

The Limits of Appealing to Disgust

Joshua May

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Abstract: The rhetoric of disgust is common in moral discourse and political propaganda. Some believe it's pernicious, for it convinces without evidence. But scientific research now suggests that disgust is typically an effect, not a cause, of moral judgment. At best the emotion on its own only sometimes slightly amplifies a moral belief one already has. Appeals to disgust are thus dialectically unhelpful in discourse that seeks to convince. When opponents of abortion use repulsive images to make their case, they convince few, even if they rally their base. When champions of animal rights show graphic depictions of the torturous conditions of animals in factory farms, they convince only those previously ignorant of the severity of such conditions. Ultimately, disgust may be less pernicious than it is useless.

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1. Introduction

Disgust is a powerful and visceral emotion, so it's no wonder that it enters moral and political discourse. Leon Kass (1997), for instance, famously appeals to the "wisdom of repugnance" to motivate us to resist biotechnologies, such as human cloning. Kass arguably had a profound impact on federal policy in the United States, given his role as chair of George W. Bush's President's Council on Bioethics. Perhaps most notably the Bush administration ushered in a ban on federal funding of research using new embryonic stem cell lines, which arguably hindered medical advancement.

More recently, the rhetoric of disgust entered media outlets around America when a video surfaced in 2015 regarding Planned Parenthood, a non-profit organization specializing in sexual and reproductive health services. The Center for Medical Progress, an anti-abortion group, secretly filmed a conversation over lunch with a physician from Planned Parenthood, Dr. Deborah Nucatola. Over lunch, Dr. Nucatola discusses the demand for and costs of body parts from fetuses aborted at Planned Parenthood clinics. (Selling such parts is legal in the U.S. so long as it's not done for a profit.) Conservative commentator, Paul Greenberg (2015), railed against the "gruesome" video in an opinion piece published in various newspapers, primarily in Southern states. He appealed to reactions of "repugnance" and celebrated the way the video made this vivid: "Those of us who have long opposed abortion (except perhaps in the clearest, life-threatening cases) stand accused of using these videos to inflame public opinion against it. It's an accusation to which I plead guilty."

Both liberals and conservatives appeal to the idiom of disgust. For conservative philosopher, John Kekes (1998), heeding our reactions of moral repugnance helps societies maintain social order by marking “the kind of violation that threatens civilized life” (105). Similarly, William Ian Miller (1997), writes that disgust “signals seriousness, commitment, indisputability, presentness, and reality” (180), applying chiefly to cruelty, betrayal, hypocrisy, and fawning (185-6). Miller thus deems disgust “above all... a moral and social sentiment” (2). Dan Kahan (1999) defends the progressive appropriation of disgust, as when liberals describe racism, sexism, and homophobia as repulsive (see also Midgley 2000; Kumar 2017). Kahan claims that disgust has “powerful rhetorical capital” (63), making it an “indispensable member of our moral vocabulary” (64). Some scientists appear to agree, arguing that the rhetoric of disgust can affect causes that aren’t distinctively conservative, such as environmental conservation, opposition to genetically modified foods, and anti-vaccination movements (Rottman et al. 2015; Clifford & Wendell 2015).

Those who appeal to disgust in their arguments and rhetoric do not target a narrow audience. Kass (1997), for example, speaks of “the widespread repugnances of humankind” (21), which arise “from the man or woman in the street and from the intellectuals, from believers and atheists, from humanists and scientists” (19). Likewise, what Kekes (1998) calls “moral disgust” is the emotional response to actions that “just about everybody in contemporary Western societies would find disgusting” (102); it’s “the normal reaction” whose “absence requires further explanation” (103).

Elsewhere I have contended that arguments from repugnance fail by unwarrantedly assuming that disgust substantially influences moral judgment in the first place (May 2016). Still, one might argue that *rhetorical* appeals to disgust in discourse and propaganda effectively convince despite being poor arguments. Here I aim to show that rhetorical appeals are substantially limited. Our best scientific evidence suggests that the feeling of disgust alone hardly influences moral judgment and is largely an effect of an existing moral judgment. So the emotion isn’t fit for convincing opponents or even agnostics. Getting one’s audience disgusted works best when it draws their attention to facts of which they were previously unaware. But the tactic is more likely to just entrench already existing moral judgments, rally one’s existing allies, or even push people away from one’s cause.

Other ethicists have likewise doubted that appeals to disgust are valuable (e.g. Nussbaum 2004; Kelly 2011). However, such critiques grant the dubious assumption that the emotion all by itself substantially influences moral judgment. The problem with the rhetoric of disgust is more fundamental. Our best scientific account of disgust’s relation to moral judgment suggests that it’s of limited use in moral and political discourse.

2. Disgust Hardly Influences Moral Judgment

A main goal of argument and rhetoric is to change people’s minds. If appeals to disgust are to achieve this goal, then the emotion should substantially influence moral judgment. Fortunately, scientific research on disgust is booming (Haidt 2003)—indeed, we might dub this the “decade of disgust.”

Some studies merely demonstrate correlations between moral judgment and disgust, particularly among certain groups. Political conservatives, for example, are more

easily disgusted than liberals, and this predicts real differences in behavior, such as voting choices in presidential elections, even when controlling for variation in personality traits. Such findings have been reproduced in an enormous sample and with participants from over 100 countries (Inbar et al. 2012). Neuroscientists have even been able to significantly predict whether someone is conservative simply by detecting heightened activity in a network of brain areas when the individual is viewing certain disgusting images, such as a mutilated body, which have nothing to do with politics (Ahn et al. 2014). Now, conservatives and liberals certainly hold different moral opinions about many subjects, so perhaps their differences in disgust-sensitivity are part of the cause. While suggestive, these data do only support correlations; let's focus on direct evidence of a causal connection.

Over a dozen published experiments do *seem* to show that merely feeling unrelated or incidental disgust near the time of a moral judgment can make it substantially harsher or more negative. There are numerous proponents of such findings. Daniel Kelly (2011), for example, says that disgust is “powerful” (124), capable of “dramatic effects” on our moral opinions (130). Jesse Prinz even goes so far as to conclude that “we can form the belief that something is morally wrong by simply having a negative emotion directed towards it” (Prinz 2006: 31). Alexandra Plakias (2013) similarly contends that “disgust is strongly implicated in moral judgment” (261) and that this is “well-established” (264) by the science. Such proclamations are not limited to philosophers either. Hanah Chapman and Adam Anderson (2013) recently write that the empirical studies “converge to support the notion that disgust does play an important role in morality” (322), including “an important modulatory influence on moral judgments” (313).

Let's consider the evidence.

2.1 Inducing Disgust

Some “moral dumbfounding” studies suggest that our moral beliefs are primarily driven by emotions, such as disgust, while conscious reasoning is just rationalization after the fact (e.g. Haidt et al. 1993). However, the studies don't clearly measure disgust in particular, let alone manipulate it (May 2016, 46). Moreover, emotions needn't be implicated simply because people struggled to articulate the reasons for their positions. Moral judgment, much like many other kinds of judgment, can be quick and automatic while nonetheless resulting from unconscious reasoning from sophisticated principles (Dwyer 2009; May 2018).

The experiments to consider are those that manipulate disgust and measure moral opinions about hypothetical scenarios. This methodology is especially significant, since we can isolate the power of this emotion *all by itself* by inducing disgust that is irrelevant or *incidental* to the action being evaluated. After all, we're interested in whether getting one's audience to feel queasy can *alone* influence the moral evaluation of an action, beyond merely correlating such a reaction with something else that does the real work, such as drawing attention to information about the action's consequences or the actor's intent.

Experimenters have induced disgust in various ways. Some have used hypnosis to make participants feel a flash of disgust upon reading a certain word (Wheatley &

Haidt 2005). Others rely on a foul smell in the air, a film clip involving an unflushed toilet, or recalling a disgusting experience (Schnall et al. 2008). Still others have had participants directly ingest a bitter liquid (Eskine et al. 2011) or listen to the sound of a man vomiting (Seidel & Prinz 2013). In these and some other studies, disgust on average tended to make moral judgments harsher.

Other experiments have manipulated what may seem to be disgust's opposite: feelings of purity or cleanliness. The results are more varied, however. Participants made to feel more clean—e.g. by using hand sanitizer or washing their hands—sometimes register moral judgments that are less harsh but sometimes more (for review, see Tobia 2015).

At any rate, the disgust experiments provide the more direct test. Yet they do not establish that this emotion substantially influences moral judgment, for several reasons (see May 2014). First, the experimenters often only find an effect of disgust among some *subset* of participants, such as those who are highly hypnotizable or especially attuned to changes in their bodily states. Second, such effects are *scarce*, as they're found among only a minority of the hypothetical scenarios tested. Third, the differences in responses between the control and manipulation groups are relatively *small* (a point briefly raised by others, notably Mallon & Nichols 2010, 317–8; Pizarro et al. 2011). By and large, responses slightly shift on the same side of a fine-grained scale. This indicates at best a slight change in the severity, but not the valence (or polarity), of the judgment. For example, Wheatley and Haidt (2005) used a 100-point scale with “0” labeled “not at all morally wrong” and “100” labeled “extremely morally wrong.” In one vignette involving bribery, the average morality rating of the control group was 78.73 while the disgust group's was 91.28. This difference is statistically significant, but that roughly means only that it was not likely due to chance; we have reason to reject the null hypothesis that there really is no difference in the general population. Importantly, though, statistical significance alone does not mean that a difference, or an effect, is substantial in the ordinary sense.

These problems are not mere quibbles about a few early studies. There is now ample evidence that the effect of moral judgment on disgust is far from robust. Numerous attempts to replicate such findings have failed. And a recent meta-analysis (Landy & Goodwin 2015) of the effect sizes from 50 studies confirms that disgust at best only slightly amplifies moral judgments ($d = 0.11$), ranking “small” on a standard metric of effect sizes. Moreover, the effect size disappears ($d = -0.01$) among unpublished studies, suggesting a publication bias in favor of positive results. It is no surprise, then, that there are consistent limitations even among the studies that do report (scarce) effects, as opposed to replication failures. Thus, insofar as disgust alone influences moral judgment at all, we have evidence only that it can make some existing judgments slightly harsher, not change moral opinions.

Disgust's limits may be even more severe. There is some evidence that the (slight) effect on moral judgment disappears in participants who can more finely distinguish their own emotions (Cameron, Payne, & Doris 2013). Thus, the effect might merely be due to an unconscious misattribution of the source of one's disgust (May 2018). The studies on incidental disgust, then, may not illuminate anything about the ordinary processes leading to forming moral beliefs. The emotion's role at best may be more akin to the slight influence that fatigue can have on our moral beliefs. Even if being mentally tired can

make one's moral judgments slightly harsher, we wouldn't expect lawyers, politicians, philosophers, and pastors to try to make their audiences sleepy. To use some language common in cognitive science, disgust may be a mere *performance error* that does not shed light on moral *competence* or the psychological mechanisms that guide ordinary moral judgment (May 2016). There is more to say about how disgust could sometimes amplify moral judgment if it is typically a mere consequence, but I leave those details for another occasion (see May 2018). The upshot is that, while rhetorical appeals to disgust may not be utterly worthless, their utility is at best greatly limited.

Now, perhaps the disgust experiments aren't best suited for revealing the power of this emotion to substantially influence moral judgment. Most of the studies measure moral attitudes toward issues that aren't particularly controversial and aren't violations of the purity of one's body or mind. For example, researchers have asked disgusted participants about the morality of acts of lying, bribery, littering, and stealing. Moreover, when researchers do study moral judgments having to do with purity norms, they ask about relatively uncontroversial topics, such as incest, cannibalism, and eating one's pet dog. Perhaps incidental disgust's ability to influence moral cognition is more apparent or powerful for *controversial* topics that specifically deal with *purity* violations.

A recent study, however, suggests otherwise. Clifford and Wendell (2015) measured attitudes toward some politically controversial topics in the purity domain, such as support for: genetically modified and organic foods, vaccinations, government regulation of unhealthy foods (e.g. a soda tax), smoking bans, and legalizing recreational drugs. Incidental disgust was manipulated and participants' general sensitivity to the emotion was assessed in order to see if either variable had an effect on political attitudes toward the controversial health issues. Clifford and Wendell found only that disgust *sensitivity* predicted most of the political attitudes measured. This finding is of course consistent with the hypothesis that disgust is an effect, not a cause, of negative attitudes toward such perceived threats to purity norms. This finding is also consistent with the hypothesis that disgust influences such attitudes only by making relevant thoughts about the topic more salient. For example, disgust-sensitive people may be more inclined to feel disgust toward genetically modified foods but *also therein* be more inclined to see such foods as harmful to the body. In that case, it may be thoughts about harm, not the mere feeling of disgust, that's responsible for the change in attitude. Moreover, tellingly, the researchers found hardly any evidence in support of the causal claim that the feeling of disgust *alone* helps to *cause* such attitudes independently of relevant thoughts. When incidental disgust was manipulated, it produced a statistically significant difference only in attitudes toward the regulation of junk food (e.g. through taxes, bans, or mandatory calorie information). And this lone effect "fell short of statistical significance" originally, only becoming significant after "controlling for covariates" (168) that are unidentified.

2.2 Disgust Follows Moral Judgments

No doubt emotions can sometimes influence moral cognition, as affect in general sometimes provides us with information (Schwarz & Clore 1983; Pizarro 2000). However, we've seen that empirical evidence is converging on the idea that the feeling of disgust alone is not a substantial cause (or sustainer) of a sizeable class of moral beliefs.

It gets worse, for there is some evidence from experimental studies that repugnance is typically an *effect* of moral judgment, not a cause.

Of course, some reactions of revulsion are not connected to moral beliefs at all. Eating an insect might disgust you but it needn't have any relation to your moral beliefs, either as an effect or as a cause. However, when there *is* a connection between a moral belief and repugnance, the emotion may be elicited by the belief, not the other way around. This issue has been raised by others (e.g. Huebner et al. 2009; Pizarro et al. 2011; May 2016), but is there specific evidence to support it?

The most popular experiments on disgust and moral judgment have not precisely measured temporal ordering. Some, however, have attempted to do precisely that using an electroencephalogram to track the timing of different mental processes (Yang et al. 2013; Yang et al. 2014). In short, the researchers found evidence that participants process the information that would trigger disgust *after* making the moral judgment. Two EEG studies from a single lab certainly do not settle the matter. However, we can combine this evidence with some other empirical studies on "moralization," which likewise demonstrates how disgust follows negative moral judgments.

Consider changes in reactions of disgust following a change in specific moral beliefs. A natural example concerns omnivores who become vegetarians and who are eventually disgusted by meat. We can begin by considering some anecdotes. A topic on the Internet forum Reddit.com (2014) concerns exactly this issue. The original poster writes:

I remember eating meat and being happy with it but I've been a vegetarian for over 10 years now. I can't remember when this started but I am utterly disgusted by meat. Can't stand the smell or look or thought of meat.

Other commenters on the post report similar changes in sentiment over time.

Of course, not every vegetarian becomes repulsed by meat, perhaps for various reasons. Some may be vegetarian merely for health, not moral, reasons. For those who have moral reasons, their confidence in them may be weaker than others'. Finally, the desire for meat may be too entrenched in some, given their personal preferences or length of time as a meat-eater.

However, there is some empirical evidence that "moral vegetarians" are more disgusted by meat than those who are vegetarians for the health benefits (Rozin et al. 1997). And further research suggests that this result is not simply due to moral vegetarians already being more disgust-sensitive (Fessler et al. 2003). Thus, it seems we can take the Redditors' reports at face value: the ethical beliefs of many moral vegetarians eventually elicit disgust as a consequence. The emotional response is related to the moral judgment by following it.

This general phenomenon, which Paul Rozin has called *moralization*, is not restricted to vegetarianism either. Few people are vegetarians, let alone for moral reasons, but many more are now disgusted by cigarette smoke. Just in the past 50 years attitudes toward smoking tobacco have radically changed. Interestingly, there is some evidence that people in the United States have become more disgusted by cigarettes and other tobacco products after forming the belief that it's a *morally* questionable habit and industry to support (Rozin & Singh 1999). Such research confirms a common phenomenon in ordinary experience about a variety of actions: disgust commonly follows one's moral judgments.

3. Changing Minds?

Our best scientific evidence thus suggests that disgust alone is typically a *result* of existing moral judgments, while any influence in the other direction is generally *minuscule*. Even if disgust can be a fitting emotion toward foul acts (Kumar 2017), it's not an integral input to moral cognition.

Feelings of repugnance can certainly influence moral judgment if they inform one of morally relevant information, such as the severity of a harm. Suppose, for example, that I read in the newspaper about a gruesome murder that a young child unfortunately witnessed. Disgust may help draw my attention to how severely this traumatized the child. Someone devoid of disgust may not fully appreciate exactly how it would affect an ordinary person to see, say, another human disemboweled. But this doesn't accord disgust a substantial role in the application of the concept of moral wrongness. Instead, revulsion can aid in apprehending morally relevant facts in cases that happen to involve grisly details that are liable to gross one out.

To further illustrate, imagine that a disgruntled employee spits into his boss's coffee. The disgust one feels when witnessing such an act may draw one's attention to the negative consequences, including risk of illness and uncleanliness. But we lack compelling empirical evidence that disgust alone changes one's mind—making one think, regardless of highlighting relevant information, that an action is now wrong or substantially worse. Compare: My smartphone might inform me by searching the Internet that sharing needles spreads disease. But neither my iPhone nor Google are integral to the process of categorizing actions as moral or immoral.

Rhetorical appeals to repugnance thus have considerable limitations. First, making one's audience feel revolted about an action or policy is unlikely to change their moral opinion about it. After all, a strong disgust response to a moral violation typically follows only if one already deems it a moral violation in the first place. Second, while disgust may sometimes slightly amplify one's moral condemnation, it's not so powerful that it will likely change many minds. Disgust thus appears to have much less rhetorical capital than its proponents have accorded it.

Of course, revulsion can motivate a change in moral judgment if we speak loosely. One might use "revulsion" to refer to a negative moral attitude, for example, especially regarding acts so heinous as to repel upon contemplation. But then it's trivially true that so-called "revulsion" can effect a change in moral belief. Loose usage of "disgust" can also involve reference to a different emotion. There is some evidence that when a moral violation isn't independently disgusting the term "disgust" is often used merely to express anger (Nabi 2002; Gutierrez et al. 2012; Herz & Hinds 2013). Not long ago in the UK, a distinguished writer called a policy "disgusting" that would ban prisoners from receiving books (quoted in Flood 2014). The policy may be despicable and infuriating, but *disgusting*?

Appeals to disgust in moral and political discourse, however, are often literal. As Kekes puts it, to consider an action "sickening is not a metaphor" (1998, 101). At the very least, the rhetorical appeals of interest here deliberately evoke those visceral feelings so characteristic of being grossed out, even if faint. In what follows, we'll consider four common examples from both sides of the political spectrum: attempts to motivate

condemnation of homosexuality, abortion, cruelty to animals, and environmental pollution.

3.1 Conservative Rhetoric

Those on the political right tend to oppose the lifestyles of those who are lesbian, gay, bisexual, or transgender, and the language of disgust is common in the corresponding rhetoric. Consider one such instance from Thabiti Anyabwile, the pastor of a church in Washington, DC. Anyabwile (2013) wrote a piece on the Christian website, *The Gospel Coalition*, in which he argued for the importance of describing homosexual acts graphically in public discourse in order to engage one's "gag" reflex: "That reflex triggered by an accurate description of homosexual behavior will be the beginning of the recovery of moral sense and sensibility when it comes to the so-called 'gay marriage' debate."

Similar appeals to disgust cropped up in 2015 when residents of the largest city in Texas were tasked with voting on the Houston Equal Rights Ordinance. If passed, Proposition 1 would have simply outlawed discrimination on the basis of sexual orientation or gender identity. But opponents worried that, in order to avoid discriminating against transgender people, businesses would be required to allow anyone to use the men's or women's bathrooms if they so desired. A radio advertisement opposing the ordinance, produced by the Campaign for Houston, had a young woman proclaim: "This ordinance will allow men to freely go into women's bathrooms, locker rooms and showers. That is filthy, that is disgusting, and that is unsafe" (quoted in Driessen 2015).

Rhetorical appeals to disgust are also common among conservatives who vehemently oppose abortion in a wide range of cases, if not all of them. Since they see it as the murder of an innocent person, conservatives aim to convince as many people to share their opposition to the practice. One tactic, used in America at least, is to display gruesome images of aborted fetuses at various stages of development. Perhaps the goal is merely to acquaint onlookers with a vivid depiction of the effects of abortion, not to disgust. There are some merits to moral persuasion by images, at least because they can make vivid morally relevant facts that we'd otherwise overlook or underappreciate (McGrath 2011). Nevertheless, the pictures used do typically evoke disgust. The activists could simply present the facts in a less arresting manner, but they believe that approach would have less rhetorical force. One leading anti-abortion activist reports of such images: "We have lots of anecdotal evidence that they're very effective" (quoted in Graham 2015).

However, the role of disgust in moral judgment suggests otherwise. Those already opposed to abortion, for example, will likely find images of aborted fetuses morally horrific and their moral condemnation will be reinforced. Those who are already "pro-choice" will also tend to find the images repellent, but in no way *morally* problematic. The same goes for sexual morality: disgust per se will only typically resonate with those who already find the practice or its practitioners morally questionable. If anything, disgust alone will only slightly amplify one's existing moral judgment, not change one's mind.

One recent study directly supports this prediction. Daniel Wisneski and Linda Skitka (2017) examined whether attitudes toward legalized abortion would be affected

by images of aborted fetuses rather than unrelated disgusting images (e.g. of animal abuse or feces). The researchers apparently found that, while participants' moral judgments weren't affected by the abortion-related images (reported in the Supplementary Materials), their *moral convictions* were slightly amplified. "Moral conviction" is the researchers' term for roughly how deeply you hold your moral judgment—how much your position on abortion is "a reflection of your core moral beliefs and convictions" and "deeply connected to beliefs about fundamental questions of 'right' and 'wrong'" (143).

Importantly for our purposes, the disgusting images of aborted fetuses increased moral conviction on *both sides* of the dispute. Opponents and proponents of legalized abortion came to hold their positions more deeply or with greater conviction when they recently saw images of aborted fetuses, compared to those in the control groups who saw disgusting images but ones that were not related to the topic of abortion. So, contrary to prominent abortion activists, this study suggests that their visual media of choice further entrenches existing opinions on both sides, leading to greater *polarization* not *persuasion*.

What about agnostics or those on the fence? Perhaps activists merely aim to convince this group with vivid depictions of mangled fetuses. Here is where the science can help most. Given that disgust alone does not substantially influence moral judgment, it's unlikely to be effective even with undecided targets. Certainly repulsive images may tip the scales for some, but we have reason to doubt they are "very effective" or possess "powerful rhetorical capital."

3.2 Liberal Rhetoric

Now consider leftist or liberal appeals to disgust in opposition to practices like animal experimentation or factory farming. Activists have famously broken into researchers' laboratories to acquire videos revealing cruelty toward animals. Others have gone undercover and captured footage of the poor treatment of many animals in factory farms. In some U.S. states, covertly capturing such disturbing treatment and conditions on tape is now illegal, due to so-called "ag-gag" bills (Oppel 2013). Importantly for our purposes, such videos don't just depict cruelty, but also repulsive conditions and treatment, such as the bloody battering of helpless livestock, diseased and disfigured animals with open wounds, rotting carcasses left in communal pens, and the burning of flesh with hot irons and caustic chemicals. In one sixty-second video on factory farming, from the People for the Ethical Treatment of Animals, the prevalence of blood, guts, manure, and other bodily fluids is conspicuous. Similarly, animal rights activists sometimes pour red paint on people wearing fur coats, often famous individuals (particularly Joan Rivers). The paint is meant to look like blood, which may provoke some revulsion among spectators.

We can also consider environmentalist campaigns to reduce pollution and avert the disasters of climate change. Disgust is fitting for moral issues involving pollution of the body or mind, but also the environment. Some researchers even believe that the science of moral judgment can harness disgust to motivate conservation efforts. Rottman, Keleman, and Young write that "invoking purity-based concerns and closely associated feelings of disgust... can be an effective method for increasing moral concern for the environment" (2015, 138). Such tactics are already in use. To raise awareness about polluting the ocean with plastic, one environmentalist poster depicts a sushi roll tightly wrapped in pieces of plastic grocery bags, instead of seaweed, with what looks like part

of a condom in the center of the roll, instead of fish. The tagline reads: “What goes in the ocean goes in you.”

There is some evidence that framing environmental issues in terms of impurity can increase pro-environment attitudes among conservatives (Feinberg & Willer 2013). Liberal and conservative participants were randomly assigned to read either a non-environmental message, a pro-environmental message framed in terms of (and depicting) pollution and impurity, or a pro-environmental message framed in terms of (and depicting) harm and destruction. While liberals reported relatively high pro-environmental attitudes regardless of the type of message, such attitudes increased among conservatives who read the purity message. However, the researchers manipulated relevant information about moral concerns of purity or degradation, not incidental disgust. Perhaps disgust played a role, but only when it was *integrated* with information that conservatives took to be particularly relevant (cf. Wisneski & Skitka 2017).

So this experiment doesn't exactly provide powerful evidence that feeling disgust alone increases moral support for environmental protection among conservatives. Instead, we have evidence that conservatives are more inclined to think that the environment needs protection after reading about it being filled with pollution and impurity rather than being harmed or destroyed. These findings can be explained cognitively by research which suggests that conservatives more strongly value purity, sanctity, and avoiding degradation (e.g. Graham et al. 2013). When threats to such values are more salient, conservatives become more aware of it.

3.3 Rhetorical Limits

In the end, whether one is advocating for animal rights or environmental protection, we have little reason to think disgust will be effective at changing people's minds. Much like pro-choicers, those who believe animals lack anything close to moral rights may be disgusted by their conditions in laboratories or factory farms, but this alone is unlikely to significantly affect the relevant moral beliefs. Animal rights activists and their allies may be especially disgusted and connect this response to their moral condemnation of the treatment of animals. However, like conservative responses to aborted fetuses or to transgender people in bathrooms, we're at best only witnessing the power of disgust to slightly amplify one's existing moral beliefs.

Now, suppose one's goal is merely to entrench people's moral beliefs on one or both sides of an issue. Perhaps one is merely trying to rally the base or earn partisan votes. As a merely descriptive matter, disgust might be somewhat effective at achieving this aim. However, since appeals to disgust can themselves be rather unappealing, they incur a special risk of *backfire*. Consider again the “pro-life” signs depicting aborted fetuses. These are notoriously offensive to many people, and not just liberals who already identify as “pro-choice.” Many people undecided about the morality of abortion can easily be turned off by “pro-life” movements that use horrific imagery. It's thus unsurprising that we find experimental evidence that images of aborted fetuses tend to entrench moral convictions on both sides of the debate (again, see Wisneski & Skitka 2017).

Better ways of drawing attention to one's cause will likely tap emotions that more powerfully influence moral judgment and that are less likely to backfire. Candidates include *anger* toward gratuitous harm and rights-violations, *fear* of dystopian futures, and

shame toward the dishonorable actions and policies of one's group (Appiah 2010; Jacquet 2015). Some activists have even capitalized on viewers' sexual attraction to celebrities as a way of drawing attention to animal rights. However, like incidental disgust, these emotions might be utterly impotent if they aren't an appropriate response to morally relevant information, such as drawing one's attention to mistreatment or unfairness.

4. Changing Behavior?

The science of moral judgment suggests that appeals to repugnance are unlikely to change someone's mind. Yet they are so common in politics. As Martha Nussbaum (2004) has pointed out, the history of political rhetoric and propaganda is rife with attempts to portray marginalized groups as disgusting—particularly women, Jews, homosexuals, and “untouchables.” While such propaganda is often meant to convince others to join opposition to a policy or practice, such effects can gain traction simply by amplifying existing negative attitudes and motivating withdraw and exclusion behavior that is unmediated by one's moral beliefs. This is compatible with disgust failing to possess the rhetorical capital that conservatives and liberals alike tend to accord it. If disgust is pernicious, it's due to the emotion's slight power to polarize existing divisions and motivate action without a change in moral belief. So, while repugnant rhetoric may be futile when it comes to changing minds, the strategy might be useful for purely motivational tactics, such as rallying one's moral or political allies.

Some appeals to disgust may have this effect unwittingly. During his 2016 presidential bid, Donald Trump commented on Hilary Clinton taking an especially long time to use the bathroom during a debate. Trump said the scenario was “too disgusting” to discuss (Goldfarb 2015). The remark is reminiscent of another that Trump made months earlier during his feud with Fox News anchor Megyn Kelly in which he said: “You could see there was blood coming out of her eyes, blood coming out of her... *wherever*” (Rucker 2015). It's notable that Trump's repeated appeals to disgust may have been merely to rally the Republican base (especially when at the time he was preparing for the primary, not general, election). Similarly, Greenberg's piece on abortion appeared primarily in newspapers in the Southern states, although this was probably unintentional, as more liberal outlets are simply unlikely to publish it. Either way, the effect will be of mobilizing those already vehemently opposed to abortion, not of changing the opinions of the undecided or of those who already support a woman's right to choose.

One might ask, however: Why would disgust rally one's supporters if it doesn't substantially influence moral judgment? One answer lies in our ability to attribute feelings to an incorrect source (Schachter & Singer 1962). If you already hold a negative moral judgment, disgust can indeed amplify it by causing you to unconsciously misattribute the true source of disgust (such as a bloody limb) to a morally relevant factor (such as gratuitous suffering). Revulsion can amplify moral judgments in this way but only indirectly. We're tacitly aware that stronger emotional reactions tend to follow a harsher moral judgment and are thus evidence of its severity, much like when we automatically take more smoke as evidence of a larger fire (for further discussion, see May 2018).

Another explanation lies in the motivational, not cognitive, effects of disgust. So far we have focused on how this emotion affects one's beliefs, since rhetoric is chiefly meant to convince. Emotions, however, are commonly thought to feature *action tendencies*: rapid effects on motivation and behavior (but see Seligman et al. 2016: ch. 8). Consider not only disgust but other emotions, such as anger and fear. Anger seems to motivate attack, particularly retaliation in response to poor treatment or perceived injustice, while fear motivates withdraw and flight from a perceived danger (Haidt 2003). Disgust motivates withdraw and expulsion from the body with the characteristic "gape face," which typically involves opening of the mouth and sometimes protrusion of the tongue (Kelly 2011). When directed at the activities of certain people or groups, this emotion can easily motivate withdraw from the group and its members. When disgust-based rhetoric or propaganda are then disseminated widely, gaining a large audience, it may lead a sizeable number of people to increase their exclusion of, or withdraw from, the already denounced individual or group (compare Nussbaum 2004; Kelly 2011). Thus, disgust may be able to motivate action without being heavily mediated by an influence on one's moral beliefs.

If this is right, the only significant role for the moral psychology of disgust may be in policy-making. The emotion may nudge populations away from truly repugnant people or foul behavior. Compare public health problems. When we work to decrease rates of diabetes, cancer, infant mortality, and other large-scale health problems, we pay close attention to even slight contributors. Increasing taxes on cigarettes won't discourage everyone from smoking, because cost is only one among many factors and because its effect on the problem is slight. Nevertheless, taxes on cigarettes can play an important role in sound policies to address problems among a massive population.

However, again there is a special limit with repugnance: the risk of backfire (§3.3). Disgust is indeed a powerful emotion that motivates retreat from its object. In the case of propaganda, the emotion can easily be directed toward both the messenger and their message.

5. Conclusion

A sizeable amount of scientific evidence suggests that stirring up feelings of disgust in an audience is unlikely to substantially influence their moral beliefs. By itself disgust *hardly influences* moral judgment; it at best sometimes slightly amplifies one's existing condemnation. Moreover, when there is a connection between one's moral beliefs and one's reaction of disgust, the emotion is typically a *consequence* of the belief that one has already formed, not a cause.

Repugnant rhetoric and propaganda are thus unlikely to convince one's opponents or even those on the fence. Such tactics would be much more powerful if disgust alone substantially influenced moral judgment. Instead, this approach is liable to merely rally one's existing allies, polarize opinions in the discourse, and discourage critical reflection on one's beliefs. Repugnant propaganda can sometimes draw attention to good causes, but there is great risk of backfire in which one's captive audience becomes repelled by the activists and their message. Perhaps such pernicious effects are more likely to occur for political conservatives, since they are more easily disgusted than liberals (Inbar et al. 2012). Even so, we're all afflicted to some degree, jeopardizing the entire discourse.

Of course, disgust can certainly sometimes influence moral judgment, perhaps sometimes rather substantially. However, in such cases it's unlikely to be incidental but rather *integral* (to borrow a term from Cameron et al. 2013). That is, disgust can influence one's moral thinking when it draws one's attention to morally relevant information, in which case the emotion isn't doing the heavy lifting. Depictions of open wounds and mangled body parts, for example, can sometimes provoke anger at cruelty or injustice, but the disgusting aspects of such scenes are not necessarily integral to the relevant moral judgment. Indeed, our best scientific evidence suggests that core disgust does not play an important role in ordinary moral cognition. Disgust may ultimately be more useless than it is pernicious.

While I think we should be dubious of disgust's power to convince, none of this is to say that appealing to this emotion can't garner quick and powerful motivational and behavioral responses. But change in moral judgment—indeed moral progress—is slow and follows from vivid comprehension of morally relevant information (May 2018). A better approach, for example, grounded in the science of moral judgment, may be to inform others of the relevant facts, point out inconsistencies in their reasoning, and draw analogies that encourage treating like cases alike (see Campbell and Kumar 2012).

Perhaps the limits of disgust should be unsurprising, for it is rather different from emotions like anger, compassion, and shame. These emotions, unlike disgust, seem to be intimately tied to moral concepts and beliefs, whereas disgust is more easily treated as “pre-normative” (a phrase borrowed from Landy & Goodwin 2015). Orators may do better to evoke these other emotional reactions in their audience. However, a similar difficulty likely remains, since one may be unlikely to feel these emotions without already holding the relevant beliefs.

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