

## Comment: From the Armchair to the Toilet: McGinn's Evolutionary Tale of Disgust

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### Abstract

Strohminger (2014) criticizes McGinn for his lack of attention to recent scientific findings, and for ignoring common sense. This commentary deepens both of these criticisms via an exploration of McGinn's account of the evolution of disgust.

### Keywords

disgust, evolution

One of Strohminger's (2014) central criticisms of McGinn's (2011) theory of disgust is his negligence in failing to consult science, or even common sense. I will deepen both of these criticisms via a closer examination of McGinn's theory of the function and evolution of disgust. While it lies in the background of much of what he says, McGinn does not devote a great deal of attention to his evolutionary account. The majority of the discussion comes in Chapter 6, "The Function of Disgust." Having earlier denied disgust to animals (a mistake that Strohminger has already addressed), McGinn focuses on what it is about the human condition that required that we alone evolved disgust. He says this difference lies in the vastly expanded scope of human desires. This expansion allegedly occurred during a hypothetical and hitherto unrecognized epoch in human evolution, which I will call the Caligulocene. The Caligulocene followed the biological evolution of uniquely human cognitive capacities (such as imagination and intellect, and our sense of the future, possibility, and mortality), and these cognitive capacities had the maladaptive side effect that humans underwent an unrestricted expansion of their desires.

For example, he says, because we could conceive of the future, we were anxious about whether there would be food tomorrow, so we consumed as much of it as possible. Perhaps we will have no mating opportunities in the future, so better to have as much sex as possible. More expansively, humans were not limited to thoughts of the finite, and as such we were able to

conceive of a potentially infinite number of objects of desire. Consequently, no finite number of desired objects could suffice—human desires became "essentially infinite, unquenchable" (2011, p. 124). During the Caligulocene, the only force between early humans and complete decadent collapse was our willpower, but willpower alone could not suffice, so disgust arose as a Leviathan to reign in "a prior tendency in our make-up, namely, boundless excess." "In the simplest case," he says, "disgust exists not to prevent us from eating poisonous food, but to prevent us from eating too much *good* food," and "the original disgust objects (according to this hypothesis) were objects that we were unhealthily greedy about" (2011, p. 125).

Aside from the vast amount of evidence that disgust does function to prevent us from ingesting pathogens, this account is in clear conflict with current (and vastly more plausible) "evolutionary mismatch" explanations of such excesses of food and sex (e.g., Power & Schulkin, 2013), which McGinn (2011) does not mention here. Briefly, mismatch theories hold that early humans, like all of their evolutionary ancestors, lived in an environment where food and mating opportunities were limited. Under such conditions, it was on balance adaptive to, for example, eat as much as possible. This theory holds that our current severe problems with these excesses have more to do with recent cultural innovations (resulting in a surplus supply of these previously desired things), than with any cognitively expanded desire to, for example, eat more and more kinds of doughnuts.

In any case, while the basic fact that disgust protects from the excesses of normal appetites is true enough, the desires of Homo Caligulus do not stop with these. Here, McGinn says, we have to think our way back into prehistory, and "we must be prepared to be bold" (2011, p. 127). Essentially, when the ordinary objects of our desire ran short, or when we grew tired of them, our desires began to spill over, leading us to have sex with unorthodox objects, and to eat anything that seemed edible. I could not see it coming, but McGinn says, "You can see where I am going with this: early humans started desiring sex with

dead bodies and wanting to eat feces ... maybe also desiring to eat decayed human flesh" (2011, p. 127). Such desires, he says, naturally escalate into the strongest temptations, such as incestuous necrophilia. Really.

Taking all of this perhaps more seriously than it deserves, what is (or could be) the evidence for this story? McGinn (2011) gives plenty of examples of depraved human behavior, indiscriminately mixing together various periods of human history, with a stronger emphasis on the present. Granted, there is no shortage of examples that our higher cognitive capacities can lead us into all manner of bizarre behaviors, but the question is not whether people do sometimes do these things, but rather whether the desire to do so is (or was), universal and intense, and McGinn's examples provide no evidence to support this more general hypothesis.

If we turn to standard anthropological methods for evidence (which is more than McGinn does), the situation does not improve. Is there genetic or morphological evidence for massively increased inbreeding during the onset of our cognitive explosion? Do we see a vastly increasing number of human bones with human tooth or tool marks on them at early hominid campsites? Feces on cooking utensils? Artwork depicting these desires? Corpses (perhaps infants) increasingly posed in sexually

provocative ways in their burial sites? Not that I know of. Traditional societies are also often studied as more closely exemplifying our ancestral condition, but is there evidence for the widespread (or at least much more frequent) occurrence of coprophagia, necrophilia, or incest among them? While there are cultural differences in these respects, nowhere do we find behavior widespread or extreme enough to be consistent with the hypothesized pressures of the Caligulocene, and nowhere does McGinn attempt to provide substantial, empirical evidence for it.

This inventory is far from a comprehensive account of the flaws of McGinn's theory. Nevertheless, I hope it suffices to explain why, in the end, I am (truly) in doubt as to whether we are meant to take any of this seriously—whether McGinn's evolutionary story is not merely a joke, but intended as such. Either way it's not that funny.

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# Comment: Strohming versus McGinn and *The Meaning of Disgust*

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## Abstract

Strohming gives a lively and accurate critique of McGinn's book (2011) but is somewhat inaccurate herself in describing the current theoretical state of the science on disgust. My comment primarily focuses on the issues I have with McGinn's and Strohming's discussions and briefly offers a possible unifying account of the function and meaning of disgust.

## Keywords

disgust, emotion, memory, olfaction

Nina Strohming's review of Colin McGinn's *The Meaning of Disgust* (2011) is a delightfully written scathing critique (Strohming, 2014). McGinn's book certainly does not live up to its title pretention of explaining the meaning of disgust, and

should have been called "My Opinion on Disgust," because that, as Strohming points out, is all it is. There is no review or even acknowledgment of the prodigious amount of scientific research that has been conducted on disgust in the last 30 years. More seriously, McGinn makes frequent erroneous statements. He contends that "no auditory elicitor seems to elicit human disgust," ignoring the prototypical revolting auditory elicitor—nails on a chalkboard. He claims that disgust reactions remain stable over one's lifetime, when there is scientific data that the disgust response wanes with age (Fessler & Navarrete, 2005). Empirical evidence also clearly refutes his proclamation that "sagging old flesh smells exactly like young firm flesh" (Haze et al., 2001). In further unscientific dualist mode McGinn asserts that there is no mental disorder that can cause the mind to no longer exist. Yet, Alzheimer's terrible destructiveness is just that. Moreover, his discussion of culture is devoid of global awareness. McGinn

carries on about the repulsiveness of belches, farts, and excrement but overlooks the fact that in various cultures these bodily emanations are praised or ignored. Belching loudly is a gracious compliment to the host at the end of the meal in the Middle East. The Masai dress their hair in cow dung as a cosmetic treatment. Even the aroma of human feces is not a universal turnoff. The U.S. military has been searching for a stink bomb alternative to tear gas for years but has been unsuccessful to date, even with “US army issue latrine scent” as the candidate (see Herz, 2007, 2012). These are just some examples.

As Strohminger (2014) minces no words in saying, McGinn’s (2011) book is mainly about crap. However, there are a few bright spots. Some interesting speculations appear, such as that disgust evolved to rein in our reckless abandon, echoing Freud’s proposition that the function of disgust was to curb the “polymorphous sexuality of childhood” (Freud, 1962); that the farther from the mouth a shunned object is the more bearable it is to touch, though Rozin experimentally demonstrated this nearly twenty years ago (Rozin, Nemeroff, Horowitz, Gordon, & Voet, 1995); and how disgust lies at the root of religion, particularly the development of hygienic rules and rituals to deal with death. McGinn gives a nice rendition of Kolnai’s death-in-life theory, though he seems oblivious to the work of current disgust and terror management theory researchers, and despite his intent, he does not provide a coherent theory of the meaning of disgust. Connected to the theory point is where I take issue with Strohminger.

Strohminger (2014) asserts that the dominant theory of disgust is pathogen avoidance. Yet Valerie Curtis, the original and strongest advocate for pathogen avoidance as the explanation for disgust, complains *bitterly* that the Darwin–Rozin (Rozin, Haidt, & McCauley, 2008) avoidance of oral incorporation account is still the most accepted theory (Curtis, 2013). Which it is. Nor is it “dated” (Chapman, Kim, Susskind, & Anderson, 2009). Moreover, supporting the concept of a “behavioral extension of the immune system” is politically dangerous and socially offensive, as it provides a biological justification for racism, stigmatization of the obese, and a host of other ugly human behaviors.

Based on the disgust and emotion research I have reviewed, death is the worm at the core, and the function of disgust is to protect us from the slow and complex causes of death that besiege us through poison *and* illness. I believe that disgust evolved from fear as a death defense emotion to help us contend with the uniquely human predicament of having very long life spans and continuously needing to fend off microscopic predators. Thus, all bullshit aside, a scientific amalgamation of terror management, and avoidance of pathogens and oral incorporation is, in my opinion, the best meaning of disgust.

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## Comment: Kolnai's Disgust

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### Abstract

In *The Meaning of Disgust* (2011), Colin McGinn employs elements of the phenomenological theory of disgust advanced by Aurel Kolnai in 1929.

Kolnai's treatment of what he calls “material” disgust and of its primary elicitors—putrefying organic matter, bodily wastes and secretions, sticky contaminants, vermin—anticipates more recent scientific treatments of this emotion as a mode of protective recoil. While Nina Strohminger (2014) charges McGinn with neglecting such scientific studies, we here

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attempt to show how Kolnai goes beyond experimental findings in his careful description of the phenomenological differences between disgust and other emotions of forceful disapproval.

### Keywords

disgust, phenomenology

Disgust is presently much in vogue not only in philosophy but also in fields such as psychology and neurobiology. Such concentrated interest in a shared topic on the part of multiple disciplines can lead to greater overall understanding, and Nina Strohminger (2014) charges Colin McGinn with neglect of scientific studies in his recent book, *The Meaning of Disgust* (2011). In their stead, McGinn makes use of the early theory of disgust articulated by the Hungarian philosopher Aurel Kolnai. This essay will consider the ways in which an approach like Kolnai's converges with and diverges from scientific findings.

Kolnai belongs to the school of phenomenology founded by Husserl, and he followed Husserl and Scheler in the view that human emotions are axiologically sensitive, that is, that they serve to register the value-properties of objects and events and are to that extent modes of perception. The writings of the most talented followers of this phenomenological method, while they employ a terminology that is alien to many contemporary analytic philosophers, are in fact marked by a high degree of precision in their attempts to describe the structures of experience. In his long essay "Der Ekel" from 1929, Kolnai locates the emotion of disgust in the family of deeply rooted human dispositions for protective recoil, thereby carefully distinguishing a number of different affective responses that are often run together in experience, such as fear, hatred, and disgust. His analysis is not experimental, and because it is grounded in introspection, it may run the risk of idiosyncrasy. On the other hand, it counteracts tendencies to confuse disgust with other sorts of disapproval, which are a potential problem with the quick-response experimental surveys that are the bread and butter of psychological studies.

Writing in the 1920s, with little science or philosophy on the subject to consult, Kolnai arrived at a very similar catalog of disgust elicitors as was later assembled by scientists such as Rozin, Fallon, McClary, and Curtis mentioned by Strohminger (2014). Kolnai articulates two categories of disgust that he labels "material" and "moral." Under the objects of material disgust he lists the items that are now virtually standard entries on inventories of disgusting objects: putrefying organic matter, bodily wastes and secretions, sticky contaminants, vermin. He also notes the strongly sensory character of this emotion, whose objects are stinking, slimy, sticky, squirmy, pullulating. They look appalling, and the idea of putting them in one's mouth is gaggingly revolting.

In the category he posits as moral disgust, Kolnai places reactions to objects that are "experienced as a 'soiling,' a 'sully' of life and its values," phenomena which are not in themselves physically disgusting but which awaken associations of physically disgusting acts (Kolnai, 2004, p. 66). At the same time, he

cautions the reader that his remarks on such examples are based on evidence that is less than secure (2004, p. 63). And indeed suspicions justly arise as to whether the putative elicitors of moral disgust (Kolnai's candidates include drunkenness, unclean breath, excessive vitality, mechanical and superficial sexuality) form a coherent grouping analogous to those classed under material disgust. Indeed, current theorists are divided as to whether these arouse true disgust at all, or whether the corresponding reactions are better understood as metaphorical ways to express profound disapproval. McGinn is rather inclined to the latter view for most cases of supposedly moral disgust (2011, p. 37).

As concerns material disgust, while scientific and philosophical studies of emotion arrive at similar lists of standard elicitors, the speculations they contain about the nature of the experience of disgust are more divergent. Most scientists view disgust in a homogenizing fashion as a strongly reactive aversion. Both Kolnai (2004) and McGinn (2011) recognize that there is a peculiar phenomenon of disgust distinct from that of other defense reactions, for the phenomenology of disgust seems to involve—in some persons at least—a sort of attraction to the disgusting object. Kolnai refers to a certain "macabre allure" (2004, p. 42) that is built in to that moment of disgust when we both recoil and marvel at the revolting object before us. This raises the question whether there is some cognitive element involved in and characteristic of the experience of disgust, some concept that this emotion consistently brings to mind and is tied to its affective component. McGinn defends a positive answer to this question, holding that disgust means death, or rather *life-in-death*, summoning a vivid awareness of the fact that organic matter becomes the food for generations of bacteria and worms. Kolnai somewhat similarly describes disgust as "pregnant with death" in virtue of the fact that the disgusting object manifests its own impending corruption (2004, pp. 74–75).

It would be an exaggeration, to say the least, to argue that an existential confrontation with death is involved every time one opens a garbage can or swallows a bad clam. Strohminger (2014) is correct to point out the error of seeking a theory of disgust in terms of a single unified dimension of meaning along these lines. At the same time, it would be a mistake to allow an embrace of science to ignore those features of the experience of disgust that are disclosed by means of a phenomenological, descriptive approach, including its characteristic "feel" and the shifts of awareness and understanding that disgust occasions. Not only do these features have equal importance to those addressed by current science, they are also the aspects of emotions that fill our conscious awareness, and as such lend significance and value to our lives.

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## Comment: Interdiscipline

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### Abstract

*The Meaning of Disgust* (McGinn, 2011) is a vivid example of how interdisciplinary research can go horribly wrong. Strohminger's (2014) criticisms serve as a good starting point to discuss some of the issues that need to be addressed by the growing number of researchers who choose to conduct interdisciplinary research in philosophy and psychology. I argue that McGinn's approach to science in *The Meaning of Disgust* serves as a useful contrast to the ideal, and that it illustrates the most important virtue necessary for being a good interdisciplinarian: intellectual humility.

### Keywords

disgust, interdisciplinary, McGinn

There are two points I wish to make about Strohminger's (2014) critique of *The Meaning of Disgust* (McGinn, 2011) which I think are completely obvious: it is hilarious, and it is right. While reasonable people may disagree about the first point, the second point seems pretty uncontroversial. I do not mean that Strohminger is obviously right about the empirical facts of disgust. Even though I agree with her, the science has by no means been fully worked out. What I mean is that it is obviously right to focus the critique on the most problematic aspect of McGinn's book: the glaring lack of empirical evidence in a book that purports to tackle an empirical question. In an era where a 2-second online search (especially on a topic as popular as disgust) can provide any mildly curious person with access to hundreds of full-text, peer-reviewed scientific articles, it seems unlikely that McGinn's omission of this body of research could have been unintentional. What goal would it serve to purposely ignore so much relevant research?

A hint can be found in McGinn's recent piece in the *New York Times* ("Philosophy by Another Name"; McGinn, 2012). Here McGinn laments that philosophy has suffered in the public eye, and is far less popular with the media than the scientific disciplines. But the strategy he suggests for improving this state of affairs is not what one might expect, such as pointing out various good aspects of philosophy (e.g., the rigorous thinking that comes with philosophical training, or the virtue of living a more reflective life). Rather, his proposed solution is to convince others that philosophy actually *is* a science, and that it has

been so all along. If successful, the result would be that "we [philosophers] can expect to be treated like scientists" (2012).

How does McGinn justify counting philosophy among the scientific disciplines? Aside from a defense that philosophy meets the dictionary definition of science, he concocts a list of features that seem common to most scientific disciplines, and argues that philosophy clearly fits the bill as it also contains most of these features. The features he points to are: "That the subject is systematic, rigorous, replete with technical vocabulary, often in conflict with common sense, capable of refutation, produces hypotheses, uses symbolic notation, is about the natural world, is institutionalized, peer-reviewed, tenure-granting, etc." (2012).

The most glaring omission from this list is what many would consider to be the single most important feature of a science—that of empirical observation. McGinn does not find this too problematic, and assures us that philosophy is a science "even if not one that makes empirical observations or uses much mathematics" (2012). No need for those pesky data. Real science is speaking in jargon, working for tenure, and using funny symbols when you write (there is no mention of lab coats, but I am sure that they are included in the "etc."). Compare McGinn's characterization of science to the definition offered by the physicist Richard Feynman (from his series of Cornell University Messenger Lectures delivered in 1962; <http://research.microsoft.com/apps/tools/tuva/#>). Science, for Feynman, requires you to:

Compare [your hypothesis] directly with observation to see if it works. If it disagrees with experiment, *it's wrong*. In that simple statement is the key to science. It doesn't make a difference how beautiful your guess is, it doesn't make a difference how smart you are if you made the guess, or what his name is ... *If it disagrees with experiment, it's wrong*. That's all there is to it.

The conspicuous absence of data in *The Meaning of Disgust* suggests to me that McGinn may have viewed this book project as the perfect opportunity to test his novel, data-free method of doing science; to demonstrate that even when armed only with a sharp mind and a comfortable armchair, philosophers are capable of making bona fide scientific contributions. But while McGinn is a smart author who makes some beautiful guesses, as Strohminger (2014) points out, the data often get in his way.

Why bother with what McGinn thinks about science in the first place? There are better ways for researchers to spend their time than to complain about a philosopher for showing insensitivity to empirical data, no matter how annoying it might be. But the problem is not limited to *The Meaning of Disgust*, or to McGinn. Nor is it limited to philosophers who write about science. There are plenty of examples of psychologists who are guilty of a similar infraction: addressing a traditional philosophical question with empirical methods that are ill-suited to the task, ignoring dozens, if not hundreds of papers in the philosophical literature on the topic, and making broad, erroneous claims about the contribution of empirical data to the philosophical question at hand.

The value in the exchange between Strohminger (2014) and McGinn (2011), I believe, is that it provides a good opportunity to discuss the nature of the relationship between philosophy and psychology, and to highlight some of the deep problems with engaging in interdisciplinary work. More than ever, psychologists have become actively interested and engaged in philosophical topics (such as free will, consciousness, identity, and moral responsibility). Likewise, philosophers have started to borrow the tools and methods of the behavioral sciences to investigate philosophical intuitions, and a growing number of them regularly design studies and collect experimental data. This cross-pollination of ideas can be a very good thing, and it has yielded a great deal of interesting work.

But in practice, things can get messy and embarrassing. Philosophers interested in empirical questions about the mind, but who have not themselves been trained in experimental methods or statistical analyses, are more likely to ignore or misinterpret data, to selectively report results that support their argument, and when collecting data themselves to make basic errors in experimental design, implementation, and analysis. The philosophical community may not notice this sort of

sloppiness nearly as quickly as they would notice errors in conceptual analysis. Likewise, psychologists who choose to investigate philosophical topics using empirical methods seem more likely to make sloppy, basic conceptual errors, such as failing to identify relevant distinctions among related concepts. Many psychologists do not even understand that a large chunk of questions in philosophy are not empirical ones to begin with, and that even the cleverest of methodologies or unlimited statistical power cannot address them properly.

The immediate upshot of an increase in interdisciplinarity is that there seem to be more cases of bad psychology being done by philosophers and bad philosophy being done by psychologists. The only solution, I think, is to adopt intellectual humility and actively encourage it in our colleagues and students. The people whom I believe are doing the best work at the intersection of philosophy and psychology are those who have taken steps that required them to swallow their pride and admit to their ignorance about matters beyond their own field, such as getting formal outside training, actively seeking feedback and criticism from colleagues in the other discipline, and forming collaborations with researchers who know more than they do about the topic. Adopting these sorts of strategies would, I believe, put pressure on scholars to be a bit more responsible in their attempts at interdisciplinary work.

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## Comment: Scholarly Disgust and Related Mysteries

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## Abstract

Strohminger (2014) is revolted by McGinn's (2011) book, *The Meaning of Disgust*. We argue that her reaction of repugnance highlights one of the greatest mysteries in the psychology of disgust: this emotion is at times elicited by abstract ideological concerns rather than physical threats of infection or

contamination. Here we describe the theoretical challenge of accounting for nonpathogenic disgust elicitors, which include spiritual defilement, violations of the "natural order," and, apparently, McGinn's latest publication.

## Keywords

disgust, emotion, morality

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Strohminger (2014) is revolted by McGinn's (2011) book, *The Meaning of Disgust*. Her commentary leads us to believe that she read his book with a wrinkled nose and flashes of nausea. But McGinn's book posed no threat of infection, and flipping through its pages presumably left no foul odors in the air.

Strohminger's (2014) commentary is unforgiving, especially in its attack of McGinn's supposedly "mysterian" attitude toward disgust. To counter his view that disgust is a befuddling phenomenon, she points to the orthodox belief that disgust evolved as a mechanism for pathogen avoidance. This idea has been embraced by evolutionary theorists (e.g., Curtis & Biran, 2001; Oaten, Stevenson, & Case, 2009; Rozin, Haidt, & McCauley, 2008; Schaller, 2011) and is generally unquestioned. Yet, it is not clear to us that disgust has such a simple adaptive explanation (Rottman, in press).

Disgust, as McGinn (2011) notes, is a complex phenomenon associated with numerous elicitors that vary widely across time and space. People around the world experience disgust in response not only to pathogenic substances like feces and rotting flesh but also to norm violations and sacrilegious actions that are unrelated to infectious disease. Although some researchers have argued that disgusting moral transgressions tend to be indicative of potential bodily contamination (Inbar & Pizarro, in press), others posit a much broader array of sociomoral violations that are generally unrelated to pathogens or parasites (Chapman & Anderson, 2013). For example, disgust is evoked by unfair actions as well as ideational or spiritual—rather than bodily—impurities (e.g., Cannon, Schnall, & White, 2011). In our own research, we have found that people judge suicide to be immoral and disgusting to the extent that they believe suicide taints the purity of the soul (Rottman, Kelemen, & Young, 2014). Also on the list of nonbodily disgust elicitors are hypocrisy, various forms of social deviance, environmental degradation, the sacred texts of other religions, and being French-Canadian, to name a few (e.g., Haidt, Rozin, McCauley, & Imada, 1997; Hodson & Costello, 2007; Ritter & Preston, 2011).

It is difficult to imagine how such nonbodily disgust elicitors can be accommodated by an adaptive account narrowly focused on the avoidance of pathogens; disgust, it seems, would be better conceptualized as a response not only to bodily violations (Bloom, 2004; Russell & Giner-Sorolla, 2013) but also to tarnished souls. On several accounts, it is proposed that disgust has been exapted or culturally extended from its initial manifestation as a food rejection response (Kelly, 2011; Rozin, Haidt, & Fincher, 2009; Rozin et al., 2008). However, there are currently no strong reasons—either a priori or empirical—to assume this historical trajectory for disgust or even to accept that disgust is a unitary adaptation rather than comprising multiple distinct functional systems (Tybur, Lieberman, Kurzban, & DeScioli,

2013). Scholars must account for the apparent human uniqueness of this emotion and rule out the possibility that it evolved as a mechanism for social regulation independent of disease avoidance.

Ultimately, we share McGinn's caricatured puzzlement and agree that a coherent understanding of disgust remains enigmatic. However, we are excited about the upsurge of research that is starting to shine a light on the dank underbelly of disgust. It is likely that this emotion will not remain mysterious for long.

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## Comment: Strohminger–McGinn: Deconstructing the Moral Amplification Effect

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### Abstract

I use a number of McGinn's (2011) ideas to identify likely confounds in the induction of incidental disgust as the basis of the moral amplification effect.

### Keywords

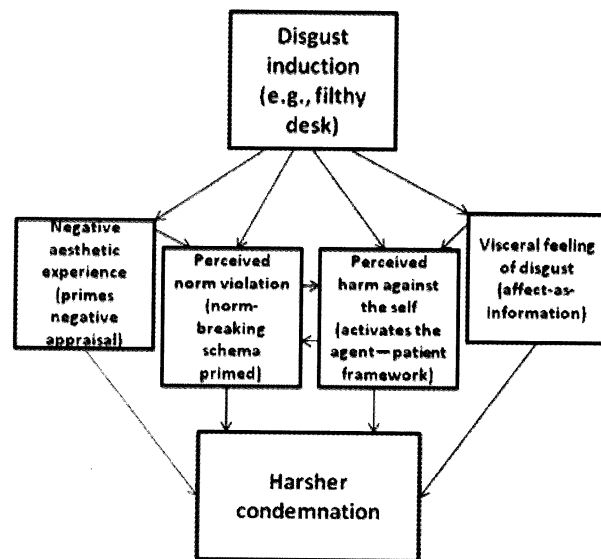
aesthetic, amplification, disgust, McGinn, moral

In a relatively early review of *The Meaning of Disgust* (McGinn, 2011), Ian Marcus Corbin described it as “twenty-five or so sharp, illuminating pages” scattered among 200 pages of “bizarre, tossed-off piffle” (Corbin, 2012). Strohminger (2014) does a smashing good job of eviscerating the piffle. In what follows, I will attempt to make use of some of the twenty-five-or-so pages that illuminate.

McGinn (2011) is at some of his most illuminating when he speaks about disgust's intertwining realities of the aesthetic and the moral (pp. 34–35): the same stimulus configuration may engender both the “aesthetic” recoil of disgust and (independently) an “attitude” of moral disapprobation. McGinn's main concern here lies with acts of “sexual deviance,” but he would be unlikely to deny that the same “mixed” phenomenology marks more routine lapses of etiquette and “derelictions of duty,” for example, breaking wind at the dining table (see p. 207), or failing to clean up (p. 222).

These are not the cases that McGinn is most intrigued by, but these are the ones that make some of his points surprisingly relevant to the burgeoning literature on the moral consequences of *incidental disgust* (ID). Its central claim is that a “morally irrelevant” bout of ID (means of induction ranging from a novelty fart spray to a foul-tasting beverage) can (a) amplify the severity of extant moral disapproval (call it the *moral amplification effect* [MAE]) and (b) even engender one from scratch (Pizarro, Inbar, & Helion, 2011). McGinn (2011, pp. 34–35) comes close to offering direct evidence against the latter, but his musings are also relevant for deconstructing the former.

Consider, again, the plight of some hapless sophomore countenancing the onslaught of a novelty fart spray. Her ordeal is a veritable montage of the aesthetic and the moral. The aesthetic/



**Figure 1.** Tentative process model of the moral amplification effect (see Gray, Young, & Waytz, 2012, for the discussion of the agent–patient framework).

visceral side is plain enough. The “moral”/normative side has (in principle) two separable components (see Figure 1), the observation that a social norm has been breached (someone did not hold in!) and a related (but separable) perception that one has been made to “suffer” a result of someone else’s actions (see McGinn, 2011, p. 202, and forward on the general obligation not to disgust and p. 7 on disgust as a hurt).

It strikes me as altogether plausible that each of the aforementioned elements can independently generate a harsher normative outlook (be it a lab or “in the wild”), with the feeling *per se* being, possibly, the least generative of all.

Backing this conjecture are several recent studies configured to keep the normative elements at bay (e.g., Case, Oaten, & Stevenson, 2012; Royzman, Baron, & Goodwin, 2014; see also David & Olatunji, 2011). Collectively, they found no trace of MAE, even while using highly potent, face-valid disgust elicitors



(ranging from standardized images [Case et al., 2012] to a medical poop chart [Royzman et al., 2014]) and all reporting successful manipulation checks. There are also companion results (e.g., Schnall, Haidt, Clore, & Jordan, 2008, Study 2): disgust inductions (e.g., being assigned to a filthy work environment) yielding MAE in the absence of any discernable increase in the disgust itself. Taken together, these findings indicate a double dissociation between disgust and amplification, making it almost certain that MAE will ultimately turn out to be far less about “the power of feeling” and far more about the power of subtle normative primes.

And there is one more ultimate worry that McGinn would be exceedingly likely to endorse: even assuming that votaries of MAE were triumphantly successful in tickling their subjects’ affective sensibilities in some moral load-free manner or went as far as to imbue them (say, via pharmacologically induced nausea<sup>1</sup>) with visceral disgust directly, the final theoretical payoff would be very modest indeed, signifying nothing as dramatic as the triumph of feeling over reason, but only that (reasonably enough) people use affect as one of many inputs to a normative judgment process<sup>2</sup>.

## Notes

- 1 This proposal makes more sense for those willing to embrace, as their theoretical definition of disgust, the view that it is, fundamentally, *nausea with intentional content*, that is, nausea directed at something or someone beyond itself.

- 2 An intuitive case in point is jealousy: you may feel jealous when observing your paramour in a romantically tinged interaction with another; and perceiving yourself jealous may lead you to reason that you care for her romantically (more than previously supposed). Would such an inference be antirationalist? Hardly.

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# Author Reply: Grasping the Nebula: Inelegant Theories for Messy Phenomena

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## Abstract

Grand unified theories of messy topics like emotion tend to fail at capturing all the important dimensions of their subject. Why is this? I take on this question while responding to commentaries.

## Keywords

disgust, philosophy of science, psychological nebulae

Often in science we are called upon to make grand pronouncements about our objects of study. What is the nature of this phenomenon to which we have become so attached, which we have labored over, and tended to in loving detail?

Standard practice is to put forth a grand unified theory, or GUT. A GUT hews to the scientific ideal of parsimony by describing a phenomenon in terms of necessary and sufficient conditions, often with a single rule. When a grand unified theory fails, it is assumed that we have simply articulated the wrong one. But what if our failure is not imperfect knowledge of our pet phenomenon, but a misapprehension that a good theory will be able to shoehorn everything into a fundamental law?

An impediment to would-be grand unified theories is that many natural phenomena—particularly those within the psychological sciences—do not have well-defined boundaries or a clear center of gravity. Call these psychological nebulae: rather than rigid, self-contained modules, they are an indistinct cluster

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of partially overlapping clouds, with foggy tendrils expanding into many domains.<sup>1</sup> Nebulae are ill-suited to apprehension by grand unified theories. Such one-dimensional models leave off so much explanatory desiderata that they are doomed to be completely, comedically inadequate.<sup>2</sup>

The fetishization of parsimony means that unwieldy theories are often dismissed on these grounds alone. But it is the theories which are unafraid of chaos that are best able to handle nebulae.<sup>3</sup> Messy theories should not only be tolerant of penumbral fuzz around the edges, but receptive to the possibility that the nebula contains no central, essential core.<sup>4</sup> No doubt there is something less satisfying about settling for inelegance, but the best theories won't always feel right. Elegance is not a suitable heuristic for veracity.<sup>5</sup> Good theory-making retains all important details, no matter how awkwardly they cleave to the rest of the phenomenon.<sup>6</sup> This process is still capable, though, of judiciously slicing away the flimsiest proposals.<sup>7</sup> Good theories are just parsimonious enough.

Since nebulae crop up across multiple disciplines, they benefit from scholastic opportunism. Meaningful contributions can be made by conceptual analysis, informal observation, introspection, and phenomenological methods more generally. But it is crucial to separate what this sort of evidence can provide and what it cannot. The chief value of these perspectives is idea generation, and a check against the ever-narrowing focus encouraged by the grand unified theory tradition.<sup>8</sup> Phenomenology can resonate with us, it can lend a patina of understanding, but it is not equivalent to an empirical claim.<sup>9</sup> If our goal is to get at truth and not just truthiness, we must defer to data.<sup>10</sup>

Under ideal circumstances, a theory carves nature at its joints. But this is only possible when nature is jointed. In selecting what type of theory to build, we should consider the properties of the phenomenon we are trying to grasp. Complex phenomena require more convoluted, nuanced explanations than have traditionally been marshaled for this task. Given their heterogeneity and unboundedness, it is possible that some nebulae can never be fully captured by any theory, no matter how inclusive. The goal of nebular theories may be less about definitive truths than postulating relationships between entangled systems and creating novel testable hypotheses. Their virtue lies not in their finality, but their ability to slouch us towards an incrementally better understanding of a sprawling, deeply intricate spectacle.

## Notes

- 1 The full list of psychological nebulae is likely quite extensive, but disgust is a very good candidate. Other nominees include humor (Strohming, 2011) and morality (Koleva & Haidt, 2012; Sinnott-Armstrong, 2012).
- 2 Variants on the death-in-life theory (Kolnai, 1929/2004; McGinn, 2011) and Douglas's (1966/2003) theory that disgust is simply "matter out of place" are examples of grand unified theories that leave most of the puzzle of their subject unaccounted for.
- 3 Given a paragraph, one can construct a tidy story about disgust (viz. Strohming, 2014), but most modern treatments make some concession to inelegance. Rozin, Haidt, and McCauley (2010) hypothesize that physical disgust emerged out of gustation-based toxin avoidance, which set in motion an ever-fragmenting disgust typology. Tybur, Lieberman, Kurzban, and DeScioli (2013) suggest that disgust combines three originally independent mechanisms: pathogen avoidance (physical disgust), mate selection (sexual disgust), and social transgression aversion (moral disgust). Kelly (2011) proposes that even physical disgust does not bear a single provenance, but represents the entanglement of poison and microbe avoidance over time.
- 4 Even when they embrace complexity, many scholars attempt to pinpoint the nucleus around which disgust ultimately revolves. Disgust's essence has variously been formulated as oral rejection (Rozin et al., 2010), contamination (Angyal, 1941), disease avoidance (Curtis, De Barra, & Auger, 2011), and death (Herz, 2014). But debating the true "worm at the core" of disgust is a fruitless exercise, as there is little to suggest that disgust has such a core. Compare this approach to theories that identify multiple functions for disgust without placing the primacy locus within any given domain (Kelly, 2011; Tybur et al., 2013).
- 5 In judging beauty and in assessing truth, humans exhibit an inherent preference for simplicity (Reber, Schwarz, & Winkielman, 2004). Perhaps the insistence within academic circles that our theories be plain, crisp, and intuitive is a function of this cognitive bias for fluency.
- 6 McGinn (2011) believes that disgust originated during a dubious stage of human evolution where eating and making love to corpses was ubiquitous, an epoch that Clark (2014) aptly dubs the Caligulocene. Yet it is plausible that disgust moonlights as a watchdog against surfeits of appetite and overindulgence. This observation appears repeatedly in the literature (Kolnai, 1929/2004; Korsmeyer, 2011; Miller, 1997) but has been left out of scientific accounts of disgust, and remains untested (cf. Strohming, in press). Likewise, the predominant view in psychology is that disgust can only engender aversion, rejection, and avoidance (e.g., Frijda, 1986; Horberg, Oveis, & Keltner, 2011; Lazarus, 1991). This has edged out discussions that disgust could have a more nuanced behavioral repertoire, including null responses (Royzman, 2014) as well as positive, approach-related responses (Korsmeyer, 2011; Strohming, 2013). Characterizing disgust's influence in terms of a single unqualified gist, while capturing much of the variance, has meant glossing over the many interesting exceptions.
- 7 How moral disgust relates to the broader story of disgust has been a topic of active and unresolved debate for many years (see, for instance, Kelly, 2011; Kolnai, 1929/2004; Miller, 1997; Nussbaum, 2006; Pizarro, Inbar, & Helion, 2011; Rozin, Haidt, & Fincher, 2004; Tybur et al., 2013). Most theories posit that physical disgust emerged first, with the sociomoral forms piggybacking off of it in some way. Rottman and Young (2014) make the novel proposal that moral disgust could be independent from, perhaps even antecedent to, physical disgust. Their argument relies on the putative human uniqueness of disgust, which obscures our ability to trace the emotion's phylogenetic trajectory. The problem with this view is disgust has many observable precursors in animals, and these precursors are more clearly aligned with toxin avoidance than the upholding of moral standards. Mammals and neonates respond to bitter and sour tastes—harbingers of poisonous and spoiled food—with the canonical disgust "gape face": eye squinting, nose wrinkling, tongue protrusion (Berridge, 2000), and spitting (Berridge, 2000). Omnivores come equipped with domain-specific learning mechanisms for establishing which foods are dangerous, including a sensitive period for food preference acquisition early in life (Cashdan, 1994; Rozin, 1976) and easily conditioned aversion towards the food consumed before experiencing nausea (Garcia, Kimeldorf, & Koelling, 1955). Animals avoid environments and conspecifics exhibiting infectiousness or high pathogen load (Hart, 1990; Kavaliers, Choleris, & Pfaff, 2005; Kiesecker, Skelly, Beard, & Preisser, 1999; Loehle, 1995). Even roundworms will swim away from the chemicals given off by parasites (Schulenburg & Muller, 2004). There is, furthermore, a direct bridge from physical

disgust to its interpersonal manifestations. Xenophobia and outgroup bias is higher in environments with historically high pathogen loads, presumably because outsiders are more likely to harbor new diseases (Schaller & Park, 2011). Mistrust of outsiders is higher in individuals who perceive themselves to be vulnerable to disease, and experimentally manipulating disgust increases bias towards outgroups (Duncan, Schaller, & Park, 2009; Navarrete & Fessler, 2006). The stigmatization of certain groups—the aged, the sick, the deformed—appears to be function of disgust at those who show signs of communicable disease (Park, Schaller, & Crandall, 2007). Social norms and good manners frequently revolve around personal hygiene, and violations of these norms rank high on lists of reported disgust elicitors (Curtis & Biran, 2001; Nabi, 2002). Sociomoral disgust is related to physical disgust at the metaphorical level as well, since unscrupulous behavior can spread via interpersonal contact (Gino, Ayal, & Ariely, 2009; Paternoster, McGloin, Nguyen, & Thomas, 2013; Plakias, 2012). Moral disgust bears the imprint of physical disgust, not the other way around.

- 8 Korsmeyer and Smith (2014) claim that scientific theories of disgust have carved too much from their subject, and suggest supplementation with a more phenomenological methodology. While descriptive approaches likely would bring new insights to the field, it is not the case that psychological testing is too blunt an instrument to make nuanced distinctions between disgust and related emotions, such as contempt and shame. Psychological research has provided us with remarkably fine-grained and systematic taxonomies of the emotional landscape (e.g., Fontaine, Scherer, Roesch, & Ellsworth, 2007). The problem with the scientific study of disgust isn't that the methods are weak (at least when compared to armchair pontification), it's the tendency to draw too cramped a box around its subject.
- 9 According to the phenomenological approach, the meaning of disgust lies partly in what *feels* true about it (Korsmeyer & Smith, 2014). This veneration of intuition is not all that dissimilar from science's bias towards elegant theories. But the impressionistic feeling of an emotion's "meaning" is only that, a feeling. It is ersatz knowledge. There will always be something dry and insipid about serving up a juicy emotion on an expository platter, but at some point we must give up on gut feelings in order to know emotions.
- 10 Pizarro (2014) points out that data is the foundation upon which science is built, and that McGinn ignores it at his own peril. Data do more than confirm the suspicions of careful conceptual analysis (cf. Korsmeyer & Smith, 2014), they allow us to distinguish among equally plausible hypotheses, and surprise us with answers no one saw coming. The long-popular idea that disgust represents a form of existential angst seemed self-evident to those examining its typical elicitors (maggots, decay, bodily excretions, and other trappings of the mortal coil). But this has been supplanted by studies showing that these elicitors more faithfully represent disease vectors (Curtis & Biran, 2001), and indeed terror management theory fails to predict disgust patterns (Fessler & Navarrete, 2005). Prescriptivism is also irrelevant in the formulation of empirically based theories. Herz (2014) suggests we reject the pathogen-based theory of disgust because of its potentially insidious political implications. But this has zero bearing on its truth value, and is a manifestly unscientific attitude, which risks falling into the same antisocialism Herz accuses McGinn of espousing.

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