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Motivating Morality: Linking Moral Foundations and Fundamental Motives

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Motivating Morality: Linking Moral Foundations and Fundamental Motives

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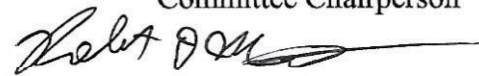
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### Abstract

What motivates moral judgments? The fundamental motives model proposes that people have a set of psychological mechanisms that motivate behavior (Kenrick et al, 2011). The self-protection motive functions to protect one from threats from others or from pathogens. Moral Foundations Theory proposes that people rely on a set of moral intuitions when making moral judgments (Graham et al., 2011). The sanctity/degradation foundation is one of these moral intuitions. However, an initial examination of a relationship between the self-protection motive and sanctity/degradation moral foundation revealed no relationship. Alternatively, trends were found among other foundations associated with group cohesion: the loyalty/betrayal and authority/subversion foundations. Such a relationship seems reasonable given activation of the self-protection motive is associated with ingroup preferential phenomena such as ingroup biases and outgroup prejudice (Becker et al., 2010; Kenrick, 2011), just as are the loyalty/betrayal and authority/subversion foundations (Graham et al., 2013). Lack of an effect on the sanctity foundation may also support the idea that the self-protection motive serves two separate functions: self-protection from physical harm and self-protection from pathogen exposure (Neuberg, Kenrick, & Schaller, 2011). Therefore, it was explored how concerns with self-protection from pathogen cues and concerns with self-protection from physical threat are related to moral judgments. Expected interactions were not found. However, exploratory analyses were conducted and discussed further.

*Keywords:* moral foundations theory, fundamental motives, self-protection, sanctity, loyalty, authority

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### **Motivating Morality: Linking Moral Foundations and Fundamental Motives**

Morality has been a topic discussed among philosophers and psychologists for centuries. What do people consider right and wrong? Why do moral rules and norms vary from culture to culture, or person to person? The moral rules that one sets guide our behaviors and social interactions, providing safety and order within society. Without these moral rules, humanity might be in a constant state of disarray. Without rules regarding fairness and caring, people may disregard others' feelings and safety, steal their resources without question, and abandon those in need. If no rules governed how people contribute and function as members of a group, people may not trust others and lose the benefits of protection and shared resources that come with being a member of a tribe. If there were no rules describing the sacredness of practices or objects, religious practices might cease, people may neglect traditions, and may be less inclined to preserve one another's wellbeing. Therefore, it is easy to argue that morality is necessary for survival as a social species.

Despite its' lengthy tradition, debate remains over how morality is developed and what is *truly* right and wrong. People tend to vary in their definitions of morality, but psychological research may be able to provide clarity concerning why differences occur. Moral Foundations Theory (MFT) proposes a possible explanation of how morality functions. MFT uses evolutionary reasoning to describe the psychological mechanisms that influence how moral judgements are made (Graham et al., 2013). Each of several moral modules are thought to serve specific evolutionary functions and influence which moral transgressions are believed to be wrong and how severe the transgressions may be considered. Given that some models hold that certain motives come online at different points during life, a starting point for such an exploration may be to look at what motives each foundation may serve.

The fundamental motives model (FMM) proposes a series of core motives that, when activated, guides behavior (Kenrick, Griskevicius, Neuberg, & Schaller, 2010). The FMM is also rooted in evolutionary reasoning, proposing that certain motivational systems serve specific evolutionary functions. Some of the proposed elements of FMM appear to have overlapping evolutionary purposes and triggers with those proposed by MFT, which could indicate a potential association. For example, both the self-protection fundamental motive and the sanctity moral foundation serve to protect one from harm. The nature of such a relationship was explored across two studies.

In the following, the fundamental motives model is discussed in detail and the self-protection motive, specifically. Then MFT is explored, and the function of each foundation is explained. Finally, it is explored how the motives proposed by FMM may underly the foundations proposed by MFT.

### **Fundamental Motives Model**

The fundamental motives model proposes that there are a set of psychological mechanisms that motivate behavior which solved certain evolutionary problems (Kenrick et al., 2010). These mechanisms are arranged in a hierarchy beginning with motives to acquire basic needs and extending to secondary motives for survival. There are seven fundamental motives in the hierarchy: immediate physiological needs, self-protection, affiliation, status/esteem, mate acquisition, mate retention, and parenting. Each of these motives serves to solve a specific evolutionary challenge (Kenrick et al., 2010).

Using these motives, Kenrick et al. reshaped Maslow's hierarchy of needs to reflect the fundamental nature of these motives. Maslow (1943) had proposed a framework which included more basic needs such as physiological needs (food, water, and shelter) and safety, and



progressed to more socially oriented needs, such as social (belonging/love), esteem, and finally, self-actualization (McLeod, 2007). However, Kenrick et al. (2010) excluded self-actualization, as they felt that Maslow had defined it too broadly. Because Maslow had defined self-actualization as reaching one's peak personal potential, it could mean different things to different individuals. A writer might reach the peak of their career as a best-selling author; or a chef may reach their goal by opening their dream restaurant. They argued that this variation along with its infrequent realization makes it difficult to identify as a "need." Therefore, it was decided to remove it entirely.

Rather, they replaced self-actualization with reproductive motives. While not everyone wants to or does reproduce, humans seem to generally have a drive to seek a mate and care for children. Thus, Kenrick et al. (2010) renovated Maslow's hierarchy of needs by retaining physiological needs, self-protection, affiliation, and esteem from Maslow's hierarchy and replacing self-actualization with motives associated with mating and parenting.

Kenrick et al.'s (2010) also revised how motives function. Maslow had proposed that one must fulfill the lower-level needs of the hierarchy before continuing to address those at higher levels (McLeod, 2007). However, Kenrick et al. observed that people have the ability to ignore some motives (such as hunger) to address higher order needs (e.g., parenting or status). An example may be a parent putting aside their own hunger to care for their own hungry child. Further, their reorganization reflected how lower order needs persist as needs across the lifespan.

Kenrick et al. (2010) did, however, retain one important element of Maslow's hierarchy. Specifically, he too held that motives do not appear to become active until certain developmental events take place. For example, mating motives do not become active until puberty, once reproduction is possible. Once one begins puberty, there is a new drive to begin dating or seeking

a mate, which eventually leads to feeling motivated to retain a mate when one is acquired and a subsequent drive to have and care for children. These motives remain functional throughout life and can become active for various reasons. For instance, the mate acquisition motive can become active at any point when someone is looking for a sexual or romantic partner, even if they already have one and are looking for another. The mate retention motive becomes active when cues indicate a threat towards an existing relationship, such as another person showing interest towards one's mate. The parenting motive remains functional even after children are grown and the adult children may need assistance or when grandchildren are born (Kenrick et al., 2011).

Each of these fundamental motives involve a suite of mechanisms designed to solve related adaptive problems and are activated by proximate triggers of those adaptive problems (see Table 1). The self-protection motive serves the evolutionary function of avoiding or protecting oneself from perceived threats. This motive includes proximate triggers related to threats from others as well as triggers that indicate contagious diseases (Kenrick, 2010). While the self-protection motive is active, it can lead to behavior that may be discriminatory. For example, when primed with a threat, people tend to show increased in-group bias and conformity (Kenrick, Neuberg, Griskevicius, Becker, & Schaller, 2010). Specifically, when in a dark room (meant to increase anxiety and perceived threat), people are more likely to conform, show in-group favoritism, and stereotype outgroups as more threatening (Schaller, Park, & Faulkner, 2003). Participants also become more vigilant of male out-group members (a group most prone to pose a threat) after being primed with threat; this occurred both when primed with a frightening movie clip and when primed with an audio clip describing a soldier on patrol (Becker et al., 2010; Kenrick, 2011).

Table 1

*Self-Protection Motive vs. Behavioral Immune System*

<b>Properties</b>	<b>Self-Protection</b>	<b>Behavioral Immune System</b>
<i>Evolutionary function</i>	Protect one from threat, either from others or from pathogen exposure	Protect one from pathogen exposure
<i>Triggers</i>	Angry male faces, darkness, unfamiliar surroundings, people with morphological abnormalities	Indicators of illness (coughing, sneezing), morphological anomalous individuals
<i>Individual differences that influence salience</i>	Being male or large, exposure to violent trauma, high fear of pathogen exposure	Fear of pathogen exposure, disgust sensitivity
<i>Behavioral implications</i>	Discrimination towards males and outgroup members (especially immigrants)	Discrimination against elderly, obese, disabled, and immigrants

Further, there are similarities between the self-protection motive and the behavioral immune system. The behavioral immune system is a suite of psychological mechanisms that protect against possible illness by responding to cues of disease risk and eliciting behaviors to avoid pathogen exposure (Schaller, 2015). Although concerns with self-protection include concern about disease, there has been some suggestion that disease avoidance is its own fundamental motive. That is, Neuberg et al. (2011) have suggested that self-protection and disease avoidance are two separate threat management systems, whose primary differences are the type of threats they are protecting a person from: others or illness. However, although there is a difference in the source of the potential threat, the behavioral responses are nearly identical in that they both can lead to people to avoid out-groups. Further, disease avoidance and self-protection are moderately correlated with one another (Neel, Kenrick, White, & Neuberg, 2016).

Therefore, disease avoidance and self-protection may be separate mechanisms but share the function of threat management.

Managing threat also guides some moral norms, such as the those related to the sanctity/degradation foundation. This foundation has close ties to the behavioral immune system as it primarily functions to protect one from pathogen threat (Graham, et al., 2013). Other moral foundations serve to protect one from threats, but in varying ways. Moral Foundations Theory provides a potential explanation for why people differ in what they think is right and wrong as well as what evolutionary functions morality may serve (Graham et al., 2013). A review of the functions these foundations are thought to serve suggests potential ways each may serve certain fundamental motives.

### **Moral Foundations Theory**

Moral Foundations Theory (MFT) proposes that people rely on a set of moral intuitions when making moral judgements (Graham et al., 2013). These moral intuitions include care/harm, fairness/cheating, authority/subversion, loyalty/betrayal, sanctity/degradation, and potentially liberty. Each moral foundation serves an evolutionary function. When making moral judgements, cues relevant to these moral foundations are used to determine whether a behavior or exchange is morally wrong. These cues activate those foundations most relevant to the type of cue. For instance, a child in distress activates the care/harm foundation.

The emotional responses that result from activating particular foundations guide judgments and potentially behavior (Graham et al., 2013). For instance, when the care/harm foundation is activated by witnessing a child or animal in distress, feelings of compassion result. Such as when someone sees a hungry puppy roaming the streets, one may feel some level of compassion and pain at the thought of the puppy not having a home or needing to eat. The

stronger the emotional response, the more likely it is to lead to behaviors that rectify the distress, such as feeding the puppy whatever food you may have or even taking the puppy home to provide shelter and warmth. According to Graham et al., each foundation has its own set of triggers that elicit particular emotional responses, which vary in extremity based on an individual's endorsement of each foundation. The evolutionary functions, original triggers, and current triggers for each of the foundations are summarized in Table 2.

The sanctity/degradation foundation serves to protect people from pathogens by eliciting feelings of disgust in response to events that involve potential pathogen exposure (Rozin, Haidt, & McCauley, 2008; Van Leeuwen, Dukes, Tybur, & Park, 2017). People tend to make harsher moral judgements when (a) their environment is dirty or (b) they are around foul smells, compared to when not around disgust-inducing stimuli (Schnall, Haidt, Clore, & Jordan, 2008). For example, when Schnall et al. exposed participants to a foul-smelling spray, the participants rated moral transgressions as being more severe than did those who had not been exposed to the foul spray. The natural inclination to avoid disgust-inducing stimuli can influence behavior associated with the behavioral immune system, which has been directly associated to the sanctity/degradation foundation (Graham et al., 2013). Cues of potential pathogen exposure include superficial morphological anomalies (facial birthmarks or deformities) and behavioral signs of illness (coughing and sneezing; Schaller, 2015), as well as foul odors and being reminded of cleanliness (Schnall et al., 2008; Zhong, Strejcek, & Sivanathan, 2010).

However, people often overgeneralize pathogen cues (Zebrowitz & Montepare, 2008). That is, the behavioral immune system reacts to cues even when it is known that there is no risk of illness. For instance, people frequently associate older adults, obese individuals, and those

Table 2

*Moral Foundations Theory Summary*

<b>Moral Foundations</b>	<b>Evolutionary Function</b>	<b>Original Triggers</b>	<b>Current Triggers</b>
<i>Care/Harm</i>	Protect children	Children in distress	Any person or object in distress, especially those resembling children
<i>Fairness/Cheating</i>	Reap benefits of mutual relationships	Exchanges of goods or services between people	Any exchange, including with inanimate objects (vending machine)
<i>Loyalty/Betrayal</i>	Enforce group cohesion	Violation of group norms within a tribe, loyalty to the tribe	Brand loyalty, supporting sports teams
<i>Authority/Subversion</i>	Support hierarchical relationships	Interactions between levels of hierarchy, respect for authority	Chain of command (military, law enforcement, CEO)
<i>Sanctity/Degradation</i>	Protect from pathogen exposure	Signs of illness (cough, sneeze)	Sexual deviancy, immigration, physical abnormalities
<i>Liberty</i>	Promote autonomy and self-reliance	Imposed control from another tribe or person	Government interference in economic or social policy, parental control

with disabilities with chronic illness, and while they may not pose an actual threat spreading disease, this overgeneralization can lead to discrimination towards these groups (Park, Faulkner, & Schaller, 2003; Park, Schaller, & Crandall, 2007; Zebrowitz, Fellous, Mignault, & Andreoletti, 2003). This discrimination is marked by a decreased inclination to interact with these groups as

to protect oneself from pathogen exposure and grows with one's own level of disgust-sensitivity (Schaller & Park, 2011).

When disgust-sensitivity and pathogen salience is high, people tend to be more discriminating towards unfamiliar people as well (Schaller & Park, 2011). For example, when participants viewed slide shows depicting illness cues, they were less likely to allocate resources for advertising immigration to immigrants (Faulkner, Schaller, Park, & Duncan, 2004). One possible explanation for this discrimination is the behavioral immune system might treat the physical differences between oneself and others deemed "foreign" as if they are morphological anomalies indicative of illness (Schaller & Park, 2011). Another explanation may be that one may assume that those from outside of one's own cultural group may be less likely to abide by cultural norms that provide barriers to pathogens. For example, countries in the Middle East believe that eating with their left hand is unclean and foreign visitors may be unaware or unwilling to follow this rule, increasing the likelihood of pathogen exposure. Another explanation may be that people may assume that immigrants pose a threat because of the possibility of immigrants bringing novel pathogens into the country that the population may not be prepared to fend off (Reid et al., 2012).

Discrimination towards outgroup members is also a common covariant of endorsement of the loyalty/betrayal foundation. The purpose of this foundation is to enforce group cohesion (Graham et al., 2013). As larger groups are stronger, this foundation serves a self-protection function by encouraging safety in numbers. Being a member of a group increases the chance of survival as enemies and predators can more easily overtake individuals than they can overtake groups of people. Groups also provide an additional layer of defense for resources in which rival tribes may be interested. Indeed, increased loyalty towards one's group may motivate protective

behaviors towards group members and group ideologies. However, being proud of one's ingroup can lead to prejudice towards outgroups (Brewer, 1999).

Cues that activate endorsement of this foundation involve threats to one's group. However, those cues may also be over generalized to include situations that involve anyone that is part of an outgroup (Nesdale, Maass, Durkin, & Griffiths, 2005). For example, people may perceive those in ethnic outgroups as being more threatening simply for appearing superficially different than one's ingroup members (Maner et al., 2005). For instance, after watching a video that is meant to elicit fear of physical danger, people are more likely to perceive out-group members (Black and Arab faces) as angrier than they are to perceive in-group members to be, which could motivate avoidance of those outgroup members. Additionally, another study found that when cued with threatening stimuli (images of angry faces or videos of individuals walking towards the camera) participants were not only more likely to categorize those threats as outgroup members but were able to identify and react to threats more readily when the threat was from an outgroup (Miller, Maner, & Becker, 2011).

In addition to being loyal to one's group, maintaining a hierarchy within the group promotes order and assigns responsibility to members to ensure a smoothly functioning group. The authority/subversion foundation is thought to facilitate these functions as it encourages appropriate respect for those at varying levels within a hierarchy and maintains order within that hierarchy (Graham et al., 2013). Establishing a hierarchy allows a group to maintain an organized and well-functioning system that can increase chances of surviving by managing resources and dividing labor among its' members by way of assigning members with certain roles. This can be seen in employment settings where differences exist between the respect and authority paid to interns versus CEOs. However, this is also crucial in military settings, where



this hierarchy serves a protective function. Each rank serves a purpose, and if those in one position fail to perform their job, the entire system could fail. Within a military setting, failure to adhere to the chain of command has the potential to cost lives. Having a hierarchy allows responsibility and leadership to be distributed such that no one individual is overwhelmed, and the group to work efficiently. While this strategy may not be used specifically for survival in everyday life, its origins are thought to have aided survival in tribes. Threats to the hierarchy, such as insubordination, can threaten the stability of a group. Thus, fear and anger are important emotions elicited by activation of this foundation, as fear of authority and anger towards those who defy authority can discourage insubordination. Those lower in status may see activation of the authority/subversion foundation when interacting with those of higher status. Moral judgments may be made based on this fear of higher authority and triggered by witnessing disrespect from insubordinate group members. Further, the act of referring to groups for additional protection when threatened may be reflected by the difference in endorsement of binding versus individuating foundations.

Moral foundations can be divided into two types: individuating and binding foundations. Individuating foundations include the care/harm and fairness/cheating foundations, while binding foundations have previously included the loyalty/betrayal, authority/subversion, and sanctity/degradation foundations (Graham et al., 2013). The most defining difference between the two categories of foundations is that binding foundations are thought to bind groups and encourage group cohesion, whereas the individuating foundations are thought to be focused on individual interactions and empathy, having little to do with the groups (Graham et al., 2013; Strupp-Levitsky, Noorbaloochi, Shipley, & Jost, 2020). Thus, it may be expected that when the

self-protection motive is active, participants may make harsher judgements of moral violations related to binding foundations.

However, there may be reason to believe that the sanctity/degradation foundation is not as “binding” as has been previously thought. While pathogen exposure has been found to increase prejudice towards outgroups (Schaller & Park, 2011), as seen with other foundations, there has been some evidence that this may be targeted mostly towards immigrants that are from areas where pathogens may be more common, and with unfamiliar others in general, and less so towards immigrants as a group (Ji, Tybur, & van Vugt, 2019; Van Leeuwen & Petersen 2018). Therefore, the prejudice seen when pathogen cues are present may be more directly related to the actual pathogen carriers rather than intergroup threats.

Additionally, part of the rationale for classifying the sanctity/degradation foundation as a binding foundation has been based on its relationship with religious beliefs. In Haidt’s (2012) examination of the universality of sanctity/degradation foundation, he examined various religious groups around the world and found that the various beliefs within those religions were rooted in what he believed to be pathogen avoidance. He proposed that the sanctity/degradation foundation served to prevent pathogen exposure and bring people together by labeling certain objects, places, people, and principles as sacred. Those who violated these rules were considered traitors and exposing the rest of the group to the ills of their violations (either through pathogen exposure or religious persecution).

This logic may blur the line between sanctity/degradation and loyalty/betrayal foundations. Loyalty/betrayal and sanctity/degradation violations have similar characteristics, with the key difference appearing to be religious contexts. For instance, an athletic group may consider wearing another team’s jersey in one’s own gym as symbolic betrayal or as violating

the ‘sanctity’ of their home gym, which may likely be categorized as a loyalty/betrayal violation rather than sanctity/degradation due to religious context being absent. Objects, people, places, and principles may be sacred to an individual person outside of religious context, and without requiring an entire group to follow these principles. Thus, the sanctity/degradation foundation may be endorsed in group-like circumstances, but that endorsement may be due to overlap that the sanctity/degradation foundation has with the loyalty/betrayal foundation when religion is involved.

Further, some religious beliefs pertain more to the self than to the group. For instance, one ideology commonly tied to the sanctity/degradation foundation is that which holds that people ought to “treat the body as a temple” (Graham et al., 2013). But this ideology is not tied exclusively to religious contexts. Following strict diet and exercise regimens, doing yoga and meditation, or avoiding alcohol and drugs are behaviors that may be seen among religious and non-religious people, alike. These behaviors do not appear to be tied directly to any groups or norms, unless people happen to be in groups that encourage these behaviors (e.g., religious or wellness groups). However, being a part of a group is not required to follow these tenants. Indeed, because these sanctity-related beliefs and behaviors are seen outside of religious contexts, others have expressed skepticism concerning the original measure of this foundation (Moral Foundations Questionnaire) as it seems to place a heavy emphasis on religion rather than sanctity (Davis et al., 2017). Therefore, I seek to explore the possibility that the sanctity/degradation foundation is less binding than originally thought, in addition to exploring the relationship between the fundamental motives and moral foundations.

### Study 1

Given that both the self-protection motive and the sanctity/degradation foundation function to protect one from threats, it stands to reason that they would be related. Both share similarities in the stimuli that trigger their activation, and they each elicit similar behavioral responses, such as avoiding and discriminating against outgroups (Kenrick et al., 2010; Schaller & Park, 2011). It was, therefore, suspected that the sanctity/degradation foundation may serve the self-protection motive. As an initial examination of this possibility, participants were primed with a self-protection threat (versus control) in order to see whether participants would make harsher moral judgements of moral transgressions that violate the sanctity/degradation foundation.

As part of this first examination, a pilot study was conducted to examine whether a measure of moral judgment of disgust inducing stories used by Schnall et al. (2008) would adequately reflect endorsement of the sanctity/degradation foundation and to determine if the non-disgust related stories reflected any other moral foundations. Ultimately, the stories that were not previously used to measure disgust did not sufficiently activate any other moral foundation, rather they were morally ambiguous. Therefore, those stories were not used to compare the disgust stories to other foundations. Another measure for moral foundation endorsement and moral judgment was used.

### **Methods**

In this initial study, I examined a potential relationship between the self-protection fundamental motive and the sanctity/degradation foundation. Specifically, I wondered if proximal activation of the self-protection motive would elicit harsher moral judgments of moral transgressions pertaining to the sanctity/degradation foundation.

### **Participants**

Participants were recruited through Amazon's Mechanical Turk. Amazon's Mechanical Turk is an online participant recruitment software that provides monetary compensation to those who participate in online surveys. Participants recruited through Mechanical Turk are often gathered from various locations, though it was specified they only be recruited from within the United States.

I originally collected 148 participants. After cleaning data, 16 participants were cut due to them either not completing the survey, failing to accurately answer manipulation check questions, or having no variance in their response to the survey. There were 132 participants remaining to be analyzed who ranged from age 18 to 73, with an average age of 37. Of those remaining 76 (57.6%) identified as male and 56 (42.4%) identified as female. The sample was 81.1% White, 10.6% Native American, 6.1% Black, .8% Asian, and .8% Other.

## **Materials**

### *Manipulations*

To activate the self-protection motive, participants were assigned to one of two conditions. In the threat condition, participants read a story that detailed a home invasion, which has been shown to activate the self-protection motive in prior research (Griskevicius et al., 2009; Li, Kenrick, Griskevicius, & Neuberg, 2012). In the control condition, participants read a story about a person losing their keys. Following each story, participants completed an attention check in which they responded to three questions pertaining to their respective stories.

### *Measure*

To measure moral judgment, a collection of moral violations that were developed by Clifford et al. (2015) were used to assess participants' use of each foundation. Three violations were chosen that Clifford et al. reported as loading highest with each of the five foundations. I

asked participants to rate how morally wrong they felt each violation was on a Likert-type scale ranging from 1 – Not at all wrong to 5 – Extremely wrong. The average rating of wrongness for each trio of foundation violations was used as a measure of each participants moral judgments. Although I focused on participants' judgments concerning the sanctity/purity foundation, I did explore the relationship between the self-protection manipulation and the other foundations.

### **Procedure**

After agreeing to participate in the study, participants responded to a set of demographic questions. They were then asked to read one of two stories: a home invasion story or a story about lost keys. Once done reading the story, participants then responded to attention check questions for each story to ensure they read and understood the content. Participants then read a series of moral violations and rated how wrong they felt these violations were.

### **Results**

I ran a 2 (Self-Protection Motive: Self-Protection Story vs. Control) x 5 (Moral Foundation Violation: Care, Fairness, Loyalty, Authority, Sanctity) mixed ANOVA. Self-protection was a between-subjects variable, while Moral Foundation Violation was a within-subjects variable. There was effect of self-protection activation on moral judgments,  $F(1, 132) = .258$ , ns. Due to the assumption of sphericity being violated, the multivariate results were examined to assess for any effect of the Moral Foundation Violation variable. This revealed a significant main effect of the moral foundation, Wilks' Lambda = 0.50,  $F(4, 129) = 2.622$ ,  $p > .000$ .

The main effect of Moral Foundation Violation reflected how participants endorsed the care/harm foundation ( $M = 3.87$ ,  $SD = .79$ ) more than any other foundation ( $p$ 's  $< .006$ ). Participants endorsed the fairness/cheating foundation ( $M = 3.68$ ,  $SD = .77$ ) more than they

endorsed the sanctity/degradation, authority/subversion, and loyalty/betrayal foundations ( $p$ 's < .016). The sanctity/degradation foundation ( $M = 3.44$ ,  $SD = .93$ ) was endorsed by participants more than the authority/subversion and loyalty/betrayal foundations ( $p$ 's < .016). The authority/subversion foundation ( $M = 3.05$ ,  $SD = .84$ ) was endorsed by participants more than the loyalty/betrayal foundation ( $M = 2.76$ ,  $SD = .91$ ;  $p = .001$ ).

There was no significant interaction found between the moral foundation and self-protection activation, Wilks' Lambda = 0.97,  $F(4, 129) = .878$ , ns. While not significant, the participants actually trended in the opposite direction of what was expected, see Figure 1. That is, those in the self-protection condition had judged sanctity/degradation transgressions as less wrong ( $M = 3.41$ ,  $SD = .98$ ) compared to those in the control condition ( $M = 3.47$ ,  $SD = .88$ ). However, this difference is very small.

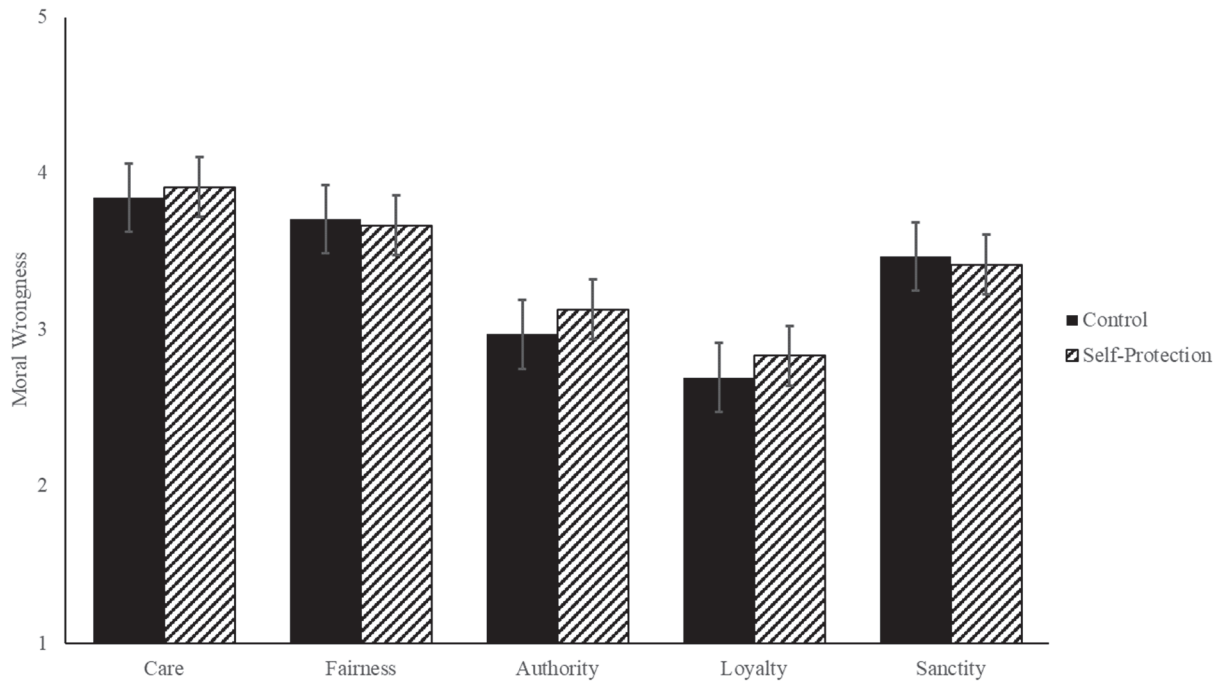
However, there were slightly larger differences between the self-protection and control conditions for other foundations. Specifically, those in the self-protection threat condition made harsher judgments of care/harm ( $M = 3.91$ ,  $SD = .84$ ), authority/subversion ( $M = 3.13$ ,  $SD = .86$ ), and loyalty/betrayal ( $M = 2.83$ ,  $SD = .87$ ) compared to those in the control condition ( $M_{care/harm} = 3.84$ ,  $SD = .74$ ;  $M_{authority/subversion} = 2.97$ ,  $SD = .81$ ;  $M_{loyalty/betrayal} = 2.70$ ,  $SD = .95$ ). However, these differences were still not significant.

## Discussion

There was no significant effect of activating the self-protection motive on participants' moral judgments of sanctity-related violations. This finding could be due in part to the different types of self-protection (e.g., protection from physical threat versus protection from pathogens). The manipulation used in the first study to activate self-protection has been successfully used in previous research (Griskevicius et al., 2009; Li, Kenrick, Griskevicius, & Neuberg, 2012);

Figure 1

*Moral Wrongness of Foundation Violations for Each Condition*



however, it contains no cues of pathogen threat, only physical threat. Therefore, the lack of effect on the sanctity/degradation foundation may provide further evidence that concern with protection from pathogen exposure is a separate mechanism from the traditional idea of the self-protection motive as discussed by Neuberg, Kenrick, and Schaller (2011). Thus, this distinction is explored further in the following study.

Additionally, the measure of moral foundation endorsement may not have been reliable enough to truly capture judgments using the sanctity/degradation foundation. The Cronbach's Alpha for the other foundations were above .78, but for sanctity/degradation the reliability coefficient was .669. Although the vignettes by Clifford et al. (2015) used in the first study were those with the highest factor loading scores, three vignettes may not have been enough to precisely measure participants' endorsement of the sanctity/degradation foundation. To address



this, the following study contained an increased number of vignettes used per foundation to measure moral judgment.

While there was no statistically significant relationship between the self-protection motive and the sanctity foundation, there was a descriptive trend in which differences seemed to begin to emerge for other moral foundations. Particularly, there was a positive relationship between activating the self-protection motive and judgments of moral transgressions involving the care/harm, loyalty/betrayal, and authority/subversion foundations. Although the trends were nonsignificant, they could indicate a relationship between the *type* of threat and foundation activation.

It would make sense that being threatened may lead people to turn to their ingroups for protection. Indeed, activation of the self-protection motive has previously led to increased group-like behavior, such that it has led to ingroup favoritism and outgroup prejudice as discussed earlier (Becker et al., 2010; Kenrick, 2011; Schaller, Park, & Faulkner, 2003). The ingroup bias elicited by self-protection, prior research has reported, may provide an explanation for the trend observed in the initial examination, wherein those in the self-protection condition made harsher judgments towards violations of the loyalty/betrayal, authority/subversion, and harm/care foundations. Namely, when concerned with one's own safety, the psychological mechanism designed to protect oneself from harm may encourage people to turn towards their groups for increased protection from the threat.

Thus, the sanctity/degradation foundation may serve the self-protection motive by protecting the *individual* from pathogens, thus benefiting individuals more so than groups, supporting the idea that the sanctity/degradation foundation is less binding than original thought. That is, while threats of physical harm may lead people to turn to their groups for protection,

threats of pathogen exposure may lead people to retreat from any indicators of pathogen threat. Therefore, the next study examined different *types* of threats more closely with an adjusted measure of moral foundation endorsement.

## Study 2

### *Current Hypothesis*

If anything, the initial self-protection manipulation appeared to activate the care/harm, loyalty/betrayal, and authority/subversion foundations. However, the story used in the manipulation described a home invasion, which may indicate an impending physical threat, whereas sanctity/degradation concerns appear to be activated primarily by pathogen cues (Graham et al., 2013). Concern with pathogen exposure, on the other hand, may still activate the sanctity/purity foundation.

Therefore, the suite of mechanisms driven by the fundamental motive to protect the self may include a self-protection from physical harm mechanism and a self-protection from pathogens mechanism. To explore this, the self-protection motive was methodologically separated between a self-protection from pathogens mechanism and a self-protection from physical harm mechanism. Specifically, I explored whether specific types of threats to self-protection motivate specific moral foundations. A movie clip depicting physical threat was used as a proximal trigger for a self-protection from physical harm mechanism to examine its' effect on endorsement of the loyalty/betrayal and authority/subversion moral foundations. Another movie clip depicting pathogen cues was used as a proximal trigger of the self-protection from pathogens mechanism to explore its' effect on the endorsement of the sanctity/degradation foundation.

## Method

## **Participants**

Participants were recruited through Amazon's Mechanical Turk. Originally 512 participants were collected. After cleaning data, 85 participants were cut due to them either not completing the survey, failing to accurately answer manipulation and attention check questions, having no variance in their response to the survey, or taking more than two standard deviations longer than the average time it took to complete the survey. This left 427 participants ranging from age 18 to 78 with an average age of 40.28. Of those participants 227 (53.2%) identified as male, 198 (46.4%) identified as female, and 2 (.5%) chose to identify as neither male nor female. The sample was composed of 74.9% White, 9.8% Black, 7.7% Asian, 4.7% Latinx, 2.6% Mixed or Other, and .7% Native American. Religious association was also considered, where this sample consisted of 58.8% Christian, 28.3% Atheist, 5.9% Other, 2.8% Buddhism, 1.4% Islam, 1.4% Judaism, .7% Hinduism, and .7% Paganism.

## **Materials**

### *Manipulations*

Participants were assigned to one of three conditions to manipulate activation different types of self-protection. In the self-protections from physical harm condition, participants watched a clip from *Silence of the Lambs* (1991) which was 3 minutes and 12 seconds in length. This movie, and scene, has been used to elicit feelings of fear and activate the self-protection motive in previous studies (Becker et al., 2010; Gross & Levenson, 1995; Neuberg, Kenrick, & Schaller, 2011). The scene depicted the primary protagonist being followed by a serial killer through a dark, maze-like house while the antagonist had the upper hand using night-vision goggles.

In the self-protection from pathogens condition, participants viewed a compilation of clips from the movie *Outbreak* (1995) that was 3 minutes and 19 seconds in length. This clip was meant to elicit feelings of disgust and increase disease salience (Wu & Chang, 2012). Activation of the self-protection from pathogen exposure mechanism was done by visualizing a disease spreading with gross symptoms of coughing and sneezing, as well as being set in a hospital environment.

In the control condition, participants watched a neutral educational style video describing mathematics that was 3 minutes and 16 seconds in length. This video was expected not to influence judgments made with any moral foundation nor elicit feelings of any type of threat.

### *Measures*

Participants were asked to rate the extent that they are concerned about Covid-19 on a Likert-type scale of 0 – Not concerned at all to 4 – extremely concerned (Nelson, Pettit, Flannery, & Allen, 2020). This was measured to consider how concern for Covid-19 may influence sensitivity to pathogen threat or sanctity-related judgments.

Prior endorsement of the moral foundations was measured using the Moral Foundations Questionnaire (MFQ; Graham et al., 2011). The short form was used, which included 20 items<sup>1</sup>. The first 10 items asked participants the extent to which they considered an idea relevant when making moral judgments of an act on a Likert-type scale of 1 – Not relevant at all to 6 – Extremely relevant. The second set of items asked participants to rate the extent to which they agreed with statements concerning morality on a Likert-type scale of 1 – Strongly disagree to 6 – Strongly agree.

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<sup>1</sup> One item was missed when inputting the questionnaire. The measure used included 19 moral foundation items, where the one missing measured endorsement of the loyalty foundation.

After watching one of the videos<sup>2</sup>, participants responded to a measure of moral foundation judgment similar to that used in study 1. These vignettes were those adapted from Clifford et al. (2015) that loaded highly on each foundation and asked participants to rate how morally wrong they felt each violation was on a Likert-type scale ranging from 1 – Not at all wrong to 5 – Extremely wrong. In study 1, participants only rated three vignettes. For this study, an additional three vignettes were included, allowing for 6 vignettes to measure each foundation (totaling 36 vignettes).

### **Procedure**

After agreeing to participate, the participants responded to a set of demographic questions. They then responded to a question to assess how concerned they were about Covid-19. Participants then responded to the short MFQ to measure prior moral foundation endorsement. Participants were then assigned to one of three conditions where they watched either a video clip from *Silence of the Lambs* (1991), *Outbreak* (1995), or an instructional math video. Attention check questions were asked to ensure participants understood the content of the videos.

After watching the video and responding to attention check questions, participants responded to a measure of emotion. They then read a series of moral vignettes depicting moral violations and were asked to rate the extent to which they felt the violations were wrong.

## **Results**

### **Main Analysis**

A 3 (Self-Protection from Physical Harm vs. Self-Protection from Pathogens vs. Control) x 5 (Moral Foundation Violation: Care, Fairness, Loyalty, Authority, Sanctity) mixed Factorial ANOVA was conducted, with the Self-Protection variable serving as the between-subjects

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<sup>2</sup> Participants responded to a measure of emotion after watching the video clip; the emotion measure was for another hypothesis.

variable and the Moral Foundation Violations as the within-subjects variable. The analysis revealed no main effect of self-protection activation on moral judgments,  $F(2, 424) = .499$ , ns. As in Study 1, due to the assumption of sphericity being violated, the multivariate results were examined to assess for any effect of the Moral Foundation Violation variable. A significant main effect of moral foundation was found, Wilks' Lambda = 0.42,  $F(4, 421) = 146.48$ ,  $p > .000$ . A marginal interaction effect between moral foundation and self-protection condition was also found, Wilks' Lambda = 0.97,  $F(8, 842) = 1.87$ ,  $p = .061$ . When controlling for COVID-19 concern, this marginal interaction effect remained, Wilks' Lambda = 0.97,  $F(8, 840) = 1.87$ ,  $p = .059$ . When controlling for prior moral foundation endorsement, this marginal interaction effect remained, Wilks' Lambda = 0.97,  $F(8, 830) = 1.79$ ,  $p = .075$ .

Post hoc analyses were conducted to explore the marginal interaction. These analyses revealed that the only contrast that approached significance revealed that those in the self-protection from physical harm condition made harsher judgments of fairness-related violations than did those in the control condition. This difference was not found when comparing the self-protection from pathogen threat condition to control, nor when comparing self-protection from physical harm to self-protection from pathogen threat, see Table 3. This was found with and without controlling for Covid-19 concerns (see Appendix A for coefficients without controlling for Covid-19). When controlling for prior endorsement of the foundations, this effect was still present and significant,  $p < .05$ . Controlling for prior foundations and Covid-19 concerns did not alter any other results in a significant way.

The means of participants moral wrongness judgments for the moral foundations were in the general directions that I had expected (except for the care/harm foundation, see Figure 2).

Table 3

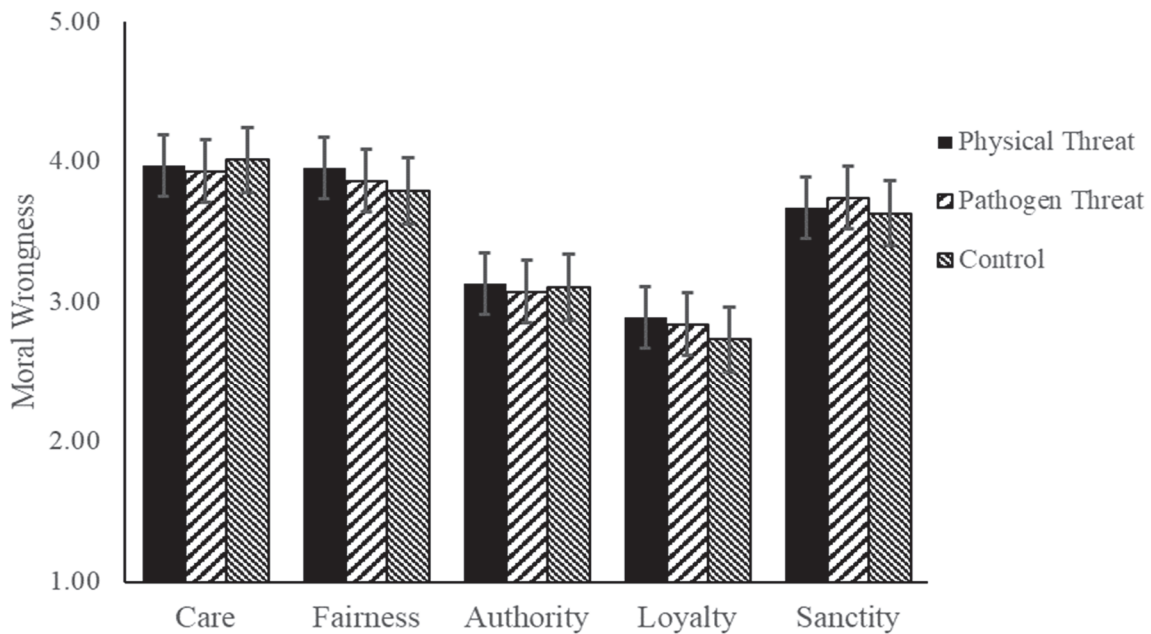
*Post Hoc Coefficients While Controlling for Covid-19 Concerns*

Conditions	Care	Fairness	Authority	Loyalty	Sanctity
Physical vs. Control	-0.05	0.15*	0.05	0.14	0.04
Pathogen vs. Control	-0.08	0.07	-0.01	0.10	0.11
Pathogen vs Physical	0.06	0.01	0.03	-0.03	-0.09

*Note.* Those in the physical condition considered violations of the fairness/cheating foundation as more wrong compared to those in the control condition, although only marginally,  $p = .091$ .

Figure 2

*Moral Wrongness of Foundation Violations for Each Condition*



Those in the self-protection from physical harm condition tended to make harsher judgments of authority and loyalty foundation violations, whereas those in the self-protection from pathogens

condition tended to make harsher judgments of sanctity-related violations. However, these trends were not significant (see Figure 2).

### **Exploratory Regression Analyses**

Exploratory regression analyses were done to examine how prior endorsement may have influenced moral judgments in each self-protection condition. Prior endorsement of the loyalty foundation was the only foundation that interacted with the self-protection variable to influence wrongness of loyalty-related moral violations,  $\beta = .460$ ,  $b = .381$ ,  $t(426) = 10.67$ ,  $p < .000$ . Such that those who highly endorsed the loyalty foundation made harsher judgments of loyalty violations when in the self-protection from pathogen threat condition than when in the control condition.

### **Discussion**

A significant effect of self-protection threat type on moral foundation judgments was not found. However, there were trends in the predicted directions. That is, those in the self-protection from physical harm condition made harsher judgments of violations related to the authority and loyalty foundations, whereas those in the self-protection from pathogen threat condition made harsher judgments of violations related to the sanctity foundation. Being that these differences were not significant, it may be assumed that the self-protection motive(s) do not influence any one moral foundation enough to alter moral judgments.

The hypothesis that those in the self-protection from physical harm would differ from those in the self-protection from pathogen threat in their moral judgments was not confirmed. Differences between self-protection conditions were not significant. Additionally, trends appeared that were unexpected. While the trends between conditions with the loyalty, authority, and sanctity foundation were consistent with those hypothesized, they were not significant. It



was also found that those in the physical harm condition made harsher judgments of fairness related violations compared to those in the control condition. This effect was marginally significant and became significant when controlling for prior moral foundation endorsement. A potential explanation for this effect may be due to the relationship between the characters depicted in the *Silence of the Lambs* (1991) clip. The antagonist has an unfair advantage over the protagonist as he has the ability to see in the dark (with night-vision goggles) while the protagonist is blinded. This may have been viewed as “cheating” in the game of chase. Additionally, the antagonist is a male who is larger than both the female protagonist and female victim, which may lend some participants to assume he is stronger than the females, giving the antagonist an advantage in both physical strength and visibility. This unfair advantage may have led to participants being sensitive towards others who cheat and tilt the odds in their own favor.

There may be a way to make the dynamic of a threat situation fairer to examine how threats influence moral judgments. However, controlling for the fairness of a threat may be difficult as most situations where one is threatened, the threatening person is likely to have the advantage. Otherwise, they would likely not be considered a threat. Therefore, fairness may be involved in any situation where someone is being threatened.

Additionally, the trend for the care/harm foundation was in the opposite direction than was expected. In both self-protection conditions, participants rated violations related to the care/harm foundation less harshly than did those in the control condition. The moral violations described that were related to this foundation often included animals or other people that may be considered strangers. Perhaps this indicates that when threatened, participants may seek self-preservation and disregard others being harmed, especially if those others do not serve some benefit.

Although it is important to note that this difference is also not significant, it may be worth exploring if the trend for the care foundation still exists when the acts described are inflicted on blood relatives. The care/harm foundation serves the function of ensuring the continuation of genetics by protecting one's offspring from harm. Activation of the care foundation often stems from children and animals being in distress, eliciting feelings of compassion and leading to moral condemnation and urgency to help the child or animal in distress. However, when threatened one may be more sensitive to and focused on potential threats inflicted on their own offspring or relatives as they are the direct link for continuing their genetic legacy, as opposed to all animals and people in distress. This may provide an explanation as to why there was no effect when participants judged care related violations, as those used described strangers or animals rather than relatives.

Ultimately, the different types of self-protection threats did not influence moral judgment. This may indicate that moral foundation endorsement is much more trait-like that had been hypothesized and not easily altered by current circumstances. However, this could apply primarily to the self-protection mechanism, as all moral foundations serve to protect one from harm in some manner. Examining how other fundamental motives may elicit different results as their functions are much more focused than the self-protection motive. For instance, activating the status/esteem motive may have an effect on judgments of violations related to the authority/subversion foundation, as this foundation focuses on group hierarchy and respecting those of varying social status differently.

Additionally, the idea that the sanctity foundation may be more individuating is not entirely supported. While differences were not significant, those in the self-protection from pathogen threat condition made harsher judgments of those sanctity-related violations compared

to those in the self-protection from physical threat condition. Additionally, those in the self-protection from pathogen threat also made less harsh judgments of authority and loyalty related violations. On the other hand, violations related to authority were judged less harshly by those in the self-protection from pathogen condition than by those in both the self-protection from physical threat and the control conditions. However, being exposed to a pathogen threat did seem to influence judgments of loyalty violations to some degree. Therefore, this current study provides inconclusive evidence for the idea that the sanctity/degradation foundation is more individuating. Future studies may find other ways to test or manipulate sanctity judgments/endorsement in a way necessary to determine its' relationship to group or individual behaviors. For instance, controlling for church attendance when considering judgment or endorsement may help in determine whether endorsement is based solely on religiosity.

### **General Discussion**

The studies discussed found no significant relationship between the self-protection motive and the use of the moral foundations. However, this may be because the self-protection motive is rather broad and all moral foundations aid in some way to protect one from harm. Therefore, it should not be completely ruled out that the motives identified by the Fundamental Motives Model and moral foundations identified by Moral Foundations Theory have a potential relationship. Rather, the relationship may be found among the other motives that serve more specific functions, such as the status/esteem or the parenting motive.

Additionally, these studies were unable to find significant evidence for the sanctity/degradation foundation being more individuating than binding. However, the current evidence also did not conclusively reveal the foundation was binding either. Ultimately, it was inconclusive, so further research may use methods that are better able to distinguish endorsement

as rooted in individuating versus binding use of the sanctity foundation and explore its function in an individual setting.

While the overall results of these studies were not those that were expected, it cannot be completely ruled out that there may be a connection between the fundamental motives and moral foundations. The interactions concerning threat and the loyalty and fairness foundations indicate that there may be some relationship there. Furthermore, there was no significant difference between the pathogen threat and physical harm conditions in sanctity, but there was a slight difference where pathogen threat had increased judgment ratings. Thus, this idea may not be entirely ruled out. Further, the possibility that the sanctity foundation includes individuating qualities remains logical given the discussion above. These relationships may be explored further in future research.

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## Appendix A

Table 4

*Post Hoc Coefficients*

Conditions	Care	Fairness	Authority	Loyalty	Sanctity
Physical vs. Control	-0.04	0.16*	0.07	0.16	0.04
Pathogen vs. Control	-0.08	0.07	0.00	0.11	0.11
Pathogen vs Physical	0.06	0.01	0.03	-0.03	-0.09

*Note.* Those in the physical condition considered violations of the fairness/cheating foundation as more wrong compared to those in the control condition, although only marginally.

\*  $p = .081$

## **Appendix B**

### Youtube Video Links

<https://youtu.be/NnOLT2Tmqc> - Control

<https://youtu.be/jgyprC-oQXY> - Silence of the Lambs

<https://youtu.be/abMIQ5Xb6cM> - Outbreak

### Appendix C

#### Moral Foundations Questionnaire (Short Form)

Part 1. When you decide whether something is right or wrong, to what extent are the following considerations relevant to your thinking? Please rate each statement using this scale:

[0] = not at all relevant      [1] = not very relevant      [2] = slightly relevant  
 [3] = somewhat relevant      [4] = very relevant      [5] = extremely relevant

- \_\_\_\_\_ Whether or not someone suffered emotionally
- \_\_\_\_\_ Whether or not some people were treated differently than others
- \_\_\_\_\_ Whether or not someone's action showed love for his or her country
- \_\_\_\_\_ Whether or not someone showed a lack of respect for authority
- \_\_\_\_\_ Whether or not someone violated standards of purity and decency
- \_\_\_\_\_ Whether or not someone was good at math
- \_\_\_\_\_ Whether or not someone cared for someone weak or vulnerable
- \_\_\_\_\_ Whether or not someone acted unfairly
- \_\_\_\_\_ Whether or not someone did something to betray his or her group
- \_\_\_\_\_ Whether or not someone conformed to the traditions of society
- \_\_\_\_\_ Whether or not someone did something disgusting

Part 2. Please read the following sentences and indicate your agreement or disagreement:

[0]	[1]	[2]	[3]	[4]	[5]
Strongly	Moderately	Slightly	Slightly	Moderately	Strongly

disagree

disagree

disagree

agree

agree

agree

\_\_\_\_\_ Compassion for those who are suffering is the most crucial virtue.

\_\_\_\_\_ When the government makes laws, the number one principle should be ensuring that everyone is treated fairly.

\_\_\_\_\_ I am proud of my country's history.

\_\_\_\_\_ Respect for authority is something all children need to learn.

\_\_\_\_\_ People should not do things that are disgusting, even if no one is harmed.

\_\_\_\_\_ It is better to do good than to do bad.

\_\_\_\_\_ One of the worst things a person could do is hurt a defenseless animal.

\_\_\_\_\_ Justice is the most important requirement for a society.

\_\_\_\_\_ People should be loyal to their family members, even when they have done something wrong.

\_\_\_\_\_ Men and women each have different roles to play in society.

\_\_\_\_\_ I would call some acts wrong on the grounds that they are unnatural.

**Appendix D**

Read the following statements. Indicate the extent to which you feel the situations described are morally wrong. Use the following scale:

1 = not at all wrong   2 = not too wrong   3 = somewhat wrong

4 = very wrong   5 = extremely wrong

1. You see a woman commenting out loud about how fat another woman looks in her jeans.
2. You see a referee intentionally making bad calls that help his favored team win.
3. You see a father requiring his son to become a commercial airline pilot like him.
4. You see an intern disobeying an order to dress professionally and comb his hair.
5. You see the coach's wife sponsoring a bake sale for her husband's rival team.
6. You see a man having sex with a frozen chicken before cooking it for dinner.
7. You see a zoo trainer jabbing a dolphin to get it to entertain his customers.
8. You see a student copying a classmate's answer sheet on a makeup final exam.
9. You see a father requiring his son to take up the family restaurant business.
10. You see a girl repeatedly interrupting her teacher as he explains a new concept.
11. You see a coach celebrating with the opposing team's players who just won the game.
12. You see a drunk elderly man offering oral sex with anyone in the bar.
13. You see a man lashing his pony with a whip for breaking loose from its pen.
14. You see an employee lying about how many hours she worked during the week.
15. You see a mother forcing her daughter to enroll as a pre-med student in college.
16. You see a teenage girl coming home late and ignoring her parents' strict curfew.
17. You see a college president singing a rival school's fight song during a pep rally.

18. You see a homosexual in a gay bar offering sex to anyone who buys him a drink.
19. You see a boy throwing rocks at cows that are grazing in the local pasture.
20. You see someone cheating in a card game while playing with a group of strangers.
21. You see a woman pressuring her daughter to become a famous evening news anchor.
22. You see a girl ignoring her father's orders by taking the car after her curfew.
23. You see the class president saying on TV that her rival college is a better school.
24. You see a man searching through the trash to find women's discarded underwear.
25. You see someone leaving his dog outside in the rain after it dug in the trash.
26. You see a runner taking a shortcut on the course during the marathon in order to win.
27. You see a man telling his girlfriend that she must convert to his religion.
28. You see a man turn his back and walk away while his boss questions his work.
29. You see a mayor saying that the neighboring town is a much better town.
30. You see a man in a bar using his phone to watch people having sex with animals.
31. You see a girl shooting geese repeatedly with a pellet gun out in the woods.
32. You see a politician using federal tax dollars to build an extension on his home.
33. You see a man telling his fiancé that she has to switch to his political party.
34. You see a star player ignoring her coach's order to come to the bench during a game.
35. You see a teacher publicly saying she hopes another school wins the math contest.
36. You see two first cousins getting married to each other in an elaborate wedding.