object than slowly unwrapping it, hugging it and gently holding it. Participants might have then attributed the physiological arousal they felt from the negative ritual actions towards the ritual object, which then translated into greater perceptions of the monetary value of that object. This translation of arousal to heightened monetary perceptions of the object can be understood as a misattribution of arousal (Dutton & Aron,1974; Schacter & Singer, 1962).

One obvious issue with this account is why, if negative actions increase arousal, did those actions only result in increased monetary evaluations of the ritual object in the group condition in Study 2? One possible explanation as to why only the group negative action condition contributed to heightened monetary valuations of the ritual object pertains to the ritual objects themselves used. In Study 1, the ritual object was a piece of chocolate. Chocolate, as a food item, can be considered a primary reinforcer or an item which needs no associations to indicate its value. As such, it is valuable in and of itself. On the other hand, the metal sphere used as the ritual, object in Study 2 does not share this primary reinforcer status and so relies on associations and other information to become valuable. Within our experimental paradigm, participants may have relied on cues from the other ritual participants of the item's value; confederates were instructed to take the exercise seriously, be engaged and signal interest in both the exercise and the object. Indeed, drawing upon literature from collective attention, (Bayliss et al., 2006)

we deliberately included this feature in our group rituals. Taken together, it may be that the ritual object used in Study 2 relied on associations and information (such as the attention of others) in order to be imbued with additional value[12]. On the other hand, the ritual object in Study 1, as a primary reinforce needed no such association. For both studies, the negative actions heightened the arousal, which then lead to enhanced monetary valuations of the ritual object, with the enhancement being based on informational derived value from Study 2 and inherent value in Study 1.

Overall, this arousal-valuation account is somewhat congruent with the results of Xygalatas and colleagues (2013), who found that high intensity rituals resulted in greater pro-social behavior and stronger identification with a more inclusive national identity. As discussed earlier, Xygalatas and colleagues concluded that high intensity rituals involved greater feelings of pain, which in turn translated into greater pro-social behavior. Although our experimental design certainly did not involve causing our participants pain, we can think of pain as a being related to arousal and intensity of the pain reported as a function of the intensity of the arousal (Latane & Schacter, 1962; Schacter & Wheeler, 1962; Singer, 1963). As such, we can reframe the results of Xygalatas and colleagues to be more analogous to our own – the more aroused ritual participants were the more pro-socially they behaved. Consequently the results of Xygalatas and colleagues as well as our own might support the mechanism of arousal as being important in ritual processes for creating both prosocial outcomes and the ritual endowment effect.

However, the arguably more arousing "negative" actions in our research did not lead to higher feelings of group connectedness in Study 2 and 3, as it did within

[12] Here, I say additional value as participants in the other three conditions still ascribed some value to the metal sphere.

Xygalatas et al. Furthermore, in Studies 2 and 3 there was no relationship between feelings of group connectedness and value placed on the ritual object. However, there are several possible explanations for this that might still allow for the arousal-valuation account. The items that were used to assess group connectedness within the present research looked at connection felt to fellow group members, which can be considered a subordinate identity. On the other hand, Xygalatas and colleagues found that pain perception and arousal was linked to stronger identification with a superordinate identity. It is possible that had we asked participants their level of identification with both a subordinate identity (e.g. fellow ritual participants) and a superordinate identity (e.g. Lehigh), those partaking in a more arousing ritual experience would report stronger identification with the latter, similar to Xyagalatas et al. In other words, perhaps the negative ritual actions somehow strengthen identification with a superordinate identity.

Possible Explanation 2: Negative Actions and Construal Level Theory

Above, we proposed that the putative negative ritual actions – pushing the ritual object away, dropping it – may lead to higher levels of arousal which could then translate into higher valuations of the ritual object. A second potential explanation involves the possibility that the actions themselves create a more abstract representation of the ritual object by way of the physical distance they create between the object and ritual participants; this in turn may be connected to higher value placed on the spatially distant object. This can be linked to construal level theory, which conjectures that the psychological distance that one feels from an object (or event) influences their understanding of that object as being abstract or concrete (Liberman & Trope, 1998; Trope & Liberman, 2003; Trope & Liberman, 2010). Psychological distance has several

different dimensions: temporal, social, hypothetical, and most relevant to the current discussion, spatial. Across these dimensions, if distance between the self and the object is high than the object is thought of more abstractly; on the other hand, if the distance between the self and the object is low, then the object is thought of more concretely (Williams & Bargh, 2008).

One particular application of construal level theory relates to the association between the type of construal made about an object and the value placed upon that object. Importantly, this theory argues that thinking of objects abstractly would increase their value if high-level aspects of the object are inherently valuable. On the other hand, if the high-level aspects of are negative, then thinking of an object abstractly will result in decreased valuations of that object. Similarly, when construing an object in a low-level manner, the value will be increased if the low-level aspects of it are positive, but will be decreased if the low-level aspects of it are negative. Thus, it is the combination of the type of construal being made and the actual content of the construal that changes valuations of a construed object.

One example of this is research that manipulated the level of psychological distance of an object and examined changes in perception of that object. Results indicated that participants had intensified judgments of the atypicality of an atypical event and the typicality of a typical event when the event was further away (Henderson, Fujita, Trope & Liberman, 2006). Typicality is an abstract feature of an object; increasing the psychological distance of that object thus leads to heightened judgments of that abstract feature (as opposed to the more concrete features).

The study described above involved an immense manipulation of spatial distance – participants (students in New York) were told that the event in question either occurred in New York or Florence. However, spatial distance need not be as gross in order to activate higher-level construal. In a series of experiments, Williams and Bargh (2008) manipulated spatial distance by having participants mark off points in varying distances apart on a Cartesian plane. Participants who marked off points that were relatively further apart demonstrated high level construal activation. Thus, spatial distance need not be measured in miles in order to activate high-level construal.

Applying this theory to the current research, we can point to the idea that the negative behaviors involved actions that created a spatial distance between the participant and the ritual object. This is particularly evident in the actions of Study 1 – in which participants were told to push the chocolate away from themselves – but can also be seen in the ritual actions of Studies 2 and 3 in which participants were told to drop the object, push the object and put the object on the floor. On the other hand, the positive actions in all three studies – bring the object closer, hugging the object, holding the object, smelling the object - involved reducing the spatial distance between the participants. If we map on construal level theory, it may be that the negative actions activated a more abstract conceptualization of the ritual object by way of increasing spatial distance while the positive actions activated a more concrete conceptualization of the ritual object by way of dissolving spatial distance.

Of course, this account raises a particular question: why would a more abstract, high level construal conceptualization of the ritual object lead to a higher valuation of that object? As discussed above, high-level construal activation would lead to increases

in the object's value when the abstract properties of the object are innately valuable. As such, for the construal level account to hold, then the abstract properties of the ritual objects must be inherently valuable.

Trope and Liberman (2010) posit that one facet of an abstract property of an object is its relevance to one's goals. In all three studies, a particular goal was presented: in Study 1, the goal was to 'engage in a consumption experience'; in Studies 2 and 3, the goal was to 'relax and concentrate'. In both cases, the ritual object was crucial to the goal. In Study 1, the only way that the goal of learning how people eat would be accomplished would be for participants to eat something and the only item available to be eaten was the ritual object, the chocolate. Similarly, in Studies 2 and 3 the goal was relaxation and concentration. In the directions about the 'relaxation exercise,' we introduced the ritual object, a metal sphere, as a tool to aid people "maintain calm concentrated attention" (See Appendix C). As such, in both of these cases, the abstract notion associated with the object was its importance in the goal of the experience. Importantly, the goals of each of the studies – to consume and to relax – can be considered a characteristically valuable or positive goal. Thus, focusing on the ritual object's crucial role in the valuable goal of the ritual would increase the monetary value of that ritual object.

In order for this account to be plausible, additional discussion is required for Study 2. Based on the account provided in the above paragraph, one might question why heightened monetary valuation only occurred when participants performed the negative actions in the group condition, but not when in the individual condition. It may be that for Study 2, the high level property of the ritual object that is being construed is the group

(Durkheim, 2012). In other words, in the group conditions, the ritual object is thought of as symbolic of the group and only when in the negative group ritual action is that high level property activated. Results indicated that, collapsing across conditions, participants felt moderately connected with their group, indicating that the group aspect does hold some inherent value.

In conclusion, it is possible that that negative ritual actions increase feelings of spatial distance between ritual participants and ritual objects; in turn that may lead to a higher level construal of the ritual object which in turn leads to higher valuations of that ritual object.

Future Directions

Overall, results from this research provide several avenues for future research. Here we will focus on two possible avenues informed by earlier discussions of explanations for our results.

However, before any future research is done, it would be important to refine our experimental paradigms such that the actions we believe are negative are indeed negative and those that we conceptualize as being positive are indeed positive. Doing so would be important to validate our intuitions that the ritual actions are tapping into constructs we believe them to be.

There are several ways to go about doing this. We could have participants rate the extent to which they believe different types of actions (including the actions used in the present research, but also adding new ones) are: positive, negative, entertaining, fun, enjoyable, relaxing, arousing, etc. Additionally, we could have participants individually perform a series of ostensibly positive and ostensibly negative ritual actions and have

them explicitly or implicitly (e.g. a lexical decision task) rate the extent to which they found those actions positive or negative. A third option would be to gauge participants understandings of a positive or negative action is by asking them, "If you were to behave negatively towards an object, describe how you would treat that object." After validating or revising our paradigms, we would then move forth with research more directly aimed at testing our explanations.

Based on the arousal explanation, one direction for future research is to more directly assess and/or manipulate the level of arousal felt during each type of ritual action. One way in which this could be accomplished is through the use of galvanic skin response sensor. Such a tool would provide an objective measure of the levels of arousal felt during each ritual action type condition. Additionally, it would be interesting to experimentally manipulate participants' attribution of their arousal levels to see if that influences value judgments of ritual objects. For example, participants could complete the same negative and positive ritual actions as part of a 'relaxation' exercise (as in the current research) or as part of 'energizing' exercise. The energizing exercise would presumably give participants a reason for their heightened level of levels of arousal, which may lead to heightened evaluations of the ritual experience but not the ritual object. On the other hand, participants who felt aroused during the 'relaxation' exercise might experience a disconnect between their aroused state and how they are supposed to be feeling, leading to an attribution of arousal to the ritual object (Festinger, 1962). Finally, we could also directly manipulate the level of arousal by randomly assigning participants to either high arousal ritual condition or low arousal ritual condition (while also varying the type of ritual action performed). Specifically, we might tell participants

in the high arousal ritual action condition that they are being recorded and that the video will be shown to an audience, while those in the low arousal condition will receive no such information. Past research has found that the knowledge of being watched leads to heightened levels of arousal via heightened social anxiety (Schlenker & Leary, 1982).

Based on the construal level account, one possible future direction would be to have participants engage with the ritual object in either a positive or negative way and then ask participants to describe the ritual object; answers could then be coded to see if they include more abstract construals of the object or more concrete construals of the object (Vallacher & Wegner, 1987). Following the earlier discussion, I would hypothesize that the types of negative ritual actions used in the present studies would result in higher instances of abstract construals whereas the types of positive ritual actions used in the present studies would result in more instances of concrete construals.

Another possible direction would be to more cleanly experimentally manipulate the physical actions of the ritual. In other words, in conducting a study informed by the hypothesis that spatial distance between participants and ritual objects would result in higher valuations of those ritual objects, the ritual actions would be more aimed at either creating or dissolving spatial distance than those of the present studies. Additionally, different types of psychological distance could be manipulated – as in the case of the third study of the present research. For example, participants could perform the same ritual actions on the object; however we could vary whether they are told that object represents some abstract concept (like the future) or if the object represents some more concrete concept (like the next meal). Psychological distance could also be manipulated via temporal distance. One way in, which this could be operationalized, is by varying the

wording of the dependent variable such that participants are asked: "Imagine you have the opportunity to buy this object [tomorrow/one month] from now. How much would you be willing to pay for the object?" Based on earlier reasoning, I would hypothesize that the more abstract the symbolic meaning and the greater the psychological distance of the ritual object was, the higher the value placed on the ritual object.

Conclusion

Overall, this line of research found that putative negative ritual actions lead to higher monetary valuations of ritual objects than positive ritual actions. It is possible that our "negative" actions were not, in fact, negative. On the other hand, if we grant that the actions are "objectively negative," we have outlined several possible explanations for why negative actions might increase the perceived value of ritual-connected objects. Future research will be aimed at exploring these explanations.

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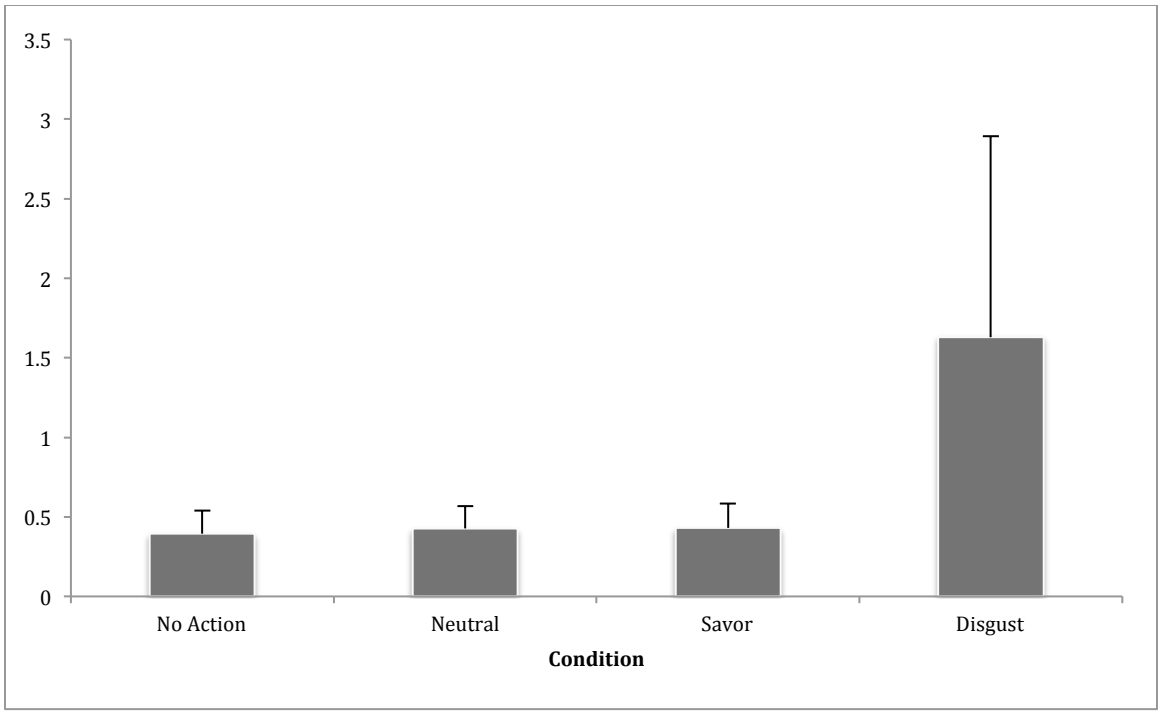


Figure 1 - Willing to pay for chocolate as a function of action condition. Error bars represent 95% CI

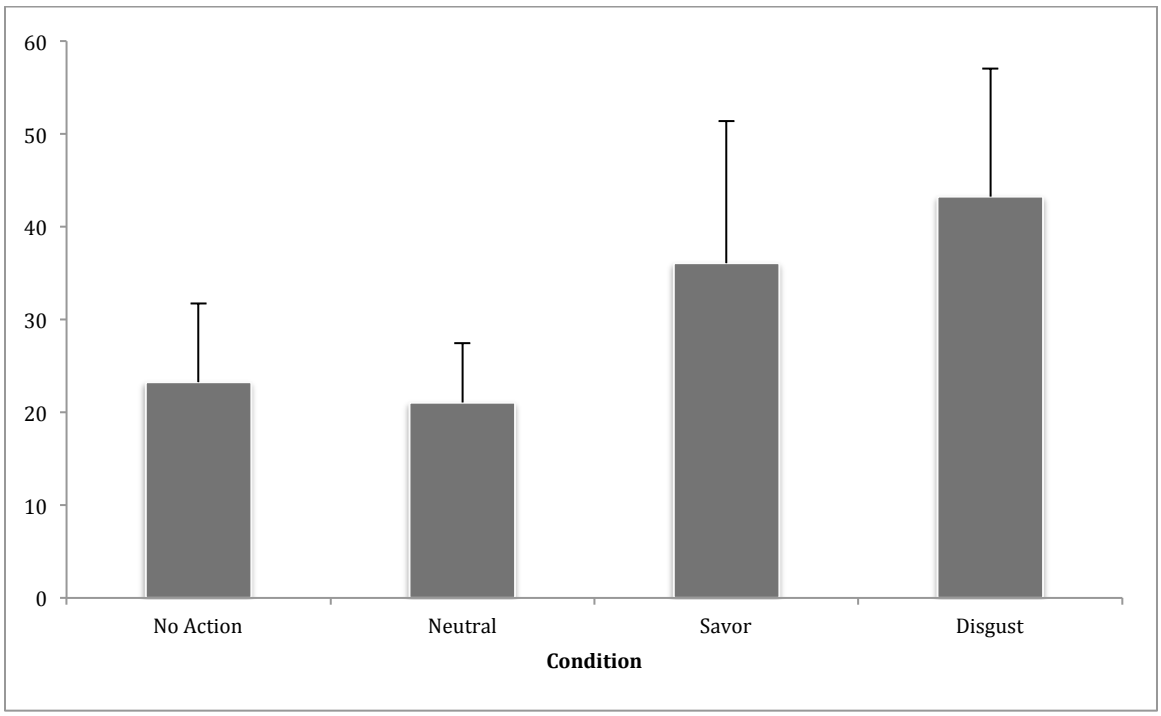


Figure 2 - Time spent eating chocolate; Error Bars: 95% CI

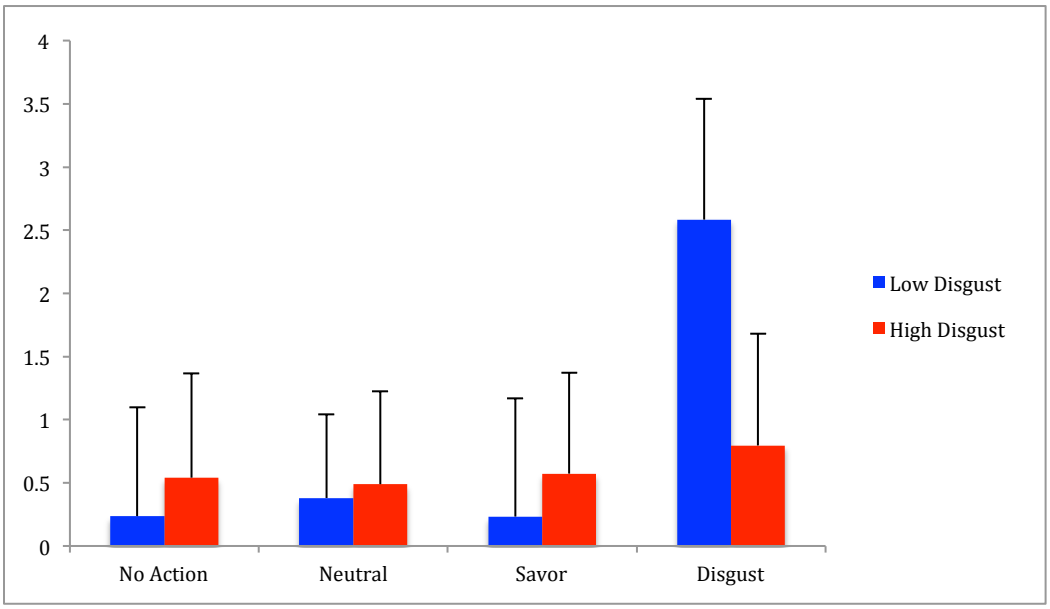


Figure 3 - Willing to pay as a function of action condition and disgust sensitivity.

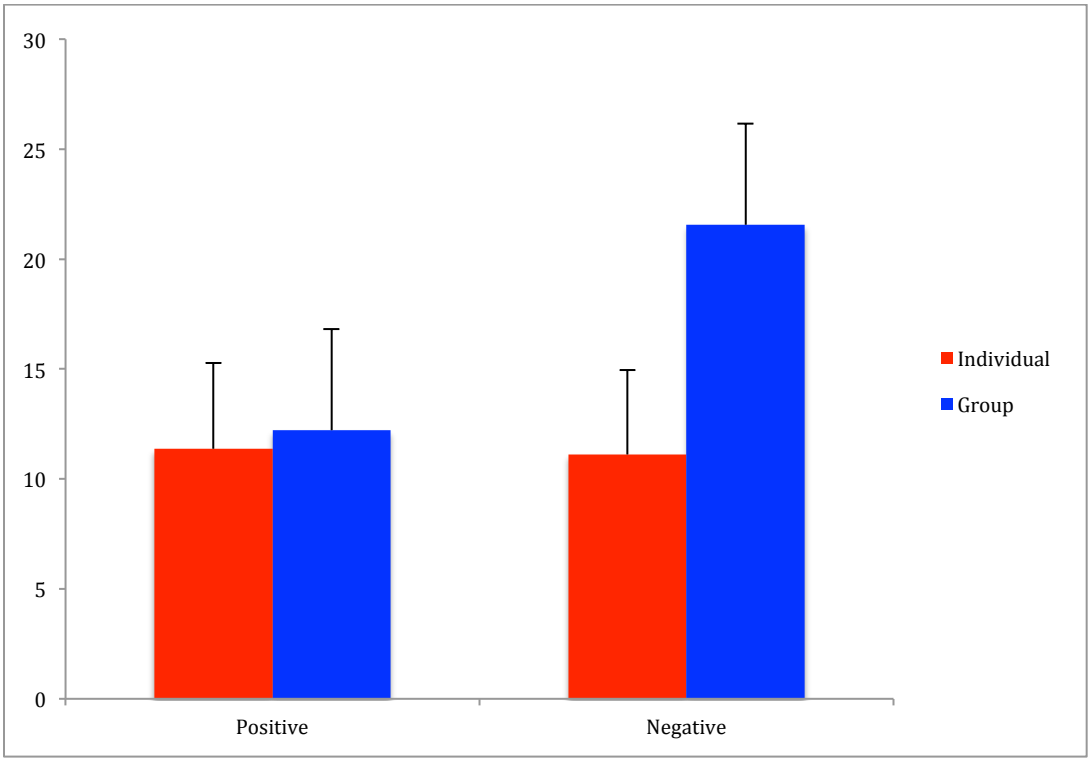


Figure 4 - Monetary value appraisal of ritual object. Error bars: 95% CI

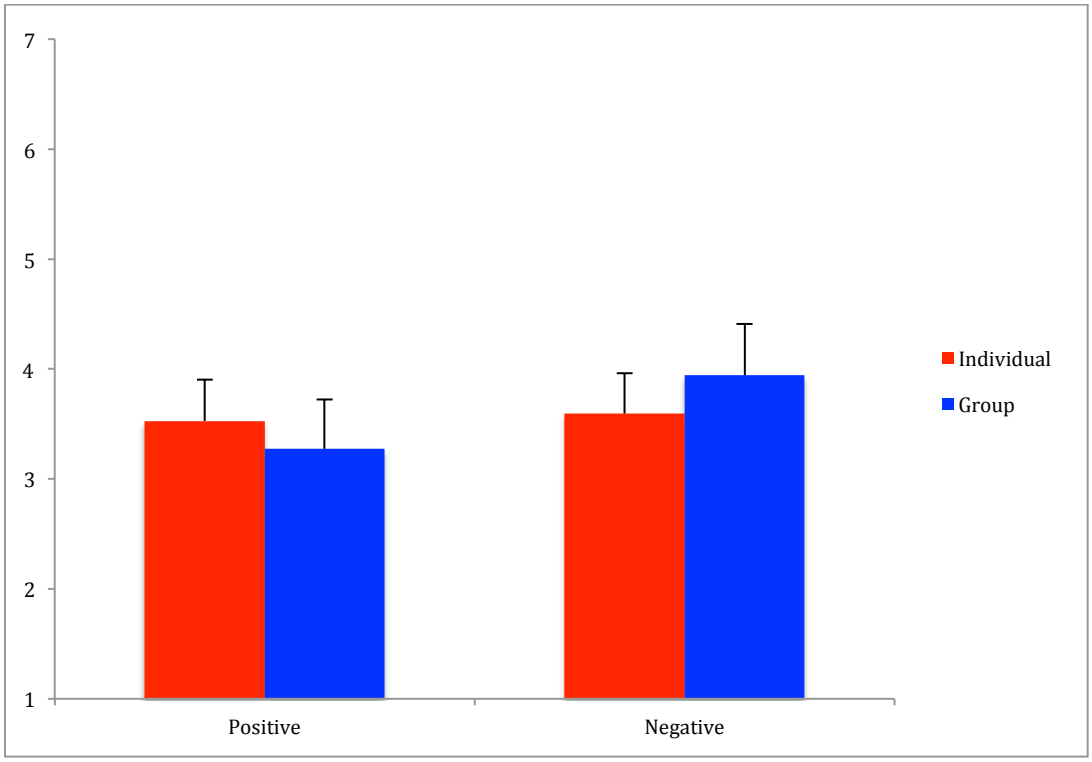


Figure 5 - Positive evaluations of ritual object. Error bars: 95% CI

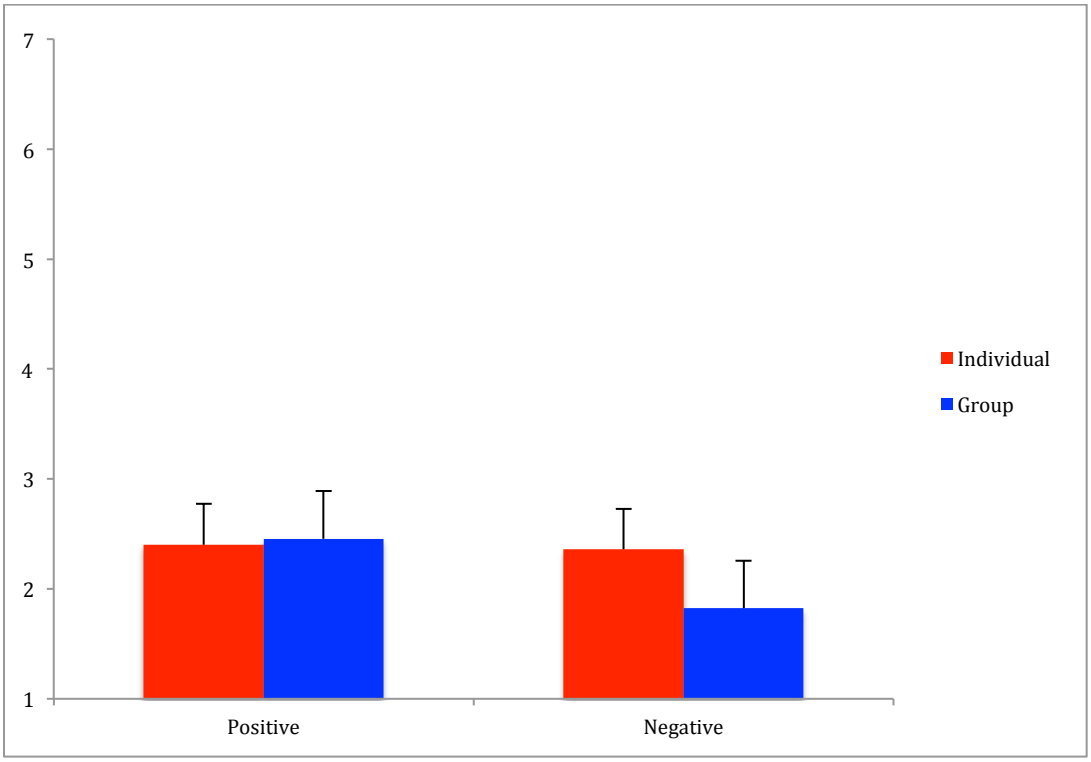


Figure 6 - Object gross. Error bars: 95% CI

Appendix A

Pilot Study: Shared Attention, Synchronized Action, and the Ritual Endowment Effect

We conducted a pilot study seeking evidence for the ritual endowment effect. All participants took part in ritualistic "exercise to build concentration and relaxation" in proximity to a rather mundane object. We used a mundane object because it had no discernable external value associated with it, which might contaminate the effect that the ritual conditions had on the perceived value. In other words, we wanted to explore what the effect of ritual on the object was independently of any pre-conceived notions of the object's value. Based on the literature discussed above, we varied whether participants were instructed to collectively attend closely to the mundane object and whether they were instructed to collectively and synchronously interact with the object.

Method

Participants. Sixty-nine Lehigh University undergraduate students (36 females) participated in exchange for course credit.

Procedure. Participants arrived individually at the lab, provided informed consent, and were introduced to a study; participants were told that the researchers were interested in "how to improve concentration through relaxation" and that, after completing a few questionnaires, they would be completing a relaxation exercise. Next, participants completed a variety of individual difference measures, including the Big Five Inventory (Ashton & Lee, 2009).

Participants were randomly assigned to one of four conditions. Three of these involved participation in a group ritual, and one involved participant in an individual

ritual. In the group ritual conditions, participants were told that they would be completing this exercise with two other students who were fellow participants; in actuality, those participants were confederates instructed to ensure that the ritual was taken seriously and completed properly. In the individual ritual condition, participants learned that they would be completing the relaxation exercise by themselves. All participants received these basic instructions and completed the individual difference measures in individual cubicles. After, participants they were lead to the 'ritual room.' The room had been set-up to include a circular table with three chairs and dim "mood lighting." The mundane ritual object—a smooth piece of wood—was already on the table when participants entered the room.

Group ritual conditions. In all the group ritual conditions, the confederates were already seated

around the table when the participant entered. In all conditions participants began the ritual activity by reading instructions about how to focus attention on one's breathing and how doing so can contribute to a calm, concentrated mind. They learned that they would do this relaxation and concentration exercise while listening to a soundtrack. The soundtrack involved a repetitive, "ritualistic" frame drum pattern along with three cues—a bell, a gong, a short phrase about breathing by a Buddhist nun—that participants were told to use as reminders to bring their attention back to their breathing, should it wander (see Baseline Instructions in Appendix A). The *baseline condition* included only these features. The baseline ritual condition functions as our control condition for the other group ritual conditions.

Other group ritual conditions were created by adding features to those present in the baseline condition. Specifically, the baseline + shared attention condition added the instruction that ritual participants should focus their attention on the mundane object in addition to their breathing. And, the baseline + shared attention + shared action condition added the same instruction regarding attention to the object plus additional instructions indicating three actions that the ritual participants should perform together with the mundane object. Instructions for both these conditions are available in Appendix A.

Individual ritual condition. The individual ritual condition was exactly the same as the baseline + shared attention + shared action condition except all the instructions were reworded to be appropriate for an individual. Thus, in addition to receiving the basic instructions about breath focus, the individual also focused on and interacted with the mundane object to a very strong degree, just like participants in the group baseline + shared attention + shared action condition. This condition was included to account for possible demand characteristics in the baseline + shared attention + shared action group ritual condition. Specifically, we were worried that simply by instructing participants to perform actions and attend to the object, the experimenter is implying that the object has a high value (or that she wants participants to think that). That is to say, just as artifacts in a museum might be thought of as more valuable because of they must be handled in a certain way by trained professionals, having the experimenter instruct participants to treat an object a certain way might increase perceptions of their value. If participants in the individual ritual condition and the baseline + shared attention + shared action condition gave the object a similar value, it would lend evidence to the idea that the results were the consequence of an experimenter demand effect. On the other hand, if there were a

difference between these two conditions, with the group condition showing a stronger ritual endowment effect, the original hypothesis (that group rituals increase value of associated ritual objects) would be supported.

Dependent variables. The ritual lasted a total of seven minutes in all conditions. Afterwards, participants returned to their individual cubicle and filled out a second packet. This packet contained the primary dependent variable for the study: "Imagine that the object sitting on the table during the breathing exercise was for sale. How much would you be willing to pay to bring that object home with you?" (M = \$4.15, SD = 5.7). Other variables assessed included monetary evaluations of both the ritual experience ('relaxation exercise') (M = \$5.44, SD = 7.03) and the soundtrack (M = \$2.36, SD = \$4.55).

Additionally participants were asked a variety of items about their experience; these items were measured on a five-point scale with endpoints labeled Strongly Disagree (1) and Strongly Agree (5). Six of these items were related to feelings of *relaxation* (e.g. *the breathing exercise made me feel more relaxed; I felt highly "focused" during the breathing exercise; my mind was clearer than usual during the breathing exercise*) (M = 3.4, SD = .79, α = .873). Another three of these items were related to their feelings of connection with the object, or *object connectedness* (e.g. *the object on the table improved my ability to stay focused during this exercise; I felt a sense of connectedness with the object on the table; the object supported my ability to feel relaxed and concentrated during the exercise*) (M = 2.59, SD = 1.09, α = .877). Participants in the group ritual conditions were asked two additional sets of items. The first of these were two items related to their perception of *group performance* (e.g. *I think we were all focused on the*

exercise as it happened; I think my group and I did well during these exercises) (M = 3.44, SD = 1.12, α = .819). The second was four items which tapped feelings of *group connectedness* (e.g. *the presence of others made me like this exercise more than I would have otherwise; the presence of others was an important part of this exercise; I would guess that members of my group had a lot in common with one another and with me; I felt like I was an important part of this exercise and helped my group members stay focused*) (M = 2.52, SD = .92, α = .808). Finally, participants were debriefed and thanked.

Results

As noted above, our primary analyses concern differences among the group ritual conditions. If we find effects of our group ritual manipulations, then we will examine the individual ritual condition to assess the role of demand characteristics.

To test for the ritual endowment effect, we began by analyzing participants' judgments of the monetary value of the ritual object. For these analyses, a square root transformation was applied to the monetary value judgments because there was a strong positive skew in the responses of participants.

In order to determine if there was an effect of condition on the perceived value of the ritual object, a one-way ANOVA was performed. Results of this ANOVA revealed that there were no significant differences between the three group conditions, $F(2, 46)$ = .0002, $p > .99$. Thus, our manipulations had no effect on monetary value judgments of the object

Next, we examined whether the effect of the ritual was moderated by ideology. Related to our earlier discussion of Sosis and Ruffle (2003), perhaps certain individual

differences draw people to certain types of rituals, and as such, rituals differentially affect people. Because participants did not elect to be part of this particular study, we cannot know for sure who would have chosen to participate. Nevertheless, we reasoned that ideology might be an important moderator. This notion was based on two competing hypotheses. The first of these posits that liberals might value the experience more. This was based on past research, which has found that, on average, liberals tend to be more open to new experiences than conservatives. As our paradigm was likely new and different to most our participants, we thought that openness would be an important moderator of our effects. Additionally, there is some evidence of a correlation between neuroticism and liberalism. We thought that individuals who were more neurotic might have more positive evaluations of our 'ritual experience' as it was designed to be calming and relaxing. The second hypothesis posits that conservatives might value the experience more. This hypothesis was motivated by Haidt who argues that conservatives tend to be more 'group-y' than liberals. As the group nature of the ritual experience is both theoretically and experimentally emphasized, perhaps conservatives would value the ritual experience more than liberals, who, according to Haidt, tend to be more individualistic.

In order to test this hypothesis, an ANCOVA was performed. This analysis included the three group ritual conditions, participant sex,[13] ideology (seven-point scale, very liberal to very conservative), and all their 2- and 3-way interactions. This analysis

[13] Preliminary analyses revealed that there was a weak difference between males and females' monetary evaluations of the object $t(67) = 1.44$, $p = .155$. Women ($M=1.65$, $SD=1.45$) tended to value the object more than men ($M=1.14$, $SD=1.49$) As such, sex was added to the analysis to control for the effect of sex.

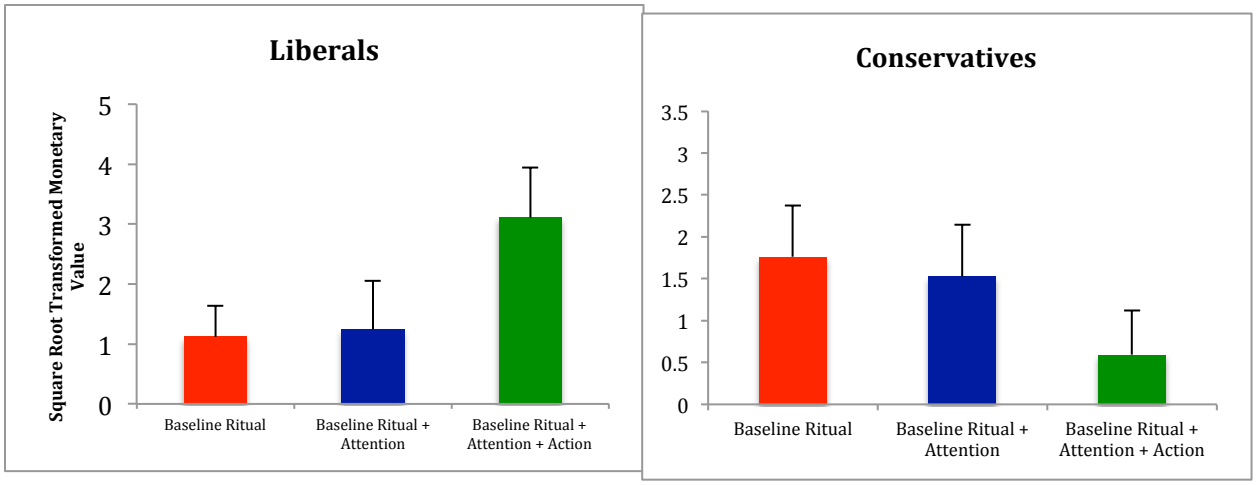


Figure 1. Condition x Ideology Interaction

revealed that the main effects of condition, sex, and ideology were not significant, all *F*s<.98, *p*s> .33. There was, however, an interaction between ideology and ritual condition, $F(2,37) = 3.109$, $p = .057$. Predicted means are shown in Figure 1.

Post-hoc analyses revealed that liberals valued the object more in the attention + action condition than in the attention condition ($p = .116$) or the baseline ritual condition ($p = .05$). The attention and baseline conditions did not differ, $p > .89$. There were no differences across conditions for conservatives, *p*s > .15. Additionally, there was an interaction between condition and sex $F(2,37) = 2.621$, $p = .087$. Post-hoc analyses revealed that there were no significant differences amongst females based conditions, *p*s>.162. However, there was a trending difference amongst males between the baseline attention + action and baseline + attention conditions such that the object was given more value in the baseline ritual attention + action than the baseline ritual + attention, $p = .095$ (See Figure 2).

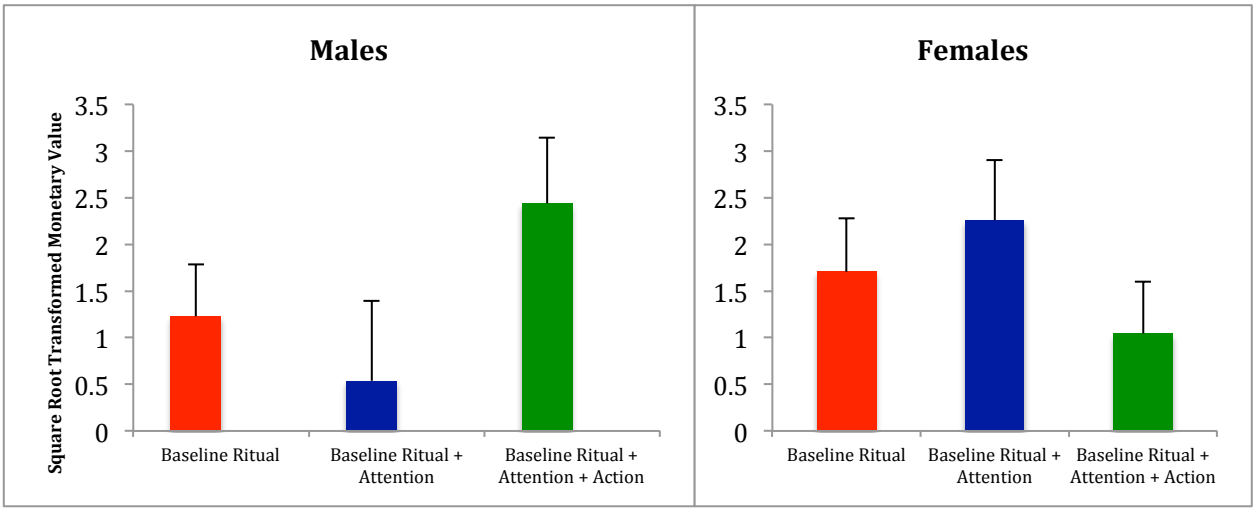
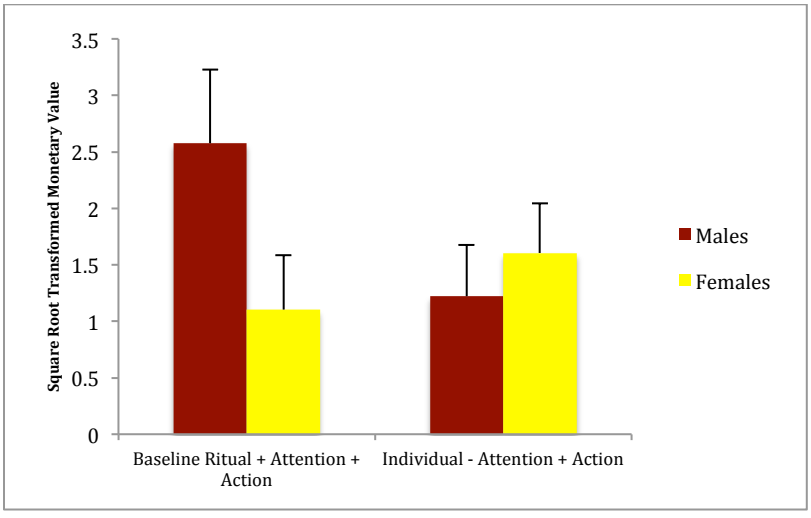


Figure 2. Condition x Sex Interaction

Neither the interaction between sex and political ideology nor the 3-way interaction were not significant, *F*s< .72, *p*s > .4.

As discussed earlier, an individual attention + action condition was included in order to account for potential demand characteristics. We included this condition to determine whether the ritual endowment effect in the attention + action condition, if found, was the result merely of telling participants to attend to and interact with the object in a specialized fashion (implying that the object is important). If such a demand characteristic were happening, then there should be no difference between the group attention + action condition and the individual attention + action condition (because they received the same instructions). The crucial test here is whether these conditions are different among liberals, as liberals were the only ones to show a ritual endowment effect in the analyses above. To test this, an ANCOVA was performed with condition (individual attention + action, group attention + action), sex, ideology, all their 2- and 3-way interactions predicting monetary value judgments. Results revealed a main effect of political ideology, $F(1, 28) = 5.053$, $p = .033$. And, crucially, there was a marginal

interaction between condition and political ideology, $F(1, 28) = 2.838$, $p = .103$. Liberals valued the object more in the group condition ($M = 3.109$) than the individual condition ($M = 1.595$), $p = .099$. This suggests that the effect of the baseline ritual + attention + action condition for liberals in the analysis reported above was not the result of demand characteristics, but rather, the result of the manipulation itself. There were no differences amongst conservatives. Additionally there was a marginally significant interaction between condition and sex, $F(1, 29) = 3.26$, $p = .082$ (See Figure 3). Post-hoc analyses revealed that there were no significant differences in monetary value assigned to the object amongst females, $p > .44$. However, there is a trending difference amongst males such that males value the object more in the group condition than in the individual condition, $p = .099$. No other main effects or interactions were significant, all Fs < 1.14, ps > .29. This lends credence to the idea that the patterns of result found in the ANCOVA were not the result of demand characteristics but the result of the group ritual experience.[14]



[14] Results from ANCOVAs examining neuroticism as a moderator look very similar to these effects involving ideology, except that the 'demand' account fares better with neuroticism than it does with ideology. Liberals don't seem to simply follow the experimenter's potential demand to value the object; however, neurotics do.

Figure 3. Condition x Sex Interaction

In addition to measuring the monetary value participants attached to the object, we asked them to make evaluative ratings of the object (items were described above). The same 3-way ANCOVA analysis was performed using object connection as the dependent variable. This analysis revealed a marginally significant main effects of condition, $F(2,36) = 2.888$, $p = .069$, and sex, $F(1,37) = 2.597$, $p = .116$. Both of these main effects were qualified by interactions. The interaction between sex and condition was significant, $F(2,36) = 7.317$, $p = .002$. Females connected with the object more in the baseline ritual + attention + action condition than the attention condition, $p = .026$. There were no differences between the baseline ritual + attention + action condition and the other two conditions, $ps > .2$. On the other hand, there were significant differences amongst the males based on condition, $F(2, 36) = 5.864$, $p = .006$. Males connected with the object the significantly more in the baseline ritual + attention + action condition than the baseline ritual + attention condition ($p = .002$) and marginally more than baseline ritual condition (.11). The difference between the baseline ritual and baseline ritual + attention was significant as well (p = .029). Predicted means are shown in Figure 4.

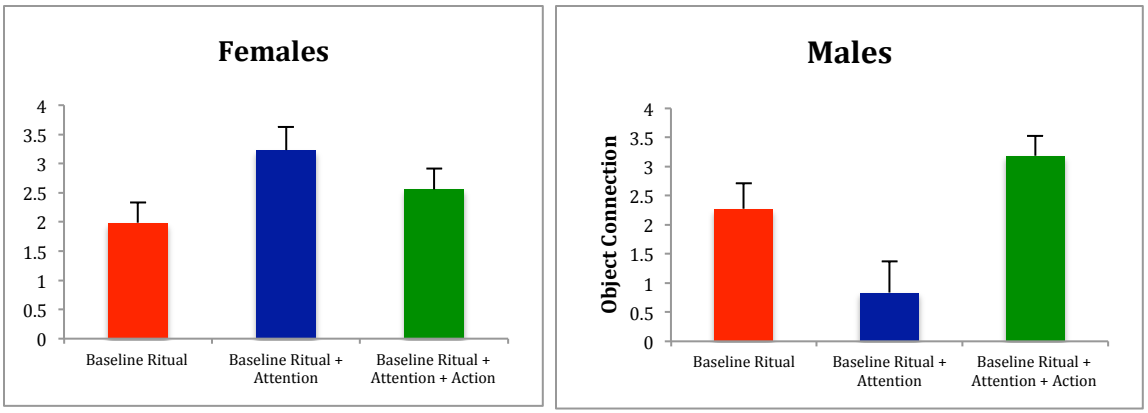


Figure 4. Condition x Sex Interaction for Object Connection

There was also an interaction between political ideology and ritual condition, $F(2,36) = 3.250$, $p = .05$. Post-hoc analyses revealed that liberals connected with the object most in the attention + action condition, followed by the baseline condition, then the attention condition, $F(2, 36) = 3.945$, $p = .028$. The difference between the attention + action condition and the attention condition was significant ($p = .008$) and the difference between the attention + action condition and the baseline ritual condition was marginal ($p = .061$). There was no difference between the attention and the baseline conditions ($p = .173$). Conservatives showed no difference based on condition, $F(2, 36) = .494$, $p = .614$. Predicted means are shown in Figure 5.

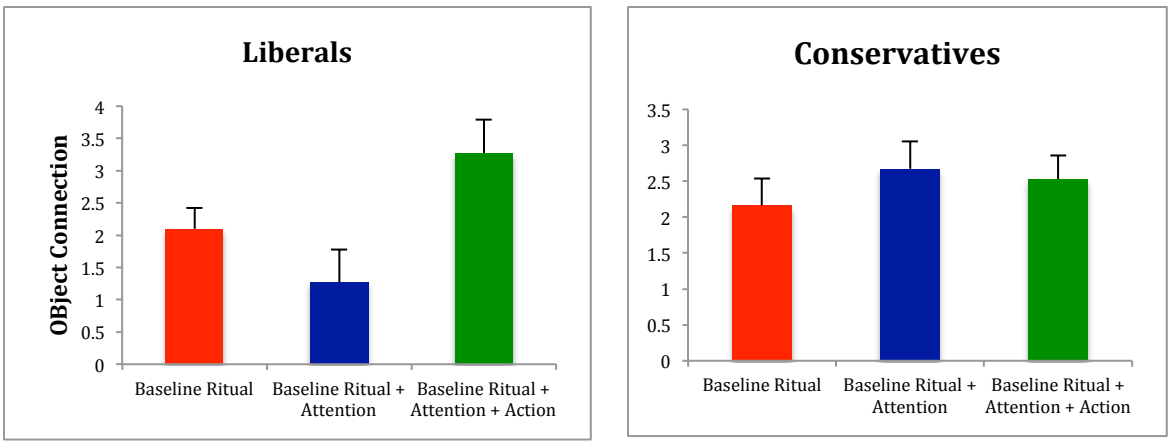


Figure 5. Ideology x Condition Interaction on Object Connection.

Additionally, there was an trending interaction between sex and political ideology $F(1,36) = 3.006$, $p = .092$. Liberal males connected with the object more ($M = 2.778$) than liberal females ($M = 1.656$), $p = .039$. Conservative males and conservative females did not differ from one another, $p = .93$. The 3-way interaction was not significant, $F(2, 36) = 1.44$, $ps > .24$.

The pattern of results for monetary judgments of the object is not replicated for monetary judgments of the value of the experience. A three-way ANCOVA was performed (including the three group conditions, sex and ideology) with experience value as the dependent variable. The only marginally significant effect was sex, $F(1, 36) = 2.839$, $p = .101$. Females ($M = 2.139$) valued the object somewhat more than men ($M = 2.139$). No other main effects or interactions were significant, Fs < 1.88, ps > .16. Similarly, when soundtrack value was analyzed as a dependent variable using the same 3-way ANCOVA, only a main effect of sex was found, $F(1, 36) = 3.283$, $p = .079$. Females tended assign higher value ($M = 1.435$) to the soundtrack than males ($M = .666$), All other main effects, 2- and 3-way interactions were not significant, all Fs < .88, ps > .42.

Above, we mentioned that following the ritual procedure we measured feelings of relaxation and concentration, perceptions of how well one's group performed the exercise, feelings of connection with fellow group members, and feelings of connection to the ritual object. We examined whether these variables showed a similar pattern to object valuations with an eye toward looking for plausible mediators of the effects described above. Accordingly, we analyzed each of these variables using an ANCOVA that included group ritual condition, sex, ideology, and all the 2- and 3-way interactions among these variables. In particular, we were looking for possible explanations as to why liberals placed high value on the object in the group action + attention condition – did they feel more relaxed; did they feel like their group performed well; did they feel a strong connection to the group?

Relaxation. We analyzed participants' ratings of how relaxed they felt. An ANCOVA was performed using condition, sex and political ideology, and all their 2- and

3-way interactions as factors. None of the main effects, nor any of the 2- or 3-way interactions were significant, Fs < .91, ps > .34.

Group performance. The same 3-way ANCOVA analysis was performed using group performance as the dependent variable. This analysis revealed a significant main effect of condition, $F(2,36) = 3.318$, $p = .048$. Group performance was rated most high in the attention + action condition ($M = 3.929$), which was marginally different from baseline ritual condition ($M = 3.252$) ($p = .114$) and significantly different from the attention condition ($M = 2.74$) ($p = .02$). The baseline ritual condition and the attention condition were not different from one another ($p > .27$). There was also a trending main effect of sex, $F(1,37) = 2.896$, $p = .097$. Males rated group performance higher ($M = 3.616$) than females ($M = 2.998$). The main effect of political ideology was not significant, nor were any of the 2- or 3-way interactions, Fs < 1.67, ps > .2.

Group connectedness. The same ANCOVA was performed to examine feelings of group connectedness. Results of this ANCOVA revealed a significant main effect of condition, $F(2,36) = 5.768$, $p = .007$. Post-hoc analyses revealed that feelings of group connectedness were highest in the attention + action condition ($M = 3.149$) and ratings differed significantly from both baseline ritual condition ($M = 2.328$) ($p = .018$) and the attention condition ($M = 1.908$) ($p = .003$). The baseline ritual condition and the attention condition were not different from one another ($p > .26$). The main effects of ideology and sex were not significant nor were the 2- and 3-way interactions, Fs < 1.7, ps > .19.

In sum, participants' ratings of their relaxation, group performance, and group connectedness suggest that feelings of group connectedness might be one possible link to higher monetary value judgments of the ritual object. Ideally, we would want to test if

group connectedness is mediates the effect of ideology and condition on object value, however we do not have the statistical power to do so. However, given the theoretical foundation of this research discussed in the introduction, it is plausible that feelings of group connectedness might be translated into higher value placed upon the ritual object in question.

Appendix B

Enjoyment Items:
I really enjoyed tasting the chocolate.
I savored every bite.
I really enjoyed the consumption experience of tasting the chocolate.
I enjoyed the texture of the chocolate.

Negative Evaluations of Chocolate's Taste Items:
This chocolate could be improved.
The chocolate's taste was cloying.
The chocolate tastes overly processed.
I felt like there was not enough flavor in the chocolate.

Negative Experience Items:
I felt like the taste of the chocolate was too intense.
The chocolate had a bad aftertaste.
There were some subtle flavors in the chocolate I did not enjoy.

Improve chocolate items:
The chocolate could be improved.
I've had better chocolate than this.

Appendix C (Group Conditions):

Today, you and your partner will participate in a calming experience. This experience will take the form of a relaxation exercise, in which you will be asked to focus your attention on an external object, the sphere on the table. Many people find it hard to concentrate on the calming experience of this exercise. An external object serves as an "anchor" for our minds – giving us something to focus on so that we are not distracted and we can fully immerse in the experience.

Additionally, during the course of this exercise, you and your partner will be asked to manipulate the object in several different ways. These manipulations will take the form of scripted, repetitive actions with the object on the table. Performing such scripted, repetitive actions with an object can help people maintain calm, concentrated attention on the experience. Focusing on the object on the table and performing actions with the object will help you and your partner fully immerse in the calming experience.

During this experience, there will also be music playing. During the music you will hear a repetitive drumming the background. Additionally you will hear a bell, a voice and a gong at different intervals throughout the music. Each noise will be associated with a particular action. Thus, every time you hear the bell sound, you and your partner should complete the first action; every time you hear the voice, you and your partner should complete the second action; and every time you hear the gong, you and your partner should complete the third action.

You and your partner should cycle through these actions until the music stops:

Positive Group

(1) Each person takes a turn holding the object. The object should be hugged against your body for two breaths and then passed clockwise. The last person holding the object should return it to the center of the table.

(2) Together, you and your partner reach out and grab the object with your fingertips. Together, lift the object into the air, hold it there for 3 breaths, and then gently set it down and let go.

(3) Each person takes a turn holding the object between their hands, while the object is on the table. The object should be held in that position for one breath. It should then be passed clockwise. The last person to hold the object should return it to the center of the table.

Negative Group

(1) Each person should reach out and grab the object with their fingertips. Together, they should hold the object up for three breaths. They then should drop the object onto the table from about 2 inches above the table.

(2) Each person takes places the object in front of them for one breath. Then the object should be pushed to the other person, while the person pushing the object turns their head in the opposite direction. Then, the object should be pushed back to the first person, who should then place the object back on the center of the table.

(3) Put the object on the floor. Then, while the object is on the floor, you should place both their feet gently on top of it. Then, lift the object back up, and pass it to your partner. Your partner should then put it on the floor, then put their feet on top of it. Finally, the object should be returned to the center of the table.

Appendix C (Individual Conditions):

Today, you will participate in a calming experience. This experience will take the form of a relaxation exercise, in which you will be asked to focus your attention on an external object, the sphere on the table. Many people find it hard to concentrate on the calming experience of this exercise. An external object serves as an "anchor" for our minds – giving us something to focus on so that we are not distracted and we can fully immerse in the experience.

Additionally, during the course of this exercise, you will be asked to manipulate the object in several different ways. These manipulations will take the form of scripted, repetitive actions with the object on the table. Performing such scripted, repetitive actions with an object can help people maintain calm, concentrated attention on the experience. Focusing on the object on the table and performing actions with the object will help you fully immerse in the calming experience.

During this experience, there will also be music playing. During the music you will hear a repetitive drumming the background. Additionally you will hear a bell, a voice and a gong at different intervals throughout the music. Each noise will be associated with a particular action. Thus, every time you hear the bell sound, you should complete the first action; every time you hear the voice, you should complete the second action; and every time you hear the gong, you should complete the third action.

You should cycle through these actions until the music stops:

Positive Individual

(1) Hold the object. The object should be hugged against your body for two breaths. Return the object to the center of the table.

(2) Reach out and grab the object with your fingertips. Lift the object into the air, hold it there for 3 breaths, and then gently set it down and let go.

(3) Hold the object between your hands, while the object is on the table. The object should be held in that position for one breath. Return it to the center of the table.

Negative Individual

(1) Reach out and grab the object with your fingertips. Hold the object up for three breaths. Then drop the object onto the table from about 2 inches above the table.

(2) Places the object in front of you for one breath. Then push the object to the opposite end of the table while turning your head in the opposite direction. Then, reach over and pull the object back to the center of the table.

(3) Put the object on the floor. Then, while the object is on the floor, you should place both their feet gently on top of it. Then, lift the object back up, and return it to the center of the table.

Appendix D

1) Community Bomb Shelters (check one)
____ I strongly believe that the federal government should provide community bomb shelters.
____ I believe that the federal government should provide community bomb shelters.
____ I feel that perhaps the federal government should provide community bomb shelters.
____ I feel that perhaps the individuals should provide their own bomb shelters.
____ I believe that individuals should provide their own bomb shelters.
____ I strongly believe that individuals should provide their own bomb shelters.

2) Group Opinion (check one)
____ I feel that people should always ignore group opinion if they disagree with it.
____ I feel that people should usually ignore group opinion if they disagree with it.
____ I feel that people should often ignore group opinion if they disagree with it.
____ I feel that people should often go along with group opinion even if they disagree with it.
____ I feel that people should usually go along with group opinion even if they disagree with it.
____ I feel that people should always go along with group opinion even if they disagree with it.

3) Birth Control (check one)
____ I am very much in favor of most birth control techniques.
____ I am in favor of most birth control techniques.
____ I am mildly in favor of most birth control techniques.
____ I am mildly opposed to most birth control techniques.
____ I am opposed to most birth control techniques.
____ I am very much opposed to most birth control techniques.

4) Creative Work (check one)
____ I enjoy doing creative work very much.
____ I enjoy doing creative work.
____ I enjoy doing creative work to a slight degree.
____ I dislike doing creative work to a slight degree.
____ I dislike doing creative work.
____ I dislike doing creative work very much.

5) College Education (check one)
____ I strongly believe it is very important for a person to have a college education in order to be successful.
____ I believe it is very important for a person to have a college education in order to be successful.
____ I believe that perhaps it is very important for a person to have a college education in order to be successful.

____ I believe that perhaps it is not very important for a person to have a college education in order to be successful.
____ I believe that it is not very important for a person to have a college education in order to be successful.
____ I strongly believe it is not very important for a person to have a college education in order to be successful.

6) Grades (check one)
____ I am very much in favor of the university grading system as it now exists.
____ I am in favor of the university grading system as it now exists.
____ I am mildly in favor of the university grading system as it now exists.
____ I am mildly opposed in favor of the university grading system as it now exists.
____ I am mildly opposed in favor of the university grading system as it now exists.
____ I am opposed in favor of the university grading system as it now exists.
____ I am very much opposed in favor of the university grading system as it now exists.

7) Comedians Who Use Satire (check one)
____ I very much enjoy comedians who use satire.
____ I enjoy comedians who use satire.
____ I mildly enjoy comedians who use satire.
____ I mildly dislike comedians who use satire.
____ I dislike comedians who use satire.
____ I very much dislike comedians who use satire.

8) Undergraduates Getting Married (check one)
____ In general, I am very much in favor of undergraduates getting married.
____ In general, I am in favor of undergraduates getting married.
____ In general, I am mildly in favor of undergraduates getting married.
____ In general, I am mildly against undergraduates getting married.
____ In general, I am against undergraduates getting married.
____ In general, I am very much against undergraduates getting married.

9) War (check one)
____ I strongly feel that war is sometimes necessary to solve world problems.
____ I feel that war is sometimes necessary to solve world problems.
____ I feel that perhaps war is sometimes necessary to solve world problems.
____ I feel that perhaps war is never necessary to solve world problems.
____ I feel war is never necessary to solve world problems.
____ I strongly feel that war is never necessary to solve world problems.

10) Novels (check one)
____ I dislike reading novels very much.
____ I dislike reading novels.
____ I dislike reading novels to a slight degree.
____ I enjoy reading novels to a slight degree.
____ I enjoy reading novels.

____ I enjoy reading novels very much.

11) Freshman Having Cars on Campus (check one)
____ I am very much in favor of freshmen being allowed to have cars on campus.
____ I am in favor of freshmen being allowed to have cars on campus.
____ I am in favor of freshmen being allowed to have cars on campus to a slight degree.
____ I am against freshmen being allowed to have cars on campus to a slight degree.
____ I am against freshmen being allowed to have cars on campus.
____ I am very much against freshmen being allowed to have cars on campus.

12) Situation Comedies (check one)
____ I dislike situation comedies very much.
____ I dislike situation comedies.
____ I dislike situation comedies to a slight degree.
____ I enjoy situation comedies to a slight degree.
____ I enjoy situation comedies.
____ I enjoy situation comedies very much.

NATASHA L. THALLA

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EDUCATION

Lehigh University *Anticipated 2018*
Advisors: Dr. Michael Gill and Dr. Dominic Packer

Lehigh University *2015*
Masters of Science
Thesis: *For what its worth: 'Negative' ritual actions increase the value of ritual objects.*
Advisors: Dr. Michael Gill and Dr. Dominic Packer

New York University *2013*
Cum Laude
Bachelor of Arts in Psychology; Bachelor of Arts in Anthropology/Classical Civilization, Minor in Religious Studies
Departmental Honors in Psychology
Thesis: *Differences in the Treatment of Moral Transgressors Based on their Group Status and the Magnitude of their Transgressions*
Advisor: Dr. Jay Van Bavel

EXPERIENCE

Graduate Student at **Michael Gill's Morality and Blame Lab**
Designed experiments, created stimuli, written IRB proposals, ran participants and analyzed data for experiments investigating: (1) the psychological mechanisms underlying rituals and (2) how perceptions of control influence blame judgments

Graduate Student at **Dominic Packer's Group Processes Lab**
Designed experiments, created stimuli, ran participants and analyzed data for experiments investigating the group processes which underlie scams and cons

Honors Student at **Jay Van Bavel's Social Perception and Evaluation Lab**
Designed and ran participants in an experimental study assessing the effect of the importance of reputation on the treatment of in-group moral deviants

Research Assistant at **Tessa West's Interpersonal Perception Lab**
Ran participants in an experimental study assessing means through which anxiety levels can be reduced in cross-racial dyadic interactions
Responsible for: video coding, data entry

Research Assistant at **Jeremy Ginges's Social and Political Psychology Lab**
Ran participants in an experimental study assessing the effect of subliminal primes of order/disorder on moral judgments
Responsible for: data processing, data entry

GRANTS

Not in My House: In Group Policing and the Effect of Reputation on In-Group Punishment (2012 – 2013). NYU Dean's Undergraduate Research Fund: $1,000.

POSTERS and PRESENTATIONS

Thalla, N. & Packer, D. J. (2015, June). *Your friendly neighborhood conman: People are more likely to be deceived by members of their ingroup*. Poster to be presented at Annual Meeting of Association of Psychological Science.

Thalla, N., Gill, M.J, & Packer, D. J. (2015, April). *For what its worth: 'Negative' ritual actions increase the value of ritual objects*. Talk presented at Lehigh Psychology Departmental Brown Bag, Bethlehem, PA.

Thalla, N. & Gill, M. J. (2015, March). *Raising the threat level: Threat increases punitiveness towards actors without volitional control*. Poster presented at Annual Meeting of Eastern Psychological Association, Philadelphia, PA.

Thalla, N. & Gill, M. J. (2015, February). *Synchronous Action Affects More than "Fellow Feeling": Group Rituals Involving Synchrony can Increase the Perceived Monetary Value of Mundane Objects*. Poster presented at Society for Personality and Social Psychology, Long Beach, CA.

Twardawski, M., Yudkin, D., Rothmund, T., Van Bavel, J. J., & Thalla, N. (2014, June). *Limited working memory capacity promotes in-group favoritism in punishment.* Paper presented at the annual meeting of the International Society for Justice Research, New York, NY.

Yudkin, D., Thalla, N., & Van Bavel, J. J. (2014, June). *Not in my house: Group membership changes crime and punishment.* Paper presented at the annual meeting of the International Society for Justice Research, New York, NY

Thalla, N. & Gill, M.J, (2014, April). *Effect of Ritual on Evaluation of Mundane Objects*. Talk presented at Lehigh Psychology Departmental Brown Bag, Bethlehem, PA.

Thalla, N., Yudkin, D., & Van Bavel, J. J., (2014, Feburary). *Heightened Out-Group Punishment for Moral Misdeeds.* Poster presented at Society for Personality and Social Psychology, Austin, TX.

Thalla, N., Yudkin, D., & Van Bavel, J. J., (2013, April). *'Its okay, he's one of us': The Limits of In-Group Favoritism with Regards to Moral Transgressions*. Talk presented at the NYU Undergraduate Research Conference, New York, NY.

TEACHING EXPERIENCE

Instructor **Psychology 121**
Lehigh University, Summer 2015

Instructor **Psychology 186**
Lehigh University, Spring 2015

Teaching Assistant **Psychology 121**
Dr. Erica Schneid
Lehigh University, Spring 2015
Guest Lectured for Three Classes on Persuasion and Attitudes

Teaching Assistant **Psychology 153**
Dr. Michael Gill
Lehigh University, Spring 2014
Guest Lectured for one class on Professional Personality Assessment

Teaching Assistant **Psychology 001**
Dr. Michael Gill
Lehigh University, Fall 2013
Guest Lectured for Two Classes on Social Psychology

SERVICE

Colloquium Assistant, Lehigh University (2014 – 2015)
Poster Coordinator, LVAIC (April, 2015)

HONORS and AWARDS

College of Arts and Sciences Summer Research Fellowship ($4,444), Lehigh University (2014)
Founder's Day Award, NYU
Fellowship at International School for Jain Studies
International Honor Society in Psychology, NYU Chapter (Psi Chi)
Presidental Honors Scholar, NYU
Dean's List, NYU

PROFESSIONAL AFFILIATIONS

Association for Psychological Sciences (2014 – Present)
Society for Personality and Social Psychology (2013 – Present)
Eastern Psychological Association (2014 – Present)