
Cast in A Bad Light or Reflected in a Dark Mirror?
Cognitive Science and the Projecting Mind

By Daniel Kelly

I. Introduction

Some of the most recognizable questions of philosophy are also some of the grandest: Is there a god? What is the nature of consciousness, minds, and selves? How can I know I exist, and what makes me who I am? Do we have free will, or are we merely complicated neurobiomechanical machines whose operations are determined by the laws of nature? What is the nature of morality, and are there a universal set of moral principles that applies to everyone, or is morality relative, a matter of variable emotion and attitude? Disgust can serve as a lens through which to examine many of these questions, often usefully cutting them down to a more tractable size first.¹ Here I’ll use the emotion as a way to address another cluster of the most fundamental and perennial questions of philosophy, these standing at the heart of epistemology and metaphysics: Is the world as we perceive it to be? Can we come to know its ultimate nature, and if so, how? Are minds and the world ‘external’ to them made of the same basic stuff? How and when does the intuitive distinction between reality and mere appearance hold up to scrutiny? How much, if any, of what we perceive and experience is objective and mind independent? How much, if any, of what we perceive and experience is subjective, added to experience, or inserted, altered, or otherwise enhanced by our perceptual apparatus? How much of what seems to us to be out there in the world is really just part of our minds? For instance, on which side of this subjective/objective divide² do colors fall? Is causation a relation between the objects and events we perceive, or is it merely part of our interpretation of those objects and events? Are moral properties like goodness or wrongness inherent in actions and practices, or are they just covertly ascribed to actions and practices when our minds respond to them? Is anything really truly objectively disgusting?

¹ I’ve tried my hand at a couple; see Kelly 2011 for an overview; Kelly 2013, and Kelly and Morar 2014 for discussion of the different kinds of relationships between disgust and morality; and Kelly and Morar forthcoming for a discussion that connects disgust to identity by way of food.
² See Nagel 1979 for an intuitive but useful philosophic discussion of the relations between the subjective and objective points of view.
My ambitions here are not as grand as all of these questions. In what follows I aim only flesh out one kind of strategy, often called projectivism, that has inspired answers to some of them, and show how it can be understood in the vernacular of contemporary cognitive science. The combination of the emotion of disgust and the property of disgustingness make an ideal case study to explore the prospects of the projectivist strategy because, as many have noticed, the two seem particularly well matched to each other. However, some philosophers have doubted the coherence of the strategy itself, suggesting that appeals to projectivism are confused or self-undermining. In light of this, the main overall line of reasoning I offer is conditional: if projectivism cannot be formulated and made plausible for disgust and disgustingness, the skeptics are probably right and the strategy is hopeless. However, if a coherent projectivist account of disgust and disgustingness is in the offing, as I will argue it is, that account can help pinpoint those features of our minds that are crucial to it, and so be useful in identifying other patches of reality that might be amenable to a projectivist style treatment, and under what conditions.

II. The Basic Idea of Projectivism

The idea that the mind actively projects something onto the external world, rather than passively reflecting everything it finds there, has a long and venerable history in philosophy. Intuitively speaking, projectivism is the idea that in some cases, what we unreflectively take to be features of the world are actually features of our own minds, projected outward onto the world. For example, a projectivist about beauty would claim that the legendary loveliness of Helen of Troy was in the eyes of her many adoring beholders, rather than Helen herself. By analogy, imagine an otherwise blankly white wall onto which a film machine is projecting a series of colored images. One might make the mistake of thinking the colors and images were “on” or “part of” the wall, but in an important sense this would be a mistake. The source of those colored images is the film machine, which is imbuing the wall with them, and if the machine is turned off or taken away, so too are the colors and images. This metaphor of mind-as-lamp is often opposed to the metaphor of mind-as-mirror. The image of a mirror captures the view that the mind merely represents things, passively reflecting those features of the external world it is held up to, while the imagery favored by projectivists likens the mind to a lamp that projects its own light outward, and thus adding to the world it is illuminating. This later image is supposed to capture the thought that our minds are a source similar to the way the film machine is, and that in perceiving and thinking about the world, our minds slyly add something to it that

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3 Indeed, philosophers who find little else on which to agree seem to be able to agree on this. For example, John McDowell (1985, 1987) remarks on a small and rare bit of common ground with J.L. Mackie (1977), claiming that it would be a “confused notion” to think that “disgustfulness is a property some things have intrinsically or absolutely, independently of their relations to us”. He maintains this is the case despite the fact that the phenomenology associated with disgust “presents itself as a matter of sensitivity to aspects of the world”.

4 See, for instance, Rorty 1979 and Abrams 1971. The title of this paper is an unabashedly enthusiastic nod to those two great books.
would not be there otherwise. At the personal level, however, we are apt to mistake those added features, elements of our own perception and thought, for features of the world onto which they are being projected.

As intuitively compelling as the imagery may be, it is obviously still quite vague – and I suspect vagueness fuels the allure. As is often the case with philosophic doctrines though, the intuitions and imagery associated with projectivism are easier to supply than is a detailed articulation of the idea. While that idea has won eminent historical and contemporary supporters, others remain unconvinced that it is anything other than an empty metaphor at best, and at worst a source of persistent confusion. Despite these doubts, I continue to find projectivism an attractive option, a useful way of “locating” problematic properties in nature and reconciling a scientific picture of the world with our lived experience of it.\(^5\)

However, I also believe that the strategy will only be useful locally, in certain cases, and thus my argument will only apply to those. In contrast to full-fledged Berkeleyan idealism or contemporary physicalism, projectivism is not usually advanced as a global doctrine about the fundamental nature of reality \textit{en toto}. Rather, projectivist-style accounts of the sort I consider are typically given for a particular target domain, some circumscribed phenomenon or set of appearances that are being contrasted with more putatively objective or mind-independent features of the world. The projectivist is suggesting, only about those former features, that they are more rooted in the functioning of our minds than in the more objective features of the world that our minds are in contact with. Man is not the measure of \textit{all} things, claims the projectivist, but only those phenomena in the target domain that are being separated out and given a projectivist-style treatment.\(^6\)

Historically, the philosopher most commonly associated with the imagery of projectivism is David Hume, whose thoroughgoing empiricism and resulting skepticism lead him to endorse projectivist accounts of a wide range of phenomena, from color to causation to aesthetic and moral value. Some of Hume’s most memorable turns of phrase are expressions of his projectivist positions on such issues. He makes the general observation that the mind has a “propensity to spread itself on external objects” (Hume 1978, 1.3.14), and speaks of the mind “gilding or staining...natural objects with colors, borrowed from internal sentiment” (Hume 1975, p. 294). Neither Hume’s considerable stature nor eloquent endorsement of multiple projectivist theses can completely account for the continuing appeal of the idea, though. Rather, projectivism has remained philosophically attractive because it seems to offer a way of locating certain properties in the framework of

\(^5\) For recent prominent examples of philosophers framing the types of grand questions we started with in terms of “location problems,” see (Chalmers 2003, page 1). “[T]he central problem is that locating mind with respect to the physical world”, or Blackburn agreeing with Jackson in claiming “[W]here there is something that threatens to transcend the physical or the natural, the way to demystify it is to “locate” it in the natural order.” Blackburn goes on that “[M]any writers would agree with Jackson that a fundamental task of metaphysics is what he calls the location problem: showing how to locate the mystifying area in the natural world” (Blackburn 2000, page 119-20).

\(^6\) For more global application of some of the ideas in the projectivist arsenal, see Rorty 1971 and Price 2011. I will confine my discussion here to local or selective applications of the projectivist strategy, and have defended a similarly selective approach to bringing empirical considerations to bear on issues in moral theory in Kelly 2013.
understanding the natural world provided by modern science. Since Hume’s day, the continued success and resulting epistemic authority earned by the sciences have seemed to some to legitimate a picture of the world that Hilary Putnam (1990, 1999) has called the “World Machine.” And with the rise of this picture, it has been increasingly difficult to see where properties such as color or beauty might fit into the causal order of the external world, or where moral values might be located in nature – at least with respect to the “World Machine” vision of nature that science seems to deliver.

While Hume might be the most famous proponent of the tradition, others have more recently developed the strategy to address this difficulty. Twentieth century analytic philosophy was dominated by the so-called linguistic turn, and projectivist ideas became associated and sometimes deeply intertwined with semantic theses about the meanings of individual terms and the logic and function of the truth predicate in assessing sentences. Work in this area has become extremely sophisticated and at times dauntingly technical, but a brief digression will help illustrate the principal differences between projectivism about properties, on the one hand, and emotivism and expressivism views about meanings or concepts that have an undeniable projectivist flavor to them, on the other.

As many of the traditional questions of philosophy were reframed as questions about language, many of the ideas at the heart of the projectivist tradition were also given linguistic formulations. These proposals themselves can often be usefully separated out into a semantic component and a projectivist component. An early attempt to preserve Hume’s insights about a projecting mind was the semantic thesis of emotivism (see Ayer 1936, Stevenson 1937). Very roughly speaking, an emotivist semantics denies that the claims falling within its domain are attempts to state facts or describe states of affairs, such that they can do so accurately or inaccurately, and consequently also denies that they are the sorts of claims that admit of being true or false. Rather, despite their (sometimes misleading) surface syntax, claims that are properly understood along emotivist lines merely serve to express the sentiments or emotions of the speaker. In expressing a sentiment, a speaker is not asserting its existence (“I am experiencing happiness,” or “Karl is angry”), ascribing some other property to it (“My happiness is boundless,” or “Karl’s anger is due to the traffic jam”), or making any other type of truth apt claim. Rather, the speaker is simply emoting, albeit verbally. Authors like Stevenson also sought to extend emotivist semantics from obviously expressive turns of phrase such as “ouch!” or “hooray!” to claims about value or the moral permissibility of various acts and social practices. On this account, a claim like “lying is morally wrong” does not, truly or falsely, predicate any property (or whatever sort, projected, relational, objective, or otherwise) of the practice of lying. Instead, it serves to express the speaker’s attitude of disapprobation towards the practice. In caricature, it would translate to something along the lines of “Lying: Boo!” In the hands of such emotivists, then, the original, mental activity of projection is adapted to a linguistic context, where it becomes expression; the semantics of the language is supposed to be very similar to what the mind is alleged to be doing – though there is little talk of the mind itself. On this account, the semantic component and the projectivist component are indeed deeply intertwined; in a
sense they have been fused together. (For more recent versions of expressivist views in ethics see Gibbard 1990, Nichols 2004, Schroeder 2008).

Projectivist ideas also appear in the work of error theorists like J.L. Mackie (1977). Contrary to emotivists, error theorists hold that claims about value and morality like “factor farming is deeply unethical” do indeed attempt to describe states of affairs, to state facts, and so can do so accurately or inaccurately. The semantic component of this view takes the surface grammar of such claims at face value, as purporting to be about the character and properties of things in the external world. The claims can thus be true or false in much the same way that scientific claims or more mundane statements about middle sized objects can be true or false; the sentences are properly evaluable as true or false. However, error theorists hold that the relevant facts, the things and properties those claims purport to refer to and describe, simply don’t exist. Therefore, all of the claims and statements about them are false; the entire discourse is radically in error.

Understood this way, error theorists like Mackie reject any kind of projectivism about meaning or concepts, but perhaps accept projectivism about properties. Here the idea of a projecting mind is brought into play to explain how we could be so radically and systematically wrong, how the entirety of our moral discourse could be founded on such an egregious error. According to such an error theoretic view about morality, our more trusted epistemic sources (usually one or more of the sciences) have convinced us that, as a matter of contingent fact, the world we inhabit does not contain any of the values or moral properties represented in our moral discourse. We make the mistake of thinking that it does, however, because our minds gild and stain that world with value-like projections in a way that makes them appear to be part of the external world. Our lived experience presents the world as-if it contained such objective values, though we have come in our wisdom to see that it does not. The semantic component of this view takes the language of value and morality as standard declarative, fact-stating discourse. But the view also sees that discourse as purporting to refer to and describe a domain of facts that simply don’t exist. We are mistaken about the objective character of the external world, and the projecting character of our minds is put forward to explain why the world seems to us the way it does, and why appearances, in this case, come apart from the world they purport to be about. For this kind of error theorist, appeal to a projectivist account of properties bears the explanatory burden of showing why we are in the grip of an illusion.7

Obviously this is cursory, but these positions can be thought of as emblematic of ways the projectivist strategy has been deployed in the context of philosophic debates. Since it is more a philosophic term of art, or better a tradition or a school of thought, no one will have the last word on projectivism. Curiously, though, while all of these views reserve a crucial role for the projecting mind to play, none of them have much to offer by way of what

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7 For other important discussions of the projectivist strategy in recent work in ethical theory, see Blackburn 1984, 1993; McDowell 1985, 1987; D’Arms and Jacobson 2005; and for recent empirically informed error theories see Joyce 2007; Greene 2014.
it might mean for the mind to project anything onto the world. Those dubious of the strategy take them to task for that omission.

III. Is Projectivism Incoherent?

As mentioned above, uses of the projectivist strategy in which I’m interested are typically local, applying to some circumscribed phenomenon, such as causation, or a delimited type of property, such as color. Regardless of the specifics, such localized projectivist accounts have what I will call a target domain. Accordingly, when skeptics of the projectivist strategy mount their criticism, they often do so against some particular application of it, i.e. projectivism about color, or projectivism about value, etc. These skeptical arguments, like the strategy itself, have a common basis, and in the case of skepticism share a similar form, logic, and conclusion, namely that the projectivist strategy is ultimately incoherent. John McDowell mounts a famous version of this skeptical argument in his “Projection and Truth in Ethics” where makes the observation that “point of the image of projection is to explain certain seeming features of reality as reflections of our subjective responses to a world that really contains no such features” (McDowell 1998, page 157). He then begins his attack by alluding to the problem that he sees as inevitably arising with the image: “The right explanatory test is not whether something pulls its own weight in the favoured explanation (it may fail to do so without thereby being explained away), but whether the explainer can consistently deny its reality” (Page 142, my italics). McDowell is criticizing philosophers who appeal to the imagery associated with projectivism to account for how the world appears to us in some places, namely those places where the appearances do not fit comfortably anywhere in the philosophers’ more considered view of reality. The problem, McDowell claims, is that any detailed unpacking of that imagery will also require appeal to resources that themselves do not fit comfortably anywhere in the more considered view of reality. The proposed (projectivist) solution, the skeptical argument goes, suffers from the same problem that it is being invoked to solve.8

More precisely, there are really three core pieces in the machinery of the skeptical argument. They are 1) the ‘more considered view’, an overarching metaphysical framework that places constraints on what reality actually contains, 2) the hard-to-fit properties or problematic aspects of how the world appears to us in the target domain, and 3) the appeal to the projectivist strategy that casts those properties as merely subjective appearances, aspects which actually originate inside the mind, but are projected outward onto, and are thus easily mistakable as objective features of, the world external to it. In short, the imposition of a restrictive metaphysical view – physicalism, or materialism, or naturalism or some other “ism” that limits one’s metaphysics to a preferred conceptual scheme and the entities it deals in – generates what I will call renegades.

Renegades, then, are the problem. Exacerbating this problem is the fact that directly denying the existence of usual suspect renegades like beauty or color strikes a great many

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8 For other versions of this kind of skeptical argument, see Stroud 1996, Putnam 1999, and White 2004.
people as *prima facie* absurd (as it should), and so building a case for complete eliminativism about them strikes many philosophers as an unpromising theoretical option. Hence, what motivates the appeal to the projectivist strategy is the need to locate and make sense of these apparent aspects of reality that seem manifest or indispensable on the one hand, but which appear mysterious from the perspective of the restrictive metaphysical framework, on the other. Renegades appear difficult to account for with the concepts or within the ontology allowed by the restrictive metaphysical view because they are not really out there in the world, not really part of the picture to which the projectivist, claims the skeptics, is committed. Rather, they are construed as a sort of illusion, a projection of our own making, the gild and stain of our minds, nothing more.9

It is at this last move that skeptics cry foul. They claim that the projectivist has here unwittingly hoisted herself on her own petard. The greenness of a pine tree, the beauty of waterfall, the disgustingness of a dumpster, and the other aspects of things that require a projectivist treatment cannot be made sense of this way, cannot be accounted for within the restrictive metaphysical view, argues the skeptic, because the very notions of projection and a projecting mind cannot be made sense of within the restrictive metaphysical view, either.

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9 Barry Stroud (1996, 27-29) develops another version sounds many of the notes distinctive of the argument just laid out in the main text. His foil is a naturalist who defends some form of dispositionalism about color, and he is eloquent and thorough enough to quote at length:

“...What human beings think, feel, and care about must be fully expressible somehow with the restricted resources available in the naturalist’s world. And that can lead to distortion. If, to accommodate psychological phenomena and their contents in all their complexity, the restrictions are lifted, naturalism to that extent loses its bite. This is the basic dilemma I want to bring out. ... For example, many philosophers now hold that things as they are in the world of nature are not really colored. There are rectangular tables in the natural world, perhaps, and there are apples in the natural world, but no red apples (and no yellow or green ones either). This view appears to be held largely on the grounds that colors are not part of “the causal order of the world” or do not figure essentially in any purely scientific account of with is so. Scientific naturalism accordingly excludes them. ... But even on this view those false beliefs and illusory perceptions of the colors of things must themselves be acknowledged as part of nature. A naturalistic investigation must somehow make sense of them as the psychological phenomena they are. Since he holds that there is no such fact as an object’s being colored, he cannot specify the contents of those perceptions and beliefs in terms of any conditions that he believes actually hold in the world. If he could, that would amount to believing that there are colored things in the world after all. ... A dispositionalist theory ... can succeed only if it can specify the contents of the perceptions of color, which it says physical objects have disposition to produce. They cannot be identified as perceptions of an object’s having disposition to produce just these perceptions under certain circumstances. The question is: Which perceptions? There must be some way of identifying the perceptions independently of the object’s disposition to produce them. So it looks as if they must be identified only in terms of some so-called “intrinsic” quality that they have. Not a quality that the perception is a perception of, but simply a quality of the perception itself. ... I doubt that we can make the right kind of sense of perceptions of color in this way. So I doubt that any dispositional theory can give a correct account of the contents of our beliefs about the colors of things. The way we do it in real life, I believe, is to identify the contents of perceptions of color by means of the colors of objects they are typically perceptions of. It is only because we can make intelligible nondispositional ascriptions of colors to objects that we can acknowledge and identify perceptions as perceptions of this or that color. But if that is so, it requires our accepting the fact that objects in the world are colored, and that is what the restrictive naturalist who denies the reality or the objectivity of colors cannot do. ... Most philosophers regard it as so obvious and uncontroversial that colors are not real, or are in some way only “subjective,” that they simply do not recognize what I think is the distortion or incoherence they are committed to.”
The projectivist resources appealed to in order to account for renegades are just as problematic as the renegades themselves. The projectivist is reaching outside the very boundaries she has set for herself, and thus the treatment for the problem is no better than the problem itself; the cure is a bad as the disease.¹⁰

**IV. Projection and Cognitive Science**

“Philosophers who talk this way rarely if ever stop to say what projection itself is supposed to be. Where in the scheme does the ability of the mind to ‘project’ anything onto anything come in?”

Putnam 1999, page 594

Putnam asks a fair question: what exactly does it mean to say the mind ‘projects’ anything onto anything else? What could it mean? Can this illusion of an account be developed into an actual one? As we saw in section II, contemporary philosophers who invoke the idea often focus on the linguistic side of the issues they are interested in, spending much of their effort investigating the semantics of claims made about entities and properties that fall within the target domain. They say relatively little about the psychological side, however, perhaps assuming that the details will take care of themselves. Proponents of the skeptical argument doubt that they will. The aim of this section, then, is to develop an account of what it is for the mind to project anything onto the external world, instead of, say, finding it there to begin with. I will set aside both the history and the skepticism, and instead focus on formulating a new way of understanding the idea that is firmly rooted in the cognitive sciences.

*Mentalizing and Anthropomorphism*

A relatively uncontroversial example will help loosen up intuitions; consider the ages old human tendency to anthropomorphize. When we anthropomorphize something, we incorrectly ascribe an array of human characteristics to a thing that does not actually have them, be it a cloud, a mountain, an animal, or even the entirety of nature. The human tendency to do this is widespread, and thought to lie behind a variety of phenomena, but it is perhaps most consistently invoked in discussions of religion (see Guthrie 1993, chapter 3 for a useful overview).

¹⁰ A stronger version of the skeptical argument goes like this: given that the restrictions the projectivist has accepted are often conceptual, she does not even have the resources to specify the content of the alleged illusion generated by the projecting mind. Equipped only with the conceptual apparatus available in the restrictive framework, she cannot even say or express what subjects in the grip of a projected illusion think they are beholding, or what they mean when they attempt to describe it. Thus, the projectivist is strictly speaking unable to even describe what she wishes to denigrate as a mere projection. According to this version of the skeptical argument, then, a projectivist account is not even an account of an illusion, but an illusion of an account.
Cognitive science has made great strides in understanding this tendency of ours to read human characteristics into non-human things. Work on our folk psychological capacities has been used to inform work on the psychological underpinnings of religion and religious belief, and this cross-pollination of ideas has turned out to be exceptionally fruitful. Our tendency to anthropomorphize has been traced to our capacity to detect the presence of other animals, especially people, to see them as animate, purposeful beings and to make sense of them in terms of their beliefs and desires. On the one hand, cognitive scientists specifically exploring our folk psychology have uncovered a number of surprising features of those folk psychological capacities and posited a variety of cognitive mechanisms that might underlie them. These include mechanisms dedicated to agency detection, which interpret certain types of motion as the volitional and purposive behavior of animate creatures, rather than the mere movement of inanimate objects. They also include mechanisms dedicated to aspects of mindreading (or mentalizing), which do things like ascribe intentions and mental states to those (alleged) agents, and allow for intuitive understanding, quick explanation, and easy prediction of their behavior in terms of those beliefs, desires, and other mental states. On the other hand, cognitive scientists working on religion point out that these folk psychological capacities, together with many of their most noteworthy features, naturally explain aspects of anthropomorphism. The relevant findings can be boiled down to a trio of properties that characterize the operation of the cognitive mechanisms involved, and a fourth property that characterizes when they operate.

With respect to this fourth property, research has found that human folk psychological capacities are on a hair trigger for a variety of evolutionary reasons, they follow the logic implicit in the phrase “better safe than sorry” (better to mistake a windblown leaf for a predator than mistake a predator for a windblown leaf). The underlying mechanisms are activated at the slightest provocation. Due to this, they are also apt to yield many false positives. Misfiring in such cases, they attribute agency and minds to things that are manifestly not agents, and which manifestly do not have minds, such as windblown leaves, clouds, or entire mountains. It is not just their easy activation that is of interest, though. Equally relevant is the manner in which they do their work once they have been activated. The cognitive mechanisms underlying our folk psychological abilities, and thus our tendencies to anthropomorphize, are fairly autonomous, they operate implicitly, and they are productive. First, the mechanisms are autonomous in that they can operate along side, and at the same time as, a variety of other parts of the mind, without any cognitive effort and while our attention is elsewhere. The operation of the mechanisms underlying our folk psychological capacities does not preclude the simultaneous operation of, for instance, the complex mechanisms involved with language production and comprehension, mechanisms suberving perception in all five modalities, mechanisms underlying higher order reflection.

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and judgment, and so forth. Nor does the operation of these later types of mechanisms preclude our folk psychological capacities, either.

Second, to say that many of the cognitive mechanisms uncovered appear to work implicitly is to say that, for instance, mechanisms of agency detection and mentalizing often operate quickly, spontaneously and automatically, without any deliberation or purpose on the part of the subject. One does not simply decide to turn them on, nor can one decide to turn them off, either (though on some occasions one may be able to suppress or override their effects). The mechanisms often operate without our explicit awareness; we simply and naturally think of other people, and any other targets of our mentalizing abilities, as the possessors of minds. We just as effortlessly make the complicated inferences about the connections presumed to hold between their movements and those mental states as well. Again, the mechanisms are autonomous enough, and all of this happens so automatically and naturally, that we often do not even notice that it is being done, let alone notice the complexity of the inferences being performed or the scope of the assumptions that are implicitly being made. Moreover, such autonomous and automated mechanisms can continue to operate despite cutting against our more considered judgments.

Third, the cognitive mechanisms that underlie our folk psychological capacities are productive. Once activated by the proprietary cues and prototypical types of motion that trigger them, these mechanisms go on to automatically infer the presence of a wide variety of other attributes associated with agency and minds. Based on the detection of fairly limited or specific evidence, they produce a relatively large set of cognitive effects, including assumptions about other features possessed by the triggering entity, implicit expectations about how it will behave, and typical patterns of inference about how best to think about and deal with it. Or in more colloquial terms, with productive cognitive mechanisms, you get more out than you put in.

To render the idea of productivity more picturesquely, think of some behavioral capacity as being subserved by a black box cognitive mechanism, a machine that takes inputs and delivers outputs. When the machine receives an input, perhaps via detection of a particular property in the surrounding environment, it performs its proprietary computations, and delivers its output. To say that the machine or mechanism is productive is to make a claim about the character of the output, namely that it is multifaceted, and consists of not a single effect but many, an entire cluster of them, which might include different kinds of elements, i.e. affective, motivational, attentional, cognitive, behavioral, or otherwise. For instance, a productive mechanism might go from an input of detecting a piece of evidence or small set of environmental cues to an output consisting of a rich set of assumptions, expectations, and inferences about those inputs. In the case of our folk psychology, input triggers include things like specific types of movement, bilaterally symmetrical patterns, and perhaps language-like sounds. The output includes not only the automatic ascription of

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12 To experience your own folk psychological capacities in action, and in a way that illustrates many of these properties, consult the variation of the famous Heider and Simmel films at this website: http://cogweb.ucla.edu/Discourse/Narrative/heider-simmel-demo.swf.
agency and mental states to the triggering entities, but an entire cluster of assumptions about
the way the (putative) beliefs, desires, and goals relate to each other and expectations about
the types of behavior these will give rise to in the (putative) agent. This complicated but
patterned set of expectations and assumptions far outstrips what has been, or often can be,
known about the triggering entity based solely on the input, the preliminary evidence that
was initially detected.

Disgust and Disgustingness

Empirical research on the emotion of disgust suggests an underlying set of
psychological mechanisms that share many of the relevant properties with those underlying
our folk psychological capacities (for an overview see Kelly 2011). Shaped by pressures that
favored the same evolutionary logic of “better safe than sorry,” the emotion is also on a hair
trigger, which also gives rise to a well-documented set of fairly straightforward false positives.
The mechanisms underlying disgust are productive as well. The detection of a certain type of
food, the smell of a rotting corpse, or the violation of a purity norm will activate the full
multifaceted suite of components that together make up the disgust response. These include
a gape face, a flash of nausea and sense of oral incorporation, as well as a quick withdrawal
and more sustained inferential signature consisting most prominently of a sense of
offensiveness and contamination sensitivity. These constitute a set of expectations,
inferences, and assumptions similar to those discussed in relation to anthropomorphism and
our folk psychological capacities. In the case of disgust, the triggering object is assumed to
be aversive, expected to be harmful. Patterns of inference are made about the disgusting
object, which prominently feature thinking of it as dirty or tainted, and about its ability to
transmit its disgustingness to other entities that it comes into contact with. And while the
productive output of the disgust mechanisms may not be as cognitively complex as the
inferences about mental state and their relations to behavior generated by the agency
detection and mentalizing mechanisms, the productivity of the emotion is more
psychologically diverse. That is, it contains some cognitive components, but being an
emotion, it contains other types of elements as well. Activation of disgust produces
characteristic behavioral components like the quick withdrawal and gape face, and
characteristic affective and physiological components, such as nausea and a slight dip in
heartbeat.

While there is often a hard (but not impossible) to miss phenomenological
component of disgust, there are many other components to the response, and the package of
psychological mechanisms operate implicitly to produce these. The response is reflex-like in
that it can be effortlessly and automatically triggered, and the patterns of inference associated
with contamination sensitivity and offensiveness can seem entirely natural. Disgust is also
relatively autonomous. Surprisingly, the relevant mechanisms can be triggered without our
awareness, and even influence our higher-level judgments having to do with moral
permissibility without our being aware of their involvement, as demonstrated by Wheatley &
Haidt (2005). The expectations, inferences, and intuitive judgments they produce or influence can cut against our reflective judgment in much the same way, and can do so just as persistently as other automatic and implicit mechanisms, as illustrated by many people’s reluctance to eat a turd-shaped chocolate or drink juice from a new, sterile bedpan or stirred with a new, unused comb (see Rozin et al 2000 for an overview).

From Easily Activated, Autonomous, Implicit and Productive Mechanisms to A Projecting Mind

I boiled down a large number of the features of cognitive mechanisms underlying our folk psychological capacities to just four properties (albeit high level ones), mainly for easy of exposition: implicit and autonomous operation, hair trigger activation, and productive output. These terms characterize complex sets of mechanisms. They also wear on their sleeve that they describe the functioning of the mind, since they characterize the mental operations that produce disgust or give rise to anthropomorphic tendencies. This way of talking about how the mind works is also couched in a highly theoretic vocabulary that was developed in conjunction with controlled, scientific experiments, and is employed to understand and characterize the functioning of the mind in maximally objective, mechanistic, third person terms. For the uninitiated, this can be hard to get one’s head around, or at least the jargon can be hard to penetrate. Another, much more intuitive way to describe what happens is in terms of projection. In fact, researchers on religion very easily fall into this type of language. In making one argument, Pascal Boyer does so a number of times:

“We project human features onto nonhuman aspects of the world … [we] do not always project onto these agents other human characteristics, such as having a body, eating food, living with a family or gradually getting older. Indeed, anthropologists know that the only feature of humans that is always projected onto supernatural beings is the mind”

(Boyer, 2001, page 143-4, his italic, my bold).

From the first person point of view, people are often unaware of the operation of these psychological mechanisms; they do their work implicitly, and perform their operations without having to be deliberately activated, consciously monitored, or effortfully guided. It is hardly noticeable, therefore, that the complex but implicit activity of one’s own mind is in fact responsible for the attribution of those features, and so it can easily seem, from a first personal point of view, as if the features were “out there” in the world to begin with. This can also easily escape a person’s explicit subjective notice because the relevant mechanisms are autonomous enough to be operating at the same time that a person’s conscious attention is elsewhere. Thus, the accompanying experience is simply presented in such a way that the entities in question seem to be objectively disgusting, or to genuinely have agency and minds: they are automatically treated, and thought about, as-if they have the properties ascribed to them, whether or not they do. Because these mental operations are so automatic and effortless, it is easy to see how an unreflective person might mistakenly take the source of
those expectations and assumptions to be in some feature of the triggered entity itself, that was detected “out there” in the world and reflected in the mind, rather than being implicitly generated by a productive, autonomous component of her own mind that is shaping the experience.

Despite how compelling these subjective appearances may be, in cases of blatant anthropomorphism a little reflection is all that is required to realize that they are misleading. Once this is achieved, it is often easier to switch to a different way of talking about the experience, to a vocabulary that is not as baldly mechanistic as the jargon of cognitive science, but one that nevertheless explicitly marks the role of the anthropomorphizer’s mind in producing those appearances. Indeed, it seems much easier to say that the mind projects agency and mentality onto the entities it anthropomorphizes, and then treats them accordingly. Because agency and mentality have been projected onto those entities, we treat them as-if they did, indeed, have the features of volitional movement, and were driven by rationally connected beliefs, desires and goals. Our tendency to interact with them in certain ways, to make certain inferences about them, or to have the types of assumptions and expectations we typically do have, is merely encapsulated in the shorthand of projection talk.

As in the case of anthropomorphism, we can think about disgust and disgustingness in terms of projection. Once again, it is often easier to switch to a vocabulary that is not as baldly mechanistic as the vocabulary of cognitive science, to one that nevertheless explicitly marks the role of the disgusted subject’s mind in producing the experience of disgust and the “appearance” – in Goldman’s (2007) sense – of disgustingness. Indeed, it is quite natural to say that the mind projects disgustingness onto the entities that trigger disgust. This is true for the same reasons that it seemed easier to say that in cases of anthropomorphism, the mind projects agency and mental states onto entities in the world, rather than passively reflecting what it finds there. Since we do not have to initiate, consciously monitor or effortfully guide the relatively autonomous mechanisms that produce the emotion of disgust, it seems like – the experience is simply presented in such a way that – the entities in question actually are offensive, tainted, and contaminating: they are automatically treated, and thought about, as-if they have those properties. Or perhaps this puts the cart before the horse, and it is best described the other way around: because those productive mechanisms implicitly induce such a rich variety of expectations, assumptions, and inferences about whatever triggers them, the appearance of disgustingness, indeed, the very perceptual experience correlated with their operation presents the entities in question as-if they actually were bad, nauseating, tainted, and contaminating. Our tendency to make those inferences, or to have the types of assumptions and expectations we typically do have, is captured by the shorthand of projection talk – we project the property of disgustingness onto entities in the world, and then treat them accordingly. The property of disgustingness, which seems like it is a property of things “out there” in the world, is in fact an encapsulation of the suite of components of the disgust response to the things that trigger these implicit and productive mechanisms. Saying we project the property of disgustingness is just saying that we naturally treat such
entities as if they actually had the cluster of properties we encapsulate with the word ‘disgusting’, namely as if they were offensive, tainted, contaminating, and so on. One question that arises is whether the idea of projection is appropriate when the set of inferences, expectations and assumptions encapsulated by the talk of projection is largely correct. It is natural to talk about our tendency to anthropomorphize in terms of projection, but what about when our folk psychological capacities are activated by, say, another person, who is animate, who does possess agency and have a mind, and whose behaviors are produced by their beliefs, desires, and other mental states in just the way agency detection and mentalizing mechanisms assume they are? Does the mind project only in cases where the mechanisms involved are yielding a false positive?

Given the reconstructed notion of projection I am working with, the answer to this question is straightforwardly (though perhaps surprisingly): “no”. The refurbished understanding of projection now on hand implies that the mind is “projecting” whenever such mechanisms are activated, whether the triggering entity is an anthropomorphized cloud or a fully animate human being, complete with beliefs and desires. However, it is certainly more natural to talk in terms of projection in cases of anthropomorphism because there is an obvious need to appeal to the role of the projecting mind, namely the need to explain the fairly obvious error involved. When the mechanisms of the mind, and cluster of assumptions, expectations, and inferences they produce, correctly capture their triggering object, that need does not arise. Since there is less explanatory work to do, talk of projection, of the mediation of the relevant cognitive mechanisms, becomes superfluous from the point of view of the pragmatics of explanation. Thus, projection talk often simply drops out. But, from the absence of that explanatory role and disappearance of the pragmatic need to fill it by appeal to the projecting components of the mind, it does not follow that the mind itself is not projecting in this sense.

As noted in Kelly 2011:

“It is also worth emphasizing that though “offensive” and “contaminating” are properties often ascribed to items that trigger disgust, a sense of offensiveness and contamination sensitivity and the patterns of behavior associated with them, in the sense discussed here, are parts of the response to such items. Indeed, one of the most insidious aspects of disgust is that once an item triggers it, that item is thereby treated as if it were offensive and contaminating — whether or not it is genuinely offensive (if there is such a thing) or objectively contaminating (which there certainly is). In this sense, then, it is part of the disgust response that the properties of offensiveness and contamination potency are projected onto whatever elicits it.” (Chapter 1, page 21).

In the case of folk psychological capacities and the mental states that they ascribe, it is interesting to note that while there is currently a large if loose consensus regarding the existence of some type of dedicated cognitive mechanisms underlying our ability to mentalize, there have been genuine philosophic debates about whether those mechanisms could ever yield anything but false positives. Philosophy of mind in the 80’s and early 90’s was dominated by debates over realism and eliminativism about common sense mental states, which explicitly addressed the question of whether the beliefs, desires, and other mental entities ascribed by those folk psychological capacities exist at all, in humans or anything else (Dennett 1981, Churchland 1981, Stich 1983, Fodor 1987). What no one challenged, however, was that we do, indeed, ascribe, make sense of and predict each other in terms of such of mental states.

To put the point in terms of one of the images at the heart of the projection, a film projector could easily project a blue image onto a screen that is, itself, the same shade of blue as the image projected onto it. Two conclusions can be drawn from this possibility. Knowing that a blue image is being projected, one is not
The situation is to some extent similar when we move from our folk psychological capacities to the mechanisms underlying production of disgust and the analogous questions that arise about disgustingness. Does the mind only project disgustingness in those cases where the mechanisms involved are yielding a false positive? Again, given the notion of projection we are working with, the answer to this question is straightforwardly “no”.

But in the case of disgust, the situation is importantly and interestingly different as well, and I’ll briefly argue that the difference can be traced to two main sources: imperfect fit and adaptive variability. Given what we know of the disgust response, the cluster of components that constitute it, and the various roles that it has been co-opted to play, we know that there are, coarsely put, almost no full true positives at all. For a variety of reasons, there is nearly always an imperfect fit between the full disgust response and the entities that trigger it. Vague awareness of this imperfect fit, in turn, can raise suspicions that something is amiss, and careful reflection can refine that suspicion, creating an explanatory role that projectivist talk can be very useful in filling. Since, pragmatically speaking, imperfect fit creates the felt need for further explanation, and there is nearly always an imperfect fit between response and triggering entity in cases of disgust, there is nearly always an explanatory role that the appeal to the projecting mind can fill.16

Imperfect fit can come in degrees. The most flagrant cases are the clear false positives. With disgust, these are often generated by the hair trigger of the response by things like turd shaped chocolates and juice stirred with a sterilized cockroach. Here the triggering entities are obviously (indeed, artificially constructed with malice aforethought) neither poisonous nor infectious nor contaminating, and thus are not matched to any of the individual components of the response they elicit. Imperfect fit can take subtler forms as well. Because the disgust response is productive, composed of a variety of components that generate a cluster of inferences, expectations, and assumptions, it is possible for triggering entities to fit some components, but not others.17 However, it is difficult to find triggering thereby licensed to infer that the screen is not blue. Alternatively, knowing that the screen is blue, one is not thereby licensed to infer that nothing blue is being projected onto it, either. This is a weird implication, I realize.

16 The case of race and racial cognition is equally informative. Amongst researchers concerned with race, there has been a consensus that races are not natural groupings, that racial categories that group together people based on shared sensory characteristics like skin color do not pick out members who also thereby share a variety of other, intrinsic, perhaps biological characteristics. Some have gone so far as to claim races simply do not exist (see Appiah 1995 for an eloquent defense of this position.) Here too, such eliminativism flies in the face of lived experience, particularly in the social and political arena where races and racial distinctions loom large. Claiming races do not exist thus creates an explanatory vacuum. If races do not really exist, why do we so easily and intuitively see our social interactions in racial terms? Why, if it turns out there is no such thing as race, do we so persistently think there is? Psychological explanations will be a crucial ingredient in whatever complex story ends up filling this explanatory vacuum, and they will include appeals to features of the psychological mechanisms dedicated to racial cognition. See Kelly et al 2010 and Mallon and Kelly 2012 for a more detailed discussion of the idea that, in terminology being developed in this paper, we project race onto each other and ourselves.

17 The same might be said of our folk psychological capacities and subtle forms of imperfect fit; anthropomorphism certainly comes in degrees. For instance, there is a difference between ascribing animacy and mentality to a cloud, and ascribing too much cognitive sophistication to a dog. In the later case, the dog probably satisfies some of the attributes ascribed to it, just not all of them.
entities in which the entire cluster of expectations, assumptions, and inferences generated by disgust is satisfied, even in cases where the disgust execution system is not simply misfiring due to its hair trigger, but is performing one of its primary or auxiliary functions. This point can be elaborated by focusing other properties of the emotion.

First, on my view, disgust is a kludge, created when a mechanism dedicated to monitoring food intake and protecting against poisons fused with a mechanism dedicated to monitoring for potential signs of disease and protecting against parasites (see Kelly 2011 chapter 2). The disgust response is a piecemeal conglomeration of elements from each of these, and thus the response itself is not elegantly or particularly well fitted to either poisons or parasites. The nausea produced in reaction to something infectious is superfluous, as is the contamination sensitivity produced in reaction to something that causes gastro-intestinal distress when ingested. Such superfluities, even in cases where disgust is performing one of its primary functions, create the explanatory role that is easily filled by saying that while one might be poisonous or another infectious, the full property of disgustingness is projected onto both of them.

On our revitalized understanding of projection, talking of projecting a property onto triggering entities is just a less precise way of rendering talk about the large set of assumptions and inferences that will implicitly be produced about how that entity will behave, affect the person, and should be treated. Once we see that the disgust response itself is an inelegant, piecemeal kludge, we can also see that the property of disgustingness understood this way, rarely, if ever, perfectly characterizes the entities that it is projected onto. Entities might be poisonous, and they might be infectious, but rarely will they be disgusting, and thus both. Add more of the elements from the cluster of the disgust response into the mix, and the conjunction will grow larger, and thus more difficult to satisfy by any entity triggering the emotion.

Put another way, the components of the productive disgust response have a psychological unity: they form a homeostatic cluster and are produced with nomological regularity, and triggering of disgust reliably activates the entire coordinated suite of components. These clustered components covary “in the head”. However, we have little reason to think that properties corresponding to each component “out there” in the external world themselves form such a reliably occurring homeostatic cluster. The psychological and evolutionary reasons rehearsed here strongly support the vaguely intuitive notion that they do not. While an occasional entity may bear the complete set – all of the poison properties and all of the parasite properties and all of the putatively moral properties, etc. – those properties by no means covary with any nomological regularity “out there” in the world, and so by no means form a homeostatic property cluster analogous to the corresponding psychological cluster of components “in the head”. Thus, there will almost always be an imperfect fit between response and triggering entity, and as a result of that imperfect fit, there will be almost always be explanatory work to be done by appeal to the projecting mind.

The emotion is also multifunctional. In addition to protecting against parasites and poisons, disgust was recruited to further help regulate social interactions in a variety of ways,
and thus acquired a number of auxiliary functions as well (see Kelly 2011 chapter 4). Nevertheless, when disgust is brought to bear on those auxiliary functions having to do with, for instance, social norms and monitoring ethnic boundaries, it brings to bear the full homeostatic cluster of components that make up the response. This creates more obvious forms of imperfect fit, as well as the cognitive byproducts that are being explored in recent empirical research on moral judgment and disgust.

As that research has demonstrated, in such cases the psychological mechanisms underlying disgust will project the property that we simply call disgustingness onto norm violators or members of vilified outgroups, who will be treated as-if they were not just wrong or foreign, but tainted and contaminating as well. Here, most if not all of the clustered components of the disgust response will fail to be satisfied; the fit between response and triggering entity will be far from perfect. Nevertheless, because disgustingness is projected onto them, participants in the relevant social interactions will appear to be, and easily treated as-if, they are soiled, both polluted and polluting. Once again, due to the imperfect fit, there is explanatory work to be done by appeal to the projecting mind.

The second projectivist-relevant feature of disgust is its adaptive variability. It is key to the emotion’s functionality that it allows for both individual and cultural level differences with respect to what triggers it. The threats coming from both poisons and parasites manifest in different ways in the many different environments that human can inhabit, and so the psychological machinery that evolved to protect against those threats needed to be flexible, sensitive to both personal experience and social influence to calibrate an individual’s disgust system to his or her local environment (see Kelly chapter 3 for a full discussion of the machinery and adaptive rationale). This type of variation opens up an explanatory role that appeal to the projecting mind can fill, but in a slightly different way than imperfect fit does. For example, one person might find meat delicious, while another person who read Upton Sinclair’s The Jungle at an impressionable age finds it utterly disgusting. An easy way to talk about this is to say that the later person projects disgustingness onto meat, while the former does not. Seen this way, it does not seem to be a case where one person is right and the other wrong, of whether meat is objectively or really disgusting or not. Rather, it is simply a case where the former person’s projective psychological mechanisms are operating, and presenting the meat in a very vivid way, as tainted and nauseating and aversive, while the later person’s is not. The disgusted person does not find properties of offensiveness and contamination in the meat and passively reflect them, while the steak eater fails to detect and reflect them; the mind of the Upton Sinclair reader actively projects those properties onto the meat when they trigger his productive disgust mechanisms, even if, because those mechanisms operate implicitly and autonomously, he does not realize his mind is doing so. Similar reasoning can be extended straightforwardly from idiosyncratic differences among individuals to patterns of cultural variation in disgust elicitors as well.18

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18 It would be interesting to do an in-depth comparison between the projectivist story I’ve told about disgust and disgustingness, especially with respect to the role of adaptive variability, and the account that Burge (2010)
In sum, then, it is not simply that its hair trigger generates a class of blatant false positives, nor merely the fact that the autonomous mechanisms underlying disgust are productive and implicit, that support the idea that disgustingness is projected. There is non-trivial, adaptive diversity in what elicits disgust, both at the individual and cultural level, and there is good reason to think the capacity for such variability was selected for so that it could do its jobs more effectively, rather than being the result of malfunction, random noise, or some design flaw in the machinery. In addition, even restricted to a single individual, there is no reason to think there will be some single property shared by all (let alone only) those entities that appear disgusting to that single person, above and beyond the fact that they active the integrated package of psychological mechanisms that make up her disgust response. Moreover, few if any will have the entire set of features that disgust will portray them as appearing to have. In the case of disgust and disgustingness then, there will almost always a pragmatic role for psychological explanations to fill. Dim but widespread appreciation of this, I suspect, underlies the plausibility of the idea that disgustingness is projected – if anything is.

V. Conclusion: The Skeptical Argument Revisited

Consider again the skeptical argument against the projectivist strategy. Skeptics take aim at an approach used to “locate” manifest but ontologically mysterious aspects of the way things appear to us that was marked by three main elements: a restrictive metaphysical view, a set of renegades made problematic by the acceptance of that restrictive metaphysical view, and the appeal to projectivism to make sense of or account for those renegades. The skeptical argument claimed that the last move was illegitimate on the projectivist’s own grounds because projectivist resources are just as renegade as the properties they were being invoked to legitimate.

This argument need not get any purchase on selective deployment of the revamped understanding of a projecting mind constructed here, because that understanding does not require commitment to any draconian restrictive metaphysical view. While the discussion here has been largely naturalistic in spirit, cleaving as close as it does to the cognitive sciences, it is not thereby held hostage to any overarching puritanical position on ontology; it just needs to accept the existence in nature of minds and their denizens: mental states and psychological process, cognitions and affects, and so forth.19 Worries about the projectivist strategy being incoherent or self-defeating only arise if either a) there is reason to think reality doesn’t contain minds, or b) the projectivist strategy is being used to locate or account for minds themselves. The cognitive science based account of projectivism given here satisfies neither condition, and so avoids the skeptical argument.

gives of objectivity, especially with the respect to the role of the universal features of human perceptual systems.
19 While there are naturalistic philosophers of mind who are tempted by puritanical views (Fodor 1991), there are also naturalistic philosophers of mind with a much more liberal conception of what there is, and how questions of ontology relate to natural science (Dennett 1991, Stich 1996).
Of course in appealing to the operation of minds and psychological mechanisms, the refurbished projectivist strategy *presupposes* there are minds; indeed it appeals to the emotion of disgust, and our mentalizing abilities and other aspects of human minds and the way they are sensitive to social influence and can actively produce inferences, motivation, and behavior in response to environmental cues. But as we’ve seen, the strategy *appeals* to those aspects of minds, it doesn’t purport to *explain* or *account* for them. As long as projectivism isn’t used to account for minds or these features of them, it avoids circularity and incoherence. And luckily there are very many other good reasons to think minds exist, and none of the most promising reasons are projectivist in character either. So the main skeptical worry is defused.

The discussion here showcased the emotion of disgust and the property of disgustingness, and the projectivist account of disgustingness locates or finds the source of that property ultimately in the functioning of human minds. The strategy will do likewise for whatever other properties it turns out to correctly capture as well. But it does not follow, nor have I concluded, that those properties do not exist, or that nothing is really disgusting, or that all statements ascribing disgustingness are false. As long as reality contains minds, and minds project disgustingness, and then reality also contains disgustingness.²⁰

How broadly can the strategy be used? That remains to be seen, but it looks like the sorts of features and mechanisms here associated with the *projecting* mind are anything but rare (see for instance Kahneman 2011). While the talk of projection is not always present or foregrounded, other cognitive scientists have argued that indeed, much of the mind does not fit the intuitive, Cartesian picture of mind as mirror, with mental operations that are easily available to introspective access, and that require effort or are under direct conscious control. Such aspects of mentality are coming to look like a smaller and smaller portion of the rich, variegated tapestry of mental life, which is dominated instead by highly autonomous, implicitly operating, productive mechanisms. When it comes to the projective character of our own minds, we may largely still be “strangers to ourselves” (Wilson 2002).

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²⁰ Obviously I’m a realist about disgust, but does this commit me to an error theory about disgustingness, perhaps of the kind attributed to Mackie in section II? Not yet, as far as I can tell. I haven’t said anything about the semantics of claims like “that’s disgusting!” or “eating meat is revolting,” and so have taken no stand on whether such claims are uniformly false, speaker relative, crudely expressive and not truth apt at all, or anything else. I could see an error theorist of the Mackiean sort adopting the psychological account I’ve given, insisting that the surface grammar of sentences ascribing disgustingness indicates that they would be true only if the property being ascribed was e.g. objective or mind-independent. But I can easily imagine a quasi-realist like Simon Blackburn adopting it as well, while also maintaining that some ascriptions of disgustingness are true (or deflationarily true), because he disagrees with the error theorists on a host of other metaphysical and semantic issues. For now, anyway, I’m happy to stand pat with the psychological story I’ve told and let the philosophers of language work out that part of the story.
References


