

6

## THE BODY AND SOUL EMOTION

In Tierra del Fuego a native touched with his finger some cold preserved meat which I was eating at our bivouac, and plainly showed disgust at its softness; whilst I felt utter disgust at my food being touched by a naked savage, though his hands did not appear dirty.

—Charles Darwin,  
*The Expression of the Emotions in Man and Animals*

Cover thy breast, it offends me.

—Molière

BABIES AND TODDLERS will happily play with, roll around in, and even eat substances that make their parents gag. My son Zachary, when he was two and a half years old, showed no disgust at all, just curiosity. During diaper changes he would frequently demand, “Show me the poo-poo!” and would, if he were permitted, scoop it up to get a closer look. Freud believed that children are very fond of their feces—he suggested both that they see excretion as akin to childbirth and that they view feces as substitute penises—

but I saw none of this in Zachary. He showed no sense of loss when his soiled diaper was dropped into the pail. He just saw feces as an interesting substance that appears from his body as if by magic.

Zachary's older brother, Max, was different. Max was fine at that time, and his aversion to disgusting things was much like my own. If anything, he was overly fastidious. He could not bear to be present during his brother's diaper changes, and showed an almost comical aversion to urine, blood, and vomit. Max was also cautious about the contact between different foods on his plate. If a disfavored item touched some food, that food was no longer fit to eat. William Ian Miller describes in *The Anatomy of Disgust* how his own young children grew to be excessively concerned about their own bodily wastes. His daughter refused to wipe herself after going to the toilet because she was worried about sullyng her hand; his son would insist on removing both his underpants and his pants if even a drop of urine went astray.

As Miller points out, disgust is a risky topic. Most writing does not take on the quality of its subject matter; one can write about boredom without being boring, or about humor without being funny. But disgust has evocative powers beyond an author's control. If you write about disgust, you are likely to end up eliciting disgust, and this is a worrying imposition to place on a reader. Also, the topic, and particularly some of the descriptions, might seem juvenile, the stuff of low comedy. Miller struggles with these concerns throughout his book, and at one point gets so worried about not being taken seriously that he abruptly cuts short a fascinating discussion of snot.

But the benefits of looking closely at disgust are well worth the risks. The study of precisely what we view as disgusting can give us insight into how our thoughts of bodies relate to our thoughts of souls. The potential to think of people and their actions as disgusting is intimately related to whether you see someone as a physical body, in which case disgust is hard to avoid, or as a soul, in which

case you can transcend it. This duality of perspective has moral and political consequences in such disparate realms as genocide and sexual passion.

#### BAD TASTE

The word “disgust” comes from Latin and means, literally, “bad taste.” And there is good reason to believe this emotion has a lot to do with food and eating. When people are disgusted, they make a certain facial expression, and this expression, as Darwin pointed out, is plainly an attempt to ward off odors, by scrunching the nostrils, and to expel unwanted food, by clenching the jaw and thrusting the tongue outward.

Also, disgust can cause nausea, which is a sensation highly relevant to food and eating. In the 1960s, the psychologist John Garcia discovered that when a rat is given a novel food and later nausea is induced by means of drugs or a high-dose of X-rays, the rat will develop an aversion to this novel food. This “Garcia effect” applies as well with humans, and can override conscious knowledge and desire. If you eat sushi for the first time and later experience nausea in connection with the flu, you might find yourself unable to stomach raw fish ever again. Even if you know full well that your nausea was caused by the flu, the very thought of sushi—its smell and taste—may inspire queasiness.

Nausea can cause vomiting. Vomit is a wonderful multipurpose substance; it is both an effect and a cause of disgust. At the same time that vomiting empties the stomach of anything you have eaten, its smell and appearance can produce nausea and thus more vomiting in yourself and others. In this way, vomit serves as a form of nonverbal communication, one that bypasses conscious reasoning. When you vomit, it is like shouting, “We may have eaten poisonous food. Everyone, stop eating, and empty your stomachs!”

Paul Rozin, a psychologist who has done much of the research in this area, notes that there are many reasons one might avoid eating certain things without being disgusted by them. Some things are not thought of as food, such as rocks and bark. Some are deadly, like arsenic. (You would be terrified at the notion of being forced to drink tea laced with arsenic, but you would not find it disgusting. Your face wouldn't scrunch up; your bile wouldn't rise.) Some potential foods are forbidden for religious reasons, like pork for Jews and Moslems, or beef for Hindus. Some foods taste bitter, or are too bland, or too spicy. Even babies have preferences. They prefer the sweet to the bitter; if you wish to please a baby, you are better to offer sweet milk than sour pickles.

So what does elicit disgust? The best way to answer this is to look at why this emotion exists in the first place. Rozin points out that humans suffer from the "generalists' dilemma": We are not limited to a single source of food. We are not herbivores such as koalas, destined to eat only eucalyptus leaves; neither are we carnivores, like lions. We are omnivores, born into environments in which we must choose among an ever-changing array of food sources, including fruit, vegetables, and animal flesh. Agriculture, the domestication of animals, and elaborate food preparation technology have enabled modern humans to create an extraordinary universe of potential foods that no other creature would ever have dreamed of consuming, including alcoholic beverages, spicy foods, and processed cereals. But even hunter-gatherers faced the generalists' dilemma.

This world of opportunity is mostly a good thing, because when one food source is scarce, we can move to another. On the other hand, some of these foods can kill us. One hazard is plants, which have evolved chemical poisons as a defense against being eaten by herbivores. Even in urban America, many calls to poison control centers are made when children have become sick by eating houseplants.

Meat poses its own special problems. Here, the problem is the invisible microorganisms that can live within meat and multiply expo-

nentially, resulting in contamination. You do not want to touch rotten meat, and you certainly should not eat it. You want to be as far away from it as possible. It is disgusting.

Now we can begin to understand what sorts of things elicit disgust. Nonbiological natural things like mountains and clouds are never disgusting, and neither are artifacts, with the notable exceptions of those made specifically to resemble disgusting things, such as plastic vomit. Plants are rarely disgusting by themselves, except for rotting vegetation, which is similar in appearance and touch to rotting flesh. Disgust is an emotion revolving around meat and meat by-products, substances that carry risk of disease and contagion.

#### BETTER SAFE THAN SORRY

Disgusting things are contaminating; any contact, however minor, is repulsive. This is not true of dangerous things in general. I might walk around with a vial of hemlock; I might keep it in my desk, nestled against my lunch. But I would not want to walk around carrying a dog turd, and if I had to, I would take pains to keep it away from my body and my food.

Various psychological experiments take this revulsion to interesting extremes. If you swish a sterilized cockroach in a glass of milk, you are not going to find anyone willing to drink the milk. Nor will anyone want milk that has been poured into a brand-new urine container, or stirred with a brand-new fly swatter. Nobody wants to eat out of a bedpan, even if it has been swabbed shiny clean. People often refuse to hold rubber vomit in their mouths, and would rather not eat fudge that has been baked in the shape of dog feces.

Irrational? After all, the subjects have been reassured that the cockroach has been sterilized, the fly swatter is new, and the bedpan is clean. Imitation vomit and fudge feces are harmless. Rozin and his colleagues note that disgust obeys the two laws of sympathetic magic that were described by the anthropologist Sir James George

Frazer in *The Golden Bough*. The first is the law of similarity, or homeopathic magic, whereby “appearance equals reality.” Voodoo depends on this law. A voodoo doll resembles a person, and hence stands for it, and so stabbing the doll equals stabbing the person. The second is the law of contagion, whereby physical contact leads to the transfer of properties. Both laws arguably apply in the domain of disgust: fake feces are treated as if they are real (similarity), and if an object touches some feces, that object itself becomes disgusting (contagion). And so the experiments show that we are not rational beings; the laws of magic sway us.

Yet, at least in the domain of disgust, these biases often make sense. First, a belief in contagion is rational. Disgusting things really *are* contagious; germs really *do* transmit by contact. Maybe the nice graduate student is very responsible, and the cockroach really has been sterilized, the fly swatter is brand-new, and the bedpan has had a darn good scrubbing. But why take the chance? You don't lose anything by refusing to consume the questionable substance, after all. The moral here, as in so many of our cognitive systems, is: Better safe than sorry.

What about similarity? Even if you know that imitation dog feces are made of chocolate fudge—even if you baked it yourself, placing the fudge inside a feces-shaped mold—you might still be reluctant to take a bite. Isn't this irrational? To some extent it is, but, at worst, it is an inevitable by-product of a system that has evolved to do rational things. As discussed in chapter 2, our minds have evolved to focus on the deeper properties that objects possess—but the way we know about these deeper properties is by the information we get through our senses. And use of our senses makes us vulnerable to false alarms, cases where something looks like one thing but actually is another. Flickering images on a television screen, which we know full well to be nothing more than patterns of light on a two-dimensional array, can scare the heck out of us, make us hungry, inspire sexual passion,

and cause us to sob. Our minds have evolved in a world in which it pays to take seriously what you see.

In any case, caution is a particularly good strategy when faced with a three-dimensional object. For any such object there are multiple cues to what it really is; these include what it looks like as well as what people tell you about it. But trusting your eyes, as a general rule, is wise because the surface appearance of an object is an excellent cue as to what it really is.

In the novel *Empire Falls*, Richard Russo describes a troubled teenager who tries to goad his girlfriend into taking a revolver and then putting it against her head and pulling the trigger, assuring her that there are no bullets in the cylinder: “If you knew by the evidence of your own senses that the gun wasn’t loaded, then you had nothing to fear.” The teenager is wrong, however; the rational act is *not* to play such a game, because the benefits of being right are so slight and the cost of being wrong is so high. The risks are much lower in the psychology experiment, of course, but the moral still holds: Better safe than sorry.

Although I am defending the rationality of disgust in general, not every disgust reaction makes sense. You can be *too* safe, after all; there are people who refuse to handle money, touch doorknobs in public places, or use toilets outside their own house. And just consider the irrationality—not to mention the immorality—of being disgusted by women, or Jews, or blacks. Although disgust might have adaptive origins, it can go seriously awry.

#### UNIVERSALS OF DISGUST

No discussion of the development of disgust would be complete without some mention of Freud, who lumped disgust together with shame and morality as “reaction formations,” which occur to block the consummation of unconscious urges. We really *want* to eat feces,

have sex with our siblings, cavort with corpses, and so on, and reaction formations such as disgust exist to block these libidinal desires.

There has to be a grain of truth here. If these behaviors were inconceivable, then there would be no need for emotions to evolve (either through biological evolution or cultural development) to block them. An intuitive disgust toward drinking urine would not have emerged if it weren't that urine would otherwise fall into the range of conceivable things to drink. But this is a far cry from saying that we have *specific* desires toward the disgusting, a claim that is scarcely plausible.

A different theory derives from the work of the anthropologist Mary Douglas on pollution and taboo. She views polluting substances as those that are anomalous and do not fall into prevailing structures. Bats are disgusting, for instance, because they are freaky—they are mammals that fly, and mammals *shouldn't* fly. A person with too much body hair is disgusting because fur is a marker of nonhuman animals; missing limbs may evoke disgust because people typically have all of their limbs. But this proposal was never intended to explain disgust in general and it would do a poor job of doing so. Not all anomalies are disgusting: dolphins are mammals that swim, as freaky as those that fly, but we do not find dolphins disgusting. And consider other anomalies: a telephone baked inside a cake, a chicken sitting on the throne of a king, or a helicopter made out of peanut brittle. These are weird, but the weirdness does not inspire disgust. And the prototypical target of disgust, feces, is not at all anomalous.

Another theory roots the development of disgust in social learning. Many psychologists, influenced by Freud, believe that children's disgust about bodily waste emerges as the product of toilet training. You take a child who is initially neutral about bodily products, the story goes, and then you instill shame and humiliation over his or her messes, through angry words and horrified expressions. This is internalized, until the child's own feces and everyone else's is associ-



ated with the emotion of disgust. Same thing for blood and vomit, and for things that are considered disgusting within a particular culture, such as slugs for many North Americans.

But this is implausible for many reasons. For a start, things have changed since Freud. In my neighborhood, at least, parents don't toilet-train children by grimacing, gagging, and telling them that they are horrid creatures. Many modern parents are themselves socialized to be careful not to make their children feel ashamed by their excretion, in large part because experts in child care are staunch believers in social learning. Consider this typical example from one of the best child-care books around, Penelope Leach's *Your Baby and Child*:

*Don't try to make the child share your adult disgust at feces.* He just discovered that they come out of him. He sees them as an interesting product belonging to him. If you rush to empty the potty; change him with fastidious fingertips and wrinkled nose; and are angry when he examines or smears the contents of his potty, you will hurt his feelings. You don't have to pretend to share his pleasurable interest—discovering that adults don't play with feces is part of growing up—but don't try to make him feel they are dirty and disgusting. If he knows his feces are disgusting to you, he will feel that you think he is disgusting too.

If the social-learning account of disgust were right, you would think that modern parents would have created a race of children liberated from disgust, free to touch, sniff, and devour all the objects and substances that the world has to offer.

In fact, there is no evidence that the emergence of disgust has anything to do with toilet training. Everyone is disgusted by much the same things; it does not matter whether you are raised by psychoanalysts, contemporary child-care experts, or hunter-gatherers.

A proponent of the social-learning theory might suggest that adults try to block our disgust . . . but fail. We just can't help it, our revulsion shows in subtle and unconscious ways, children pick up these cues, and learn to be disgusted themselves. But this subtle-cueing theory is not plausible. Although children have impressive abilities to understand the minds of others, they are not *literally* mindreaders, and there is no evidence that they have the power to discern such deeply hidden emotions on the part of adults. And even if they had such a power, their response to feces and the like would be way out of proportion. After all, parents get red in the face and scream at children about the dangers of licking electrical sockets and stepping off the sidewalk onto the street, and the outcome is not disgust at or fear of sockets and cars. Why then would there be such an excessive response to subtle cues during toilet training? To explain this discrepancy, you would have to say that children are born with a predisposition to grow disgusted by some things and not others—but if this is true, do you need the social-learning story at all?

A better theory of the development of disgust takes as its starting point the observation of Darwin: disgust is at root a biological adaptation that evolved as a result of the benefits it gave our ancestors long ago.

This evolutionary theory leaves plenty of room for development. Not every ability that has evolved shows up early in a person's life. The physical ability to conceive children is an obvious example of this, along with the corresponding emotional and motivational systems that drive us to seek out and evaluate sexual partners. In the case of disgust, natural selection would not be so cruel as to curse babies to lie in misery, unable to move away from their own waste and perpetually disgusted as a result. And so it is not surprising that children in their first couple of years of life, in a situation where their mobility is limited and in which adults control their food intake, are free of disgust.

And young children really are disgust-free. Any parent will observe that they are entirely mellow about their own waste products. Rozin and his colleagues find that up until their third birthday, children will happily gobble up most anything they are offered—including grasshoppers and something they believe to be “dog doo” (it was actually a combination of peanut butter and cheese).

Once the innate disgust reaction kicks in, certain substances are universally found to be disgusting. The onset of disgust can happen quite suddenly. It is a lot like fear. There is a point in development at which previously fearless children often become intensely frightened of certain things—darkness, enclosed spaces, and spiders, for instance (which are the very same things that other primates are afraid of).

I first saw disgust emerge in Max when he was about three and a half years of age. I was changing my son Zachary’s diaper on the living-room floor, and Max stood above me, watching with curiosity. The diaper was rather pungent, and Max looked unhappy and then started to gag. I asked him what was wrong, and he said, “My tummy hurts.” I asked him why, and he said that he didn’t know, and finally I gently moved him to another room. Surprisingly, Max was disgusted before he had any conscious insight into what he was disgusted by. Zachary began to show disgust at almost exactly the same age. He started to complain about certain bad smells, to wrinkle up his nose, and so on.

Disgust also requires learning. Unchanging facts about the world are plausible candidates for being hard-wired into the brain. This includes the foundational appreciation of objects and people, because wherever you are, it pays to think about the world in terms of objects that are solid and persist through time, and people who have goals and emotions. But other facts about the world change over the course of generations, too fast for biological evolution to keep up with. The personalities of the specific people you meet have to be

learned, and so does the spatial environment in which you live. Similarly, if disgust is to serve its role of steering us away from bad meat, learning needs to be involved, since the sorts of foods that are toxic vary according to the local conditions. So although some things, such as feces, are universally repellent as foods because these are always bad for you to eat, there is going to be some variation as well, since the danger level of certain foods in a given environment cannot be specified by natural selection.

#### HOW TO DISGUST A CHILD

You might think, then, that the task for the evolutionary biologist, the developmental psychologist, and the cultural anthropologist is to find out what is universal, and then to answer the question: How do children learn what things are disgusting?

But this is not the right question. The class of things to learn about is the nondisgusting. Steven Pinker has observed, "Of all the parts of all the animals in creation, people eat an infinitesimal fraction, and everything else is untouchable. Many Americans eat only the skeletal muscle of cattle, chickens, swine, and a few fish. Other parts, like guts, brains, kidneys, eyes, and feet, are beyond the pale, and so is any part of any animal not on the list: dogs, pigeons, jellyfish, slugs, toads, insects, and the other millions of animal species." And Darwin also observed how cautious we are toward novel foods: "It is remarkable how readily and instantly retching or actual vomiting is induced in some persons by the mere idea of having partaken in any unusual food, as of an animal which is not commonly eaten, though there is nothing in such food to cause the stomach to reject it."

The question to ask, then, is: How does the child learn what is *not* disgusting?

Consider the following answer, in part based on research by the anthropologist Elizabeth Cashdan. Children start off without dis-

gust. But by roughly their third birthday children get picky, and prefer to only eat foods that they have eaten previously. By their fourth birthday they are even pickier. By then, all meat that has not been previously experienced elicits disgust. And at this point, they have much the same intuitions about disgusting foods as adults do. They know that milk and potato chips make for fine foods, but when offered a grasshopper or “dog doo,” they decline.

Since parents control young children’s intake, this early period of openness to new foods allows them to shape their child’s future preferences. This is what psychologists call a “sensitive period”—a span of time during which learning can most easily take place. Cashdan discovered that children who are introduced to solid foods unusually late tended to eat from a smaller selection of foods during childhood, presumably because the duration of this sensitive period was shortened; they had less time to try out new foods.

Are children’s reactions here really disgust, in the same sense that the adults’ reaction counts as disgust? The key test here has to do with contamination: if something is thought of as disgusting, then it should taint anything that it touches. To explore whether children understand this, the psychologist Michael Siegal and his colleagues did a series of studies with Australian three- and four-year-olds.

In one study, during snack time, the children were shown a drink with a cockroach floating on top of it. The adult said, “Here’s some juice. Oh! It has a cockroach in it.” And then the adult removed the cockroach, and asked, “Is the juice okay or not okay to drink?” Most of the children said it was not okay. They also said that other children would not want to drink the contaminated drink, and that other children would prefer to drink water than contaminated chocolate milk, even though chocolate milk is normally preferable.

In another study, children were tested on their moral reasoning in the realm of contamination. Jean Piaget and other developmental

psychologists have maintained that young children do not appreciate the difference between a lie and a mistake—they are said to regard all false statements as lies. To explore this, an experiment was done in which children were shown moldy bread, and then the experimenter put Vegemite (an Australian breakfast spread) over the mold so as to hide it. There were two teddy bears present during this event, and children were told two scenarios and asked to differentiate between a lie and a mistake:

This bear didn't see the mold on the bread. He told a friend that it was okay to eat. Did the bear lie or make a mistake?  
This bear did see the mold on the bread. He told a friend that it was okay to eat. Did the bear make a mistake or lie?

Young children tended to get this right: they understood that the first bear made a mistake and the second bear lied. And they later described the second bear, but not the first, as “naughty.”

It is revealing that this fine-tuned moral sensitivity seems to exist only in the domain of contamination. In parallel situations, children didn't do as well. When, instead of moldy bread, there is a snake in a house and one bear sees the snake but says there is no snake, young children are nowhere near as good as figuring out this bear is a liar.

Expanding one's food preferences past the age of four is fraught with difficulty, even for adults. Research in this area has been done with military personnel, prompted by practical considerations: during World War II, American pilots in the Pacific went hungry because they refused to eat insects and toads, even though they had been explicitly taught that these foods were safe. Also, you can actually order military personnel, unlike college undergraduates, to do unpleasant things.

The consistent finding is that while you can force adults to eat novel foods—fried grasshoppers in one study—they are not happy

about it. When adults do willingly try new foods, the foods are not really that different from old foods: if you like bread, and you like chocolate, you might cheerfully try chocolate bread. (In fact, up until the age of four, American children seem to have the rule that if they like A and they like B, they will like A+B, leading to interesting combinations such as whipped cream and hamburger or ice cream with ketchup on top.) We also sometimes try new foods if there is some other motivation at work, such as a desire to look tough, or to fit into a new group, or, of course, intense hunger. And of all the new foods to try, the hardest to stomach are those made of meat.

I had my own experience with this when I took my children to an edible insect show at a museum in New Haven. On stage, the “chef” fried up crickets in garlic and oil, placed them in little cups on top of some orzo pasta, and passed them around the audience. (He then said, repeatedly, “Bug Appetit!”) Just about all children happily dug in. Some adults did too, but many refused, and one woman looked into her cup and *screamed*. I was confident that I would indulge, but when I saw the crickets, I froze, and had to put the cup down. Intellectually I had no problems, but I could not bring myself to act. Never underestimate the power of disgust.

#### THE SCOPE OF DISGUST

Disgust goes beyond the range of food, extending to death, violations of the “body envelope” (amputations, surgery, and so on), bad hygiene, and certain sex acts. Consider this list of scenarios, given to college undergraduates who were asked to rate them on how disgusting they are:

You see a bowel movement left unflushed in a public toilet.  
Your friend’s pet cat dies, and you have to pick up the dead  
body with your bare hands.

You hear about an adult woman who has sex with her father.  
You discover that a friend of yours changes underwear only  
once a week.  
You see a man with his intestines exposed after an accident.

All of these items were judged as highly disgusting. Why? What property do they share?

The most elegant theory has been developed by Rozin, originally with April Fallon, and later with Jonathan Haidt and Robert McCauley. He suggests that disgust starts off as a rejection response to certain potential foods, and that it has evolved through natural selection for that purpose. But in the course of development it moves from a defense of the physical body to a more abstract defense of the soul. In particular, anything that reminds us that we are animals elicits disgust:

Humans must eat, excrete, and have sex, just like animals. Each culture prescribes the proper way to perform these actions—by, for example, placing most animals off limits as potential foods and most people off limits as potential sexual partners. People who ignore these prescriptions are reviled as disgusting and animal-like. Furthermore, humans are like animals in having fragile body envelopes that, when breached, reveal blood and soft viscera; and human bodies, like animal bodies, die. Envelope violations and death are disgusting because they are uncomfortable reminders of our animal vulnerability. Finally, hygienic rules govern the proper use and maintenance of the human body, and the failure to meet these culturally defined standards places a person below the level of humans. Insofar as humans behave like animals, the distinction between human and animals is blurred, and we see ourselves as lowered, debased, and (perhaps most critically) mortal.

Because of this, Rozin describes disgust as “the body and soul emotion.”



There are two deep insights here. The first is that the extension of disgust is a “preadaptation,” something that has evolved for one purpose and is subsequently used for another purpose. The second is that we can be disgusted by people by virtue of our kinship to animals; we are not angels; we are meaty things.

But Rozin’s theory is too conceptual, too cognitive. It misses the physicality, the sensuality, of disgust. It is just not such a smart emotion. Simply being reminded—intellectually—of the fact we are animals is neither necessary or sufficient for disgust. Humans breathe and sleep, after all, “just like animals.” But breathing and sleeping are not disgusting. Looking at a brain scan or an X-ray is a stark and striking reminder of our physical nature, but these are not disgusting activities. Ruminating that I will one day die—just like any other animal—might make me sad, but it does not normally disgust me. In general, being reminded of our animal nature is not, by itself, disgusting.

A more plausible view is that death, bad hygiene, body-envelope violations, and certain sex acts disgust us simply because we perceive them, at a basic sensory level, in much the same way we perceive rotten meat and decaying flesh. This is most obvious in connection with death. Death itself is not disgusting. It is corpses that disgust us. Corpses are revolting not because their presence forces us to contemplate in some airy way our mortal nature. Corpses disgust us because they are rotting flesh. Violations of the bodily envelope disgust us not because they show us the fragility of our corporeal state, or because they indicate our kinship with other creatures. Such violations disgust us because they involve the very things that disgust has evolved to keep us away from: blood, pus, and soft tissue. Bad hygiene does not offend because we see the person as animal-like in his behavior. It offends because someone with bad hygiene smells bad, a smell disturbingly reminiscent of bad food. (There may be an additional consideration here, in that bad hygiene is a disease.) Finally, sex typically involves contact with

parts of the body associated with urine and feces, and so it is a particularly fecund area for disgust.

The argument so far is that disgust is limited to sensual domains—to a class of things that strike our senses in a certain way; it is not a thoughtful cognitive process. But the language of disgust does seem to apply in a broader figurative way, far afield of the world of meat and waste:

That idea really *stinks*.

The way he weasels his way out of doing any work *makes me sick*.

The high pay of CEOs is *revolting*.

In just a few months, I heard the word “disgusting” used to describe:

The president's tax plan

Someone writing a negative review of a grant proposal because  
he disliked the applicant

Microsoft

The high cost of prepared spaghetti sauce

When people are asked to list what they find disgusting, they include not only the usual suspects (feces and the like), but also certain types of people, such as con men, Nazis, sexists, liberals, and conservatives. In a seminar on this topic, one graduate student insisted that a certain politician's statements during a televised debate nauseated her; had she continued to watch the debate, she was definitely “going to barf.”

This all seems to indicate that disgust can be highly abstract and intellectual. But I am skeptical. My hunch is that in these statements “disgust” is a metaphor. Saying that we are disgusted by a tax plan is like saying that we are thirsty for knowledge or lusting after a new

car. After all, if you actually observe people's faces and actions during heated political or academic discourse, you will witness a lot of anger, even hate, but rarely, if ever, the facial or emotive signs of disgust.

To say that this is a metaphor is not to dismiss it as unimportant. It is a pervasive metaphor, and one of considerable power. As Miller notes, "No other emotion, not even hatred, paints its object so unflatteringly." Suppose I wish to attack a certain theory of child development. It is one thing to describe it as stupid or incoherent or to go on about how angry it makes me. But to describe it as disgusting ups the ante. It renders the thing that I am talking about objectively and concretely vile, and it taints whoever endorses it.

When you say that such-and-so is disgusting, you give the impression that this would be apparent to any normal observer. It is like saying that it is bigger than a breadbox. To say that something is disgusting is to imply, "If you were to see it, you would find it disgusting too." (If you don't, there is something wrong *with you*.) There is no response to the language of disgust. It is a conversation stopper.

An example of how disgust can be used to attack certain views is from the ethicist Leon Kass's recent discussion of human cloning. After conceding that "revulsion is not an argument," he goes on to say:

In some crucial cases, however, repugnance is the emotional expression of deep wisdom, beyond wisdom's power completely to articulate it. Can anyone really give an argument fully adequate to the horror that is father-daughter incest (even with consent), or bestiality, or the mutilation of a corpse, or the rape or murder of another human being? Would anybody's failure to give full rational justification for his revulsion at these practices make that revulsion ethically suspect?

I suggest that our repugnance at human cloning belongs in this category. We are repelled by the prospect of cloning human beings not because of the strangeness or the novelty of the undertaking, but

because we intuit and we feel, immediately and without argument, the violation of things that we rightfully hold dear.

Miller himself makes a similar argument, in his contribution to a series of essays sparked by the successful cloning of Dolly, a sheep.

I am, it should by now be clear, disgusted, even revolted by the idea of cloning: not just the idea of cloning humans, but the idea of cloning sheep too. I am quite frankly disgusted by Dolly. . . . All I mean to say is that there are certain large constraints on being human and we have certain emotions that tell us when we are pressing against these constraints in a dangerous way. This is part of the job that disgust, horror, and the sense of the uncanny do; they tell us when we are leaving the human for something else; either downward toward the material, mechanical, and bestial; or upward toward the realm of spirit or the world of pure hokum.

But it is just not true that we react to cloning in the same way that we do to incest, corpse mutilation, and bestiality. Many people think human cloning is a bad idea, even a terrible idea, but this is not the same as feeling revulsion. Perhaps you took the kids to see Arnold Schwarzenegger in the popular movie *The Sixth Day*? (Arnold goes to clone the family pet, and then, through sinister machinations, *he* gets cloned!) I would be surprised if Columbia Pictures were to release a popular action film around the theme of bestiality. Indeed, when Peter Singer in an article called "Heavy Petting" dared to discuss the moral issues surrounding bestiality (in order to make a point about the inconsistency in how we treat animals), the response was ridicule and anger. Certain topics are taboo. Cloning is not one of them.

I do not doubt that Kass, Miller, and many others are convinced that cloning is wrong, and that their conviction might be the result of an intuition that they might not be able fully to articulate. But

unless they are unusual, their responses to cloning are not revulsion, repugnance, or disgust as we normally experience them.

I suspect that Kass is well aware of this. He is not reminding us of our disgust; he is trying to *elicit* it, through phrases such as “a radical form of child abuse,” “our horror at human cloning,” and so on. He is trying to persuade people that they *should* respond to cloning in this way, and that it is a moral failing if they do not. If most people think of cloning as akin to bestiality, then what sort of monster are you to favor it? As he intones ominously, “Shallow are the souls that have forgotten how to shudder.”

Even if Kass were right, and we really did find human cloning revolting, it is not clear what would follow from this. Contrary to what Kass and Miller imply, revulsion is not always the expression of deep wisdom, nor is it a useful tool for detecting when we are violating constraints on being human. It can be a cruel and stupid emotion. Through American history, many have found the notion of interracial sex to be disgusting, a reaction that has found its expression in lynching. And revulsion has often found targets in groups of people—women, homosexuals, Jews, untouchables, and so on. Of the emotions that one could use as a moral guide, I would prefer sympathy, compassion, and pity.

#### DISGUSTING PEOPLE

Would you wear someone else's clothes? What if the person has experienced an amputation, or suffered from a disease like tuberculosis? What about a moral taint—would you wear Hitler's sweater? Timothy McVeigh's baseball cap? Many people say no. In fact, even if the item is fully cleaned and comes from a normal, healthy, morally acceptable person, many of us still prefer not to wear a stranger's clothes. We are easily disgusted by other people. This propensity has troubling, sometimes horrific, social consequences.

The philosopher Martha Nussbaum offers the following summary of how disgust has been used as a weapon:

Thus, throughout history, certain disgust properties—sliminess, bad smell, stickiness, decay, foulness—have repeatedly and monotonously been associated with, indeed projected onto, groups by reference to whom privileged groups seek to define their superior human status. Jews, women, homosexuals, untouchables, lower-class people—all of these are imagined as tainted by the dirt of the body.

The Jews have long been a target of disgust. First Jews themselves have been said to be disgusting. Voltaire wrote, “The Jews were more subject to leprosy than any other people living in hot climates, because they had neither linen, nor domestic baths. These people were so negligent of cleanliness and the decencies of life that their legislators were obliged to make a law to compel them even to wash their hands.” It was claimed that Jewish males menstruated. Second, Jews did disgusting things to cherished people and objects. They used the blood of Christian children in rituals. In 1215, the doctrine of transmutation was established as dogma, and in prompt response to this, Jews were said to have desecrated the Host, spitting and defecating on it.

The perception of certain groups as disgusting leads directly to the topic of genocide. There are many causes of genocide, including the belief that members of the targeted group are enemies of God, or an ongoing threat, or that they have done some terrible wrong in the past, one that demands vengeance. But disgust has a special status. It is a remarkable fact of human psychology that disgust is a very effective way to motivate people towards mass murder, and appears to have been used in every genocide in recorded history.

This might seem puzzling. It makes sense to tell people that their targets are dangerous, or that their targets did terrible things to them in the past. But why tell them that these people are disgusting?

The simplest answer is that disgust is a negative emotion, one associated with repugnant things, and by stating that certain people are disgusting, you inspire negative thoughts toward them. But a better answer goes right to the heart of intuitive dualism. Disgust is a response to people's bodies, not to their souls. If you see people as souls, they have moral worth: You can hate them and hold them responsible; you can view them as evil; you can love them and forgive them, and see them as blessed. They fall within the moral circle. But if you see them solely as bodies, they lose any moral weight. Empathy does not extend to them. And so dictators and warmongers have come across the insight, over and over again, that you can get people to commit the most terrible atrocities using the tool of disgust.

The clearest modern example of how this works comes from Nazi propaganda, which described the Jews as dirty, filthy, disease-ridden; they were portrayed as rats, garbage, and bacillus, agents of infection. As Nussbaum put it, "The stock image of the Jew, in anti-Semitic propaganda, was that of a being disgustingly soft and porous, receptive of fluid and sticky, womanlike in its oozy sliminess, a foul parasite inside the clean body of the German male self." The Turks said similar things about the Armenians in the 1920s, as did the Tutsis about the Hutus in Rwanda in the 1990s.

One strategy of oppressors during acts of genocide is to arrange the world so as to make their victims act and appear disgusting. In the course of starving Armenian families nearly to death, their tormentors would speak with disdain about the "clawlike hands" of the Armenians, fighting for food like "ravenous dogs." And the Nazis, having trapped the Jews in conditions in which hygiene was difficult or impossible—as in the concentration camps and, to a lesser extent, the ghettos—would speak with satisfaction of their filthiness. Primo Levi describes Jews' being denied access to toilets, and the reaction that this prompted:

The SS escort did not hide their amusement at the sight of men and women squatting wherever they could, on the platforms and in the middle of the tracks, and the German passengers openly expressed their disgust: people like this deserve their fate, look at how they behave. These are not *Menschen*, human beings, but animals, it's as clear as day.

Terrence Des Pres has argued that many of those who survived the concentration camps were people who took great care to keep themselves as clean as possible, so as to retain their dignity, both to themselves and to others, in the face of attempts to make them appear like beasts.

Disgust is not the only way to diminish people. One can also try to rob them of individuality—describing them as “cargo,” designating them by number, and so on. (Hence the wisdom of the framers of the Convention on the Rights of the Child to state that every child has the right to a proper name.) Humor can also be used to dehumanize by making people laughable. During the Cultural Revolution, people were paraded through the street with dunce caps, or made to wear placards with degrading slogans on them. But disgust is the tool usually used to dehumanize; it is visceral and potent.

Disgust can be used as well for more exalted purposes. Some have tried to motivate a spiritual existence, or a life of the soul, by eliciting a negative reaction to our material bodies. St. Augustine was greatly influenced by Cicero's vivid image of Etruscan pirates' torture of prisoners by strapping a corpse to them face to face. This, Augustine maintained, is the fate of the soul, chained to a physical body as one would be chained to a rotting corpse.

What are the limits to disgust?

Consider sex. Just as with food, it would be a mistake to ask which sex acts are disgusting. There are just too many. There is sex with animals, sex with children and babies, sex with dead bodies.



Some are revolted by homosexual sex, by sex of the old or even middle-aged, by sex between people of different races, by sex involving people with disabilities; some would be appalled to observe masturbation, or certain sexual activities or even certain positions. Even cheerful and conventional heterosexual sex between consenting adults, even very attractive consenting adults, can easily be seen as disgusting at least some of the time. To try to list all the disgusting sexual acts perversion by perversion, position by position, and ascertain what property they share is the wrong research project.

On a parallel with food, the right question is: Which sex acts are *not* disgusting? The humorist Stephen Fry provides one answer. After outlining what he sees as the bestial nature of sexual intimacy—"I would be greatly in the debt of the man who could tell me what would ever be appealing about those damp, dark, foul-smelling and revoltingly tufted areas of the body that constitute the main dishes in the banquet of love"—he notes that sexual arousal overrides any more civilized reticence: "Once under the influence of the drugs supplied by one's own body, there is no limit to the indignities, indecencies, and bestialities to which the most usually rational and graceful of us will sink." In other words, lust can trump disgust.

At this point, we can clear up something that puzzled Freud, that "a man who will kiss a pretty girl's mouth passionately, may perhaps be disgusted by the idea of using her tooth-brush." Freud used this as an example of how irrational the emotion of disgust is, but it is easily explained: In the act of kissing, sexual arousal plays a role, and this blocks disgust. There is a parallel here with hunger; people who are starving will eat most anything, including human flesh.

Lust has its own moral problems. It is hardly a new insight that there can be a tension between viewing someone with sexual desire and viewing them as a person with moral worth. Feminists have long written about the immorality of seeing someone "as an object," and I think the phrase here is particularly apt. Obviously, lust and

love can coexist, but it is disturbing how easily lust, like disgust, can block an appreciation of a person as a person. The worry here was summed up, with some bitterness, by Marilyn Monroe, who once said, "I have never liked sex. I do not think I ever will. It seems just the opposite of love."

What about love, then? Love defeats disgust as well, but in a very different way. When you love a person, you see the person not as a body but as a soul. In his studies of why some marriages last and others break up, the psychologist John Gottman found the major signal that a marriage was in trouble. It is not heated argument or stony silence. It is when disgust, and its kin, contempt, shows itself.

Christian theology is chock full of saints and revered people who express their love of humanity and God by doing things that others find repulsive, such as washing the bodies of filthy strangers, caring for lepers, and, in the case of St. Catherine, engaging in acts that I cannot bear to describe. But there are more mundane examples of relatively repugnant acts that we do out of love. Changing the diaper of a child is a common one, as is caring for an elderly relative. Disgust is not absent in such cases, but it is diminished. I found it much easier to change the diaper of my own child than of another's, and much of this, I think, is because of love. In his discussion of how doctors operate on patients, the surgeon Atul Gawande describes an attitude of "tenderness and aestheticism" toward the body as both a person deserving of respect and a problem to be solved. (Note, incidentally, that disgust is just one emotion that needs to be tempered during medical procedures; sexual desire is another.)

There are other, more mundane psychological processes whereby disgust is set aside. There is habituation—the dullness of a response upon repeated exposures. You get used to certain things, and they come to bother you less. And people also exercise some control over how they encounter the potentially disgusting. When changing a

diaper, they are careful to avert their eyes, breathe through the mouth, and think of other things. On a more cognitive level, one really can go mad worrying about rat droppings on one's food, the true composition of hot dogs, and so on, and we just try to not dwell on such matters. This is not always successful: On a trip to London, I had the bad luck to read a newspaper report describing how scientists analyzed bowls of beer nuts from British pubs and discovered that they are inevitably covered with a thin coating of urine, due to drinkers who are less than fastidious about washing their hands after using the toilet. I was unable to avoid dwelling on this while in pubs, and often stared unhappily as others gobbled down these snacks.

Finally, there are social structures in place that have emerged in order to shield the disgusting from us, to hide it from our eyes, or to reassure us about borderline cases. This is a function of manners. One example comes from a book of conduct written in 1558, which states: "You should not offer your handkerchief to anyone unless it has been freshly washed. . . nor is it seemly, to spread out your handkerchief and peer into it as if pearls and rubies might have fallen out of your head." It is a function of certain religion laws, such as the rule that if a kosher food is somehow contaminated, the food remains acceptable so long as the contaminant is less than one sixtieth the volume of the total. And it is a function of euphemism. Americans and Europeans go to great pains to hide the origins of our foods both by the way we prepare them and by the way we speak of them, using terms like "beef" and "pork." (A friend of mine tells the story of her daughter, who once observed with some fascination, "Isn't it interesting that we call this food 'lamb'? That's the same name as real lambs!" She was horrified to hear that this is not coincidental, and is still—more than a decade later—a vegetarian.)

Other social structures exist to present us with the disgusting in carefully controlled doses. Universally disgusting things often show

up in rituals. The Nuer bathe in cow urine, the Zunis have a ritual in which they eat dog feces, and members of the Skull and Bones club at Yale are rumored to have an initiation rite that involves lying naked in a coffin, buried in mud. Doing something that is unpleasant serves as a test of one's loyalty, and it establishes group solidarity through shared suffering. Contact with disgusting substances serves as an excellent mechanism through which to establish such suffering.

Overall, disgust does exert a bit of a fascination. Jonathan Haidt points out that when you ask someone, "Do you want to see something disgusting?" the answer is almost always a cautious "Yes." All negative emotions have this appeal. We poke at sores, go on amusement park rides that terrify us, see tragedies that make us cry. Freudians might see some pathology in all this, but I am more inclined to credit Rozin's "benign masochism" theory, which is that we train ourselves to encounter the world—to see what we can do and what our limits are—by sometimes confronting ourselves with negative experiences that are under our control and that pose no real threat.

Finally, disgust is a great source of humor. Some commentators see gross-out humor as a recent invention, but classic Greek comedies were filled with this sort of thing; there was no shortage of bathroom humor in Aristophanes. Any good theory of comedy has to explain why.

#### THE UNBEARABLE LIGHTNESS OF BEAN

Before we ask the question of what disgust and humor have in common, let's pursue a broader question: What makes us laugh? A popular book on the brain makes this confident claim: "We laugh when there is incongruity between what we expect and what actually happens, unless the outcome is frightening." But this cannot be right. Incongruity is clearly an aspect of humor, but it is not enough. Finding a shoe in a dishwasher is incongruous, and so is snow in

July, but they are not in and of themselves funny. The incongruity has to be of a certain type.

Arthur Koestler narrowed down the incongruity theory by pointing out that the essence of humor involves a shift in perspective—the punch line is incongruous within the original frame of reasoning but makes sense within a different frame, as in these examples:

When is a door not a door?

*When it is a jar!*

Do you know beer makes you smarter?

*It made Budweiser!*

The humor here comes from shifts in perspective. Suppose the response to the first question were “When it is a chicken!” This is incongruous, but not funny, because it makes no sense at all. But the double meaning in the punch line “a jar” makes it a joke.

We are getting closer, but there is a problem with this theory of humor. These jokes are not funny. They elicit groans. If they make someone laugh, they most likely do so just because they are so bad. This sort of verbal humor—along with knock-knock jokes, light bulb jokes, and elephant jokes—is at best clever. They are joke wannabes, meeting the formal criteria but lacking the certain ingredient that makes a joke truly funny.

The missing ingredient is a certain type of wickedness. No serious student of laughter could miss its cruel nature. The psychologist Robert Provine notes that despite laughter’s sometimes gentle reputation, it can be an outrageously vicious sound. Not so long ago, the elite would find it endlessly amusing to visit insane asylums and laugh at the inmates; physical and mental deformity has always been a source of amusement. There was no shortage of laughter at public executions and floggings, and the sound is often an accompaniment

to raping, looting, and killing in time of war. During the massacre of high school students at Littleton, Colorado, the killers laughed. I once saw a terrible picture of a small Jewish boy in the Germany of World War II, on his knees, forced to scrub the street; the adults around him were laughing and jeering. Many reports of torture involve humiliating the victim in ways that are comical to his or her tormentors. A veteran of World War II reported how his unit found a hiding Japanese soldier and used him for target practice, firing at him as he ran frantically around a clearing: "They found his movements hilarious and their laughter slowed down their eventual killing of him. They were cheered by the incident and joked about it for days." This same aggression shows up even in primate equivalents of this human act. Gangs of monkeys make laughter-like sounds when they attack a common enemy. And chimpanzees, like humans, make laughing sounds when acting in mock aggression.

We're getting there, but it is too simple to see humor as a shifting frame of reference with an added dash of cruelty. It needs to be the right type of cruelty. The comic Mel Brooks once said, "Tragedy is when I cut my finger. Comedy is when you fall into an open sewer and die." And Dave Barry puts it best in this advice to aspiring humor writers:

"The most important humor truth of all is that to really see the humor in a situation, you have to have perspective. 'Perspective' is derived from two ancient Greek words: 'persp' meaning 'something bad that happens to somebody else' and 'ective' meaning 'ideally someone like Donald Trump.'"

The important ingredient here is a loss of dignity; someone is knocked off his pedestal, brought down a peg. Laughter can serve as a weapon, one that can be used by a mob. It is contagious and involuntary; it has great subversive power, so much so that Plato thought

it should be banned from the state. But also, in gentler hands, it can signal playfulness and establish friendship. You can puncture your own dignity, and can laugh—and make others laugh—at yourself.

Humor can also have a particularly direct relationship to the interplay between bodies and souls. Humor involves a shift in perspective, and one of the most striking shifts is when we move from seeing someone as a sentient being, a soul, to seeing the person as merely a body. Henri Bergson proposed that humor is based on this body/soul duality—what he called “something mechanical encrusted upon the living” and what Koestler called “the dualism of subtle mind and inert matter.” Plainly a lot of humor has nothing to do with bodies and souls, but there is one domain in which this dualism reigns supreme. This is slapstick.

In his study of American slapstick, Alan Dale notes that every funny act falls into one of two categories—the blow and the fall. The canonical blow is a pie in the face and the canonical fall is caused by a banana peel, but the categories are quite broad, corresponding to either an intentional assault upon the hero’s dignity (blow) or its involuntary collapse (fall). In *Dumb and Dumber*, Jeff Daniels succumbs to a violent attack of diarrhea owing to the comically abundant dose of laxatives that Jim Carrey has slipped into his food. This is a blow. In *Bean*, Rowan Atkinson is admiring a priceless work of art, smiling and humming cheerfully to himself, when he suddenly and explosively sneezes all over it. This is a fall.

Disgust, religion, and slapstick all traffic in what Dale calls “the debasing effect of the body on the soul.” But they do so in different ways. Disgust focuses on the body, dismissing the soul; religion, at least some of the time, focuses on the soul and rejects the body. And slapstick is the richest of all, as it deals with both at the same time, showing a person with feeling and goals trapped in a treacherous physical shell. As Dale puts it, slapstick has a “secular sense of the soul encased in the body that only holds it back.”

This might seem like a fancy analysis of why we laugh when someone gets hit by a pie or slips on a banana peel. But without this duality, slapstick fails—there is no humor at all. It is revealing, then, that young children immediately appreciate this sort of humor. If you are in a bind and need to make a two-year-old laugh, the best way to do so is to adopt a surprised expression and fall on your ass.