The Effect of Disgust on Moral Behavior

Natalie Morse and Sarah Quebe

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Abstract

This study was designed to examine the effect of disgust on moral behavior. Previous research indicates that helping responses are influenced by emotions such as happiness or distress (Lamy, Fischer-Lokou, & Gueguen, 2012). In addition, the emotion of disgust has been shown to increase people's rating of wrongness of immoral behavior (Wheatley and Haidt, 2005). However, no research has investigated how disgust might go beyond moral judgments to influence moral behaviors such as helping. Participants were placed in one of two conditions: disgust or cleanliness. Two rooms were used, the first for informed consent and debriefing and the second for the conducting of the experiment. In this second room, participants sat in their condition's corresponding smell and viewed 16 pictures corresponding to their condition (i.e., disgust sat in a bad smelling room viewing disgusting pictures). Each participant completed a survey, rating how clean or disgusting their condition's room and pictures were on a Likert scale of 1-7. Upon completion, participants were then directed back out to the first room to receive their debriefing and incentive for participation (candy). The first researcher "accidentally" spilled the candy while reaching for the Demographics form and timed how long participants helped pick up the candy. Measured in seconds, we found that participants in the disgust condition helped longer (M=23.85) than participants in the clean condition (M=11.13) because they are trying to rid their feelings of physical disgust.

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> "Julie and Mark are brother and sister. They are travelling together in France on summer vacation from college. One night they are staying alone in a cabin near the beach. They decide that it would be interesting and fun if they tried making love. At the very least it would be a new experience for each of them. Julie was already taking birth control pills, but Mark uses a condom too, just to be safe. They both enjoy making love, but they decide not to do it again. They keep that night as a special secret, which makes them feel even closer to each other. What do you think about that? Was it OK for them to make love?" (Haidt, 2001).

This example comes from Jonathon Haidt's research on moral dumbfounding. He proposes the idea of the moral dumbfounding phenomenon as "the stubborn and puzzled maintenance of a judgment without supporting ideas" (Haidt, Bjorklund, & Murphy, 2000). This essentially says that even when a behavior does no harm and does not seem unfair, as in Julie in Mark's case, people can still propose that it is wrong, but are unable to explain why they think it is wrong. Based on this finding, Haidt concluded that there must be other principles besides harm and fairness that people use to evaluate the rightness or wrongness of a behavior. This is where one of Haidt's biggest contributions to the field of psychology comes in, the Moral Foundations Theory, which produced five dimensions to be the psychological "foundations" upon which cultures construct their moralities (Graham et al., 2011; pg 368). The five dimensions of Haidt's Moral Foundations Theory include: Harm/Care; Fairness/Reciprocity; Ingroup/Loyalty; Authority/Respect; Sanctity/Degradation. One of these five foundations is the degree to which the behavior violates norms for sanctity and degradation, or cleanliness and disgust, which is the main focus of this study.

This Moral Foundations Theory comes from a Functionalist approach and Haidt and Kesebir (2010) made a statement related to the Functionalist Approach that morality is created to discourage selfishness and encourage cooperation so that society can function properly. This is especially true for large groups when they say that the reason we have moral systems is to make

it possible for people to live together in large groups (Haidt & Kesebir, 2010). In order for society to function properly, we adapt a lot of our emotions, for instance guilt, shame, and feelings of being cheated, to keep from being taken advantage of and to punish those that violate these morals. Within our opening example, we discussed incest and why it is considered morally wrong. Rozin, Haidt, and Fincher (2009) touched on this topic and conducted a study where they focused on moral violations and how violating these morals can trigger disgust. They argued that there is a strong connection between the physical disgust we feel and the moral disgust we feel. In their study, they used rotten food as physical disgust and incest as moral disgust and found that subjects had similar levels of disgust across both conditions. This goes to say that the type of physical disgust we feel can have an effect on our moral disgust and opinions. This statement was furthered when they found that the same brain regions are affected for physical and moral disgust.

More evidence for a link between disgust and moral judgment lies within the research in which subjects are primed to feel either more pure or more impure, and then judge the wrongness of a behavior. Schnall, Benton, and Harvey (2008) conducted a study that focused on a dimension from Haidt's Moral Foundations Theory to see the effects on moral judgment. In the first study, some participants were asked to complete a word task problem involving words such as "pure," "wash," "clean," etc., while others were given neutral words. Once they finished this task, the participants rated six moral judgment situations and rated their emotions. The results indicated that "participants provided lower ratings of judgment and emotions after the cleanliness priming than they did after the neutral priming" (Schnall, Benton & Harvey, 2008; pg 1220). Wheatley and Haidt (2005) lead a study examining the opposite end of the same dimension of cleanliness – disgust. As the first study expected cleanliness to make moral judgment less

severe, this study expected disgust to make moral judgments more severe. They used highly hypnotizable participants during their experiment. When the participants were hypnotized, they told them to feel a flash of disgust when they were presented with arbitrary words. Participants were then asked to rate moral misbehaviors explained in an essay that either did or did not include the word that induced disgust. The results indicated that participants rated the stories as more disgusting when the word they were exposed to during the hypnosis was presented (Wheatley & Haidt, 2005).

The results from both studies indicate that Haidt's dimensions have a significant effect on how we judge moral situations. Schwarz and Clore's (1983) "mood as information" theory suggests that people's decisions are often influenced by their mood at the current time. For example, Schwarz and Clore (1983) found that when participants were asked the question, "How happy are you with your life?", answers were more positive on sunny days than on rainy days. In this instance, people were unconsciously using their current happiness from a sunny day to inform their judgment about their overall feeling of happiness. In the moral judgment studies, people's decisions about moral wrongness were informed by their temporary feelings of disgust. Ordinarily, these feelings may be useful guidelines because the feeling is caused by the behavior that is being judged. For example, someone shouts "these referees are horrible!" in a disgusting manner, but if a person is primed with disgust, the disgust felt towards the referee is more severe. The result is that priming disgust amplifies the severity of moral judgments.

While most research on the relationship of disgust and morality has focused on moral judgments, Liljenquist, Zhong, and Galinsky (2010) did a study that examined helping behavior, which is the focus of this study. Subjects in Liljenquist, Zhong, and Galinsky's (2010) study were asked to describe a deed from their own past that was unethical and then either were or

were not given an antiseptic wipe. Those who were not given an antiseptic to clean their hands reported more negative feelings like disgust, regret, guilt, shame, embarrassment, and anger than those subjects who were given an antiseptic wipe and cleaned their hands (Liljenquist, Zhong, & Galinsky,2010). Then, subjects were asked to volunteer for another study. Of the subjects, 41% that used the wipe volunteered whereas 74% that did not use the wipe volunteered. This says that when a person's moral purity is in danger, there is a need for physical cleaning (Liljenquist, Zhong, & Galinsky, 2010). Liljenquist, Zhong, and Galinsky (2010) concluded that when a person reflects on his or her own moral wrong doings, this produces a feeling of being contaminated. This contamination causes people to want to purify themselves which can be satisfied by helping with a moral behavior. In addition to the finding that people who did not wipe their hands helped more, they also found that those who cleansed themselves had reduced moral emotions than those that did not wipe their hands (Liljenquist, Zhong, & Galinsky, 2010).

It is important to mention that there has been minimal research done on the effect of physical disgust on moral behavior, which is one of the main reasons we decided to explore this area. For this study, we wanted to determine if being primed with physical disgust affects a person's decision to help. We expect to find that participants who were primed with disgust will help longer than those who were primed with cleanliness. We hoped that our results reflect previous research, such that participants would try to relieve the physical disgust they feel by using a helping behavior in our study as a replacement of the antiseptic wipe used in Liljenquist, Zhong, and Galinsky's (2010) study.

Methods

Participants

A total of 26 Hanover College students participated in this study in which data from only 24 participants was used due to one participant stating suspicions during the debriefing process about our procedures and another that caught our incentive before it fell off the table, which will be discussed later. Of these 24 participants, 4 were male and 20 were female. There were twenty Caucasians, two African Americans, and one Biracial. Two conditions were used in this study, clean and disgust, in which 13 participants were in the disgust condition and 11 were in the clean condition. All participants were between the ages of 18 and 22.

Materials

In order to conduct this study, two psychology rooms were needed. The psychology lounge was used for the Informed Consent process, the helping behavior, and the debriefing process, and an enclosed room was used to view the pictures. There were two conditions used in which participants were randomly assigned according to the week they signed up on the signup sheet posted. The first week was the Disgust condition and the second week was the Clean condition. Each condition had corresponding smells emitted in the room. To emit the disgust condition's smells, sauerkraut, garlic bulbs, a Vidalia onion, raw salmon, and canned mackerel were placed around the room in visible sight. These scents were present in the room while the participants viewed sixteen disgusting pictures, which ranged from moldy food and vomit to disgusting toilets and snot via PowerPoint on a laptop. To emit the clean condition's smells, two Renuzit air fresheners and a bottle of off-brand Pine-Sol were placed around the room and Lysol wipes were used to wipe down the tables. These scents were present in the room while the participants in the clean condition viewed sixteen clean pictures, which consisted of photos of fresh fruit being washed, sparkling clean rooms in a house, or serene nature scenes via PowerPoint on a laptop. Within each condition's room, a survey was used in order to rate how

potent the stench in the room was and to rate each picture's level of disgust or cleanliness, both on a Likert scale of 1-7. An iPhone was used to time how long the participants stayed to help and Dum-Dum suckers were used as the item to knock over and as the participants' incentive for participating.

Procedure

Participants signed up for a time in which they could come into the lab to participate in our study. Each slot was 20 minutes long and done in individual sessions only lasting about five minutes. The day in which the participant signed up determined the condition they were in: disgust or cleanliness. In addition, each participant was informed on the signup sheet that they would receive candy for their participation and that the study contains foul smells. Upon arrival, participants were given an Informed Consent at the "receptionist desk" in the psychology lounge where they met Researcher 1. It is important to note here that participants were informed that the study was based on how aroma affects perception and *not* on the effect of disgust on moral behavior. Once participants signed the Informed Consent, they were then told to follow Researcher 2 to the back room in the psychology department in order to begin the study. Researcher 2 handed out the survey and informed them of what they needed to do after rating how potent they felt the room was, thus beginning the PowerPoint of pictures pertaining to their condition. Pictures and aromas pertaining to each group were used. For the disgust group, pictures consisted of rotten food, dirty bathrooms, and trashy households. Within the room, a foul, disturbing stench was emitted in the air via raw salmon, onions, garlic, mackerel, and sauerkraut. For the clean condition, pictures consisted of fresh fruit being washed, sparkling clean rooms in a house, and serene nature scenes. Within the room, two Renuzit Aroma air

fresheners were used and a lemony/citrusy scent was emitted via Lysol and an open bottle of off-brand Pine-sol. There were sixteen pictures for both conditions and they were presented via PowerPoint on a laptop.

Once participants entered the second room, participants began the testing procedure by viewing their respective condition's pictures. Each participant rated on a Likert scale of 1 to 7 how potent they thought the smell in the room was and then viewed their condition's pictures. While viewing each picture individually, they rated how clean or disgusting each picture was on a Likert scale of 1-7, with 1 being not at all clean or disgusting and 7 being extremely clean or extremely disgusting. Once completed, the participants handed their survey to Researcher 2 who then sent the participant back out to the "receptionist desk," telling them that is where they will complete demographics, which consisted of age, gender, and race, and to get their incentive and debriefing form. This is where the "incident" took place where Dum-Dum suckers were knocked off the table to serve as an option for participants to help. When the participant arrived in the room, Researcher 1 greeted them, stood, and told them she had their demographics. While reaching for the demographics, she intentionally knocked over the bowl of suckers that were sitting on the edge of the table onto the floor. Researcher 1 stopped and looked at the mess, analyzing each participant's movement. If the participant immediately began helping, she, too, helped. If the participant did not immediately help, Researcher 1 took a step towards the mess to see what they would do. If they still did not help, the researcher said, "It's okay, I can get it later" and handed the participant their demographics and debriefed them. Around the corner and out of sight was Researcher 2 who was timing each of these incidents with her iPhone. There were cues that indicated to Researcher 2 when to start and stop the timer. Once the bowl hit the floor, this indicated to her to start the timer. If participants immediately helped or helped after

the slight prompt, subjects were offered an "out" by Researcher 1 saying, "It's okay, I can get this later" so that the participants had a choice to help and didn't feel like they had to. This allowed the decision to be their own as to whether or not to help and for how long. If participants took this out, Researcher 1 said, "Thanks though" to signal to Researcher 2 to stop the timer. If participants helped for the whole time, meaning that all of the suckers were picked up, Researcher 1 said "thank you very much" or "thank you for helping" to indicate to Researcher 2 to stop the timer. Whether or not participants helped, they were then handed the Demographics to fill out. Once the Demographics were completed, the debriefing process began which informed the participants that the study was done in order to see if being primed with disgust affects a person's moral decision to help someone. Upon debriefing, the participants were dismissed.

Results

We expected to find that participants in the Disgust condition would help longer than those in the Clean condition. There were a total of 13 participants in the Disgust condition and a total of 11 in the Clean condition. In Figure 1.1 below, the gray dots indicate the amount of time the participants spent helping. Of the 13 subjects in the Disgust condition, 9 of the participants helped the full amount of time (between 25-37 seconds), two participants took the out, and two participants chose not to help at all. In the Clean condition, only two participants chose to help for the full amount of time. As indicated in Figure 1.1, the times between the two conditions differed significantly according to Welch's t-test, $t(21.8) = 2.21$, $p = .038$. On average, participants primed with disgust helped for 23.85 seconds, while participants primed with clean

helped for 11.13 seconds. The 95% confidence interval for the effect of disgust on moral behavior is between .769 and 24.67.

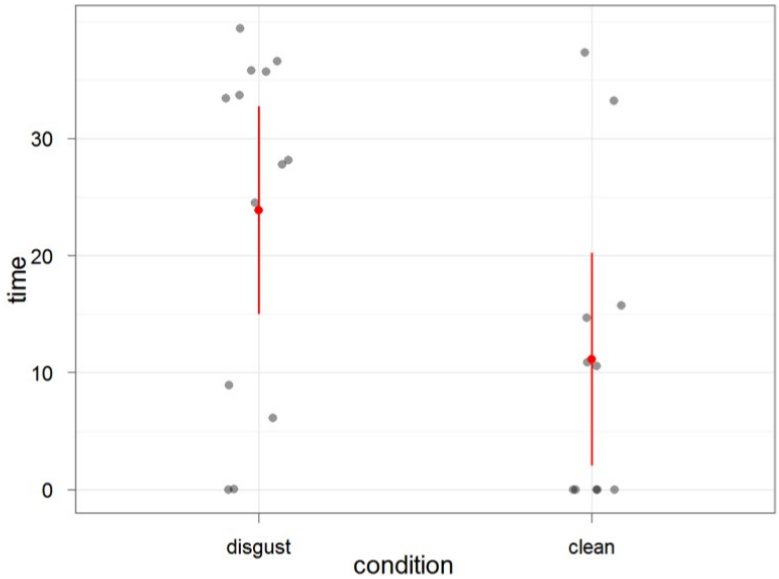

Figure 1.1 Amount of time participants helped across both Clean and Disgust conditions.

Figure 1.2 below indicates a manipulation check of the average ratings of the pictures for each condition. The horizontal line represents the midpoint at which participants had a neutral feeling about the disgust and cleanliness of each picture. This graph shows that our manipulation for both the Disgust condition and Clean conditions were successful. For instance, the means for each condition are above the midpoint of four, thus displaying that participants in the Disgust condition rated the pictures overall more disgusting than less disgusting, and participants in the Clean condition rated the pictures overall more clean than less clean.

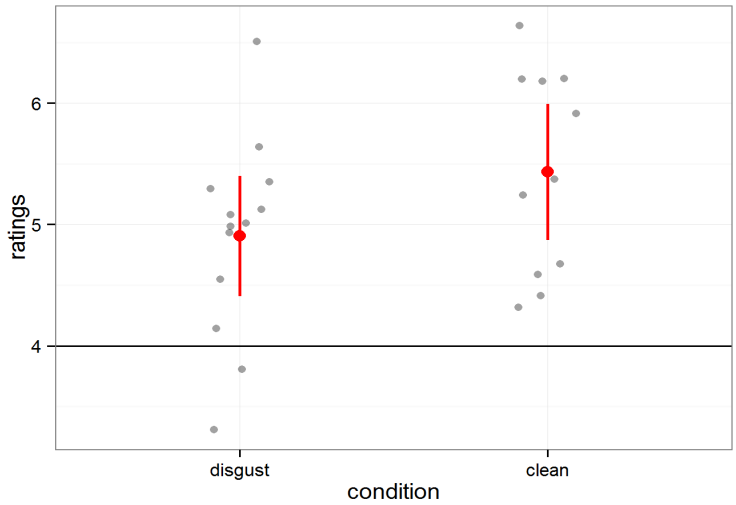

Figure 1.2 Average picture ratings across both Clean and Disgust conditions.

Discussion

While previous research strongly suggests that the emotion of disgust forms people's opinions about others' actions as wrong, there has not been a large quantity of research about the effects of disgust on one's own moral behavior. Since little research has been done, our intentions were to dig deeper to find an answer as to what might unconsciously affect one's decision to help. As previously stated in the research mentioned, Rozin, Haidt, and Fincher (2009) and Liljenquist, Zhong, and Galinsky (2010) showed how there can be an equivalency between moral disgust and physical disgust. With this, the reasons why people choose to help could be to eliminate their feelings of disgust because they feel contaminated, motivating them to cleanse via helping.

It is possible to say that moral behavior may be influenced similarly to moral judgment. One reasoning as to why people may help when presented with a disgusting experience could be based along the lines of Jonathan Haidt's Moral Foundations Theory. As discussed earlier, Haidt explains six moral dimensions that could vary across cultures in the way a person feels when

presented with a moral situation. If the results were consistent with this theory, it would indicate that people who feel physically disgusted would be more likely to help because they want to cleanse themselves from the disgust they felt from the priming. To further this, Liljenquist, Zhong, and Galinsky's (2010) study demonstrated this phenomenon where they found that those participants who did not use an antiseptic wipe volunteered more often (74%) than those that did use the wipe (41%). This shows that the participants felt physically contaminated and wanted to cleanse themselves which was satisfied by helping with another study. For example, our study gave the participants the option to help the researcher pick up spilled Dum-Dums. If the participants stayed to help, it could have been to help themselves feel better after physically feeling contaminated from the disgust priming.

In addition, the results may have been consistent with Haslam's (2006) Dehumanization Theory, which states that making a group of people appear to possess animalistic traits is a way of dehumanizing them and facilitating their destruction. Thus, priming disgust may lead to a more dehumanized way of looking at others, evoking less sympathy. In this case, if our results were consistent with this theory, the results would also be consistent with the priming phenomenon because the participants are in a negative state and therefore acting consistently in a negative manner (i.e., not helping). Bargh et al. (2001) directed a study that led to an explanation for this outcome. In his study, he primed either competitiveness or cooperation and found that participants were only competitive or cooperative after the priming for the immediate testing, but later, the priming subsided. This explanation can be ruled out for this study because the priming was not consistent with the results. If this had been the case, participants would help less in the Disgust condition and more in the lean condition when in fact, the Disgust condition helped longer.

Limitations

There may seem to be an obvious limitation with this study with experimenter effects as it could skew our results, but in this particular case, we do not believe that this is possible. Our hypothesis was formulated simply because we had to choose one way or the other. We had no certain expected results while running the procedure. In fact, Liljenquist, Zhong, and Galinsky's (2010) study was not discovered until after we conducted the procedure, which is the means for a large sum of the explanation behind our hypothesis.

Another reason for people helping with a moral behavior could be because of Cialdini et al.'s (1987) Negative State Relief Hypothesis which discusses that people help in order to relieve themselves from a negative state. If the results were consistent with this hypothesis, it would indicate that the participants were more likely to help because they wanted relieve the negative mood stimulated by the priming by helping someone else to make themselves feel better. Generally, this hypothesis is evoked by moods of sympathy or empathy so the participant feels negatively affected by the priming, in this case of disgust, and when they see someone else who is struggling or in an unfortunate situation, they help them in order to help themselves improve their mood. This theory indicates a possible limitation for our study because we cannot rule it out completely. It is possible that participants were not using the helping behavior to replace physical disgust, but rather using the helping behavior to relieve an emotional disgust that occurred at any point in time before the helping behavior incident.

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