





OVER MIND EAT

We love animals,
yet most of us
also eat them.

Research is
revealing the
cognitive tricks
we use to resolve
this omnivore's
dilemma

By Marta Zaraska

Consider the pig. Perhaps your mouth is already watering at the thought of crispy bacon, juicy ribs, savory ham and spicy sausage. The United Nations Food and Agriculture Organization reports that people eat pork in more places worldwide than any other meat, with it making up 36 percent of all carnivorous consumption. Americans consume about 50 pounds per person every year—and that is nothing compared with China, where people eat twice as much.

But in some communities, pig meat is untouchable. Consumption is banned by both Islam and Judaism. And some people regard pigs—particularly the diminutive potbelly variety—as adorable pets. Remarkably social and much cleaner than their reputations suggest, pigs are very intelligent. Savvy swine play chase, operate

thermostats in their pens and can even learn simple computer games. A 2014 study in *Animal Cognition* revealed that pigs could understand pointing cues from humans in a way similar to what dogs do.

If at this point you are starting to feel a little uneasy about your BLT, you are not alone. This discomfort stems from a phenomenon that scientists have dubbed “the meat paradox.” It comes about when people like to eat meat but do not like to think of animals dying to provide it. “If you scratch the surface, everybody seems to be a bit uncomfortable about eating meat,” explains Brock Bastian, a psychologist at the University of Melbourne in Australia. Fundamentally, if you like all creatures great and small, the idea of causing them harm is at least a little disturbing. “One of the most deeply and widely held moral concerns is to prevent harm,” Bastian says. “If an animal died of natural causes, I doubt that people would feel conflict over eating it.”

The more someone likes meat and likes animals, the more pronounced the problem becomes. The perception that you can be an animal lover and an animal eater at the same time is ubiquitous; it drives the cage-free, free-range movement in the modern meat industry. In one study, 81 percent of Ohioans said that the well-being of farm animals is just as important to them as the well-being of pets. Americans spend fortunes on their furry friends: in 2015 an estimated \$60 billion. Yet that does not stop them from consuming about nine billion animals per year.

The meat paradox is an avenue for understanding cognitive dissonance, a psychologically unpleasant state that arises when we hold dear several mutually inconsistent beliefs or when there is a gap between our attitudes and our behavior. Stanford University psychologist Leon Festinger first described the concept back in 1957. But the meat paradox is a more recent area of study. The paradox has shifted into focus as psychologists investigate the ways in which we frame our appetite for animals. What they have uncovered is that we use a variety of cognitive tricks to distinguish animals that we consume from those we do not in order to make unpalatable ideas easier to swallow.

Culture and Camouflage

Ask people why they eat meat, and certain responses will come up over and over again. Among the most common are what psychologist Matthew Ruby of the University of Pennsyl-

vania calls “the 4Ns.” In a 2015 paper published in the journal *Appetite*, Ruby, along with an international team of collaborators, enumerated the four: we justify consumption of animals with the beliefs that meat eating is natural (we evolved to eat meat), normal (everybody does it), necessary (we need the protein) and nice (it tastes good).

There is some truth to each of these points—but the fact that vegetarian societies exist shows that the 4Ns have their limits. Confounding the issue, many people who believe in the 4Ns, according to Ruby, also exhibit confirmation bias, or the tendency to favor information that reinforces beliefs we already hold. (Another example comes from heavy smokers who, studies demonstrate, are less likely to believe reports linking cigarettes to lung cancer.) In the field of meat eating, economists Ying Cao, now at the University of Guelph in Ontario, and David Just of Cornell University found that among people who received information on the risks of getting food poisoning from beef, those who had just consumed the meat were more likely to discredit the news than those who had dined on salmon. “This sort of confirmation bias plays a significant role in making meat-based diets plausible,” Just explains.

On a deeper level, culture is crucial in understanding why we permit some animals in our home but put others on our plate. In some societies, eating dogs is a no-no, whereas consuming cows is perfectly fine. In others, it is taboo to eat cows, pigs or even chickens, which are regarded as unclean in Tibet because of their worm-based diet. Anthropologists such as Frederick Simoons and Marvin Harris long argued that whether we consider an animal “meat” boils down to its past economic relevance (for example, a horse that could plow fields would not be eaten) and its usefulness as a marker of tribal identity (as in Africa, where different clans and subclans observe different dietary restrictions to distinguish themselves).

Once a community categorizes an animal as “food,” it changes the way we consider these creatures. In 2011 Bastian, along with psychologists Steve Laughnan, then at the University of Kent in England, and Boyka Bratanova, then at the University of Surrey in England, asked 80 volunteers to read a short paragraph about Bennett’s tree kangaroos, which are native to Australia. Some of the participants encountered a version of the story in which locals regularly ate the animals, and others read general information about the kangaroos that omitted any mention of them as food. When the participants rated how much the kangaroo would suffer if harmed, clear differences emerged. People who had not read that tree kangaroos are considered food indicated their capacity to suffer as a nine out of 10, whereas those who read that the animals are often eaten judged it lower—close to a seven.

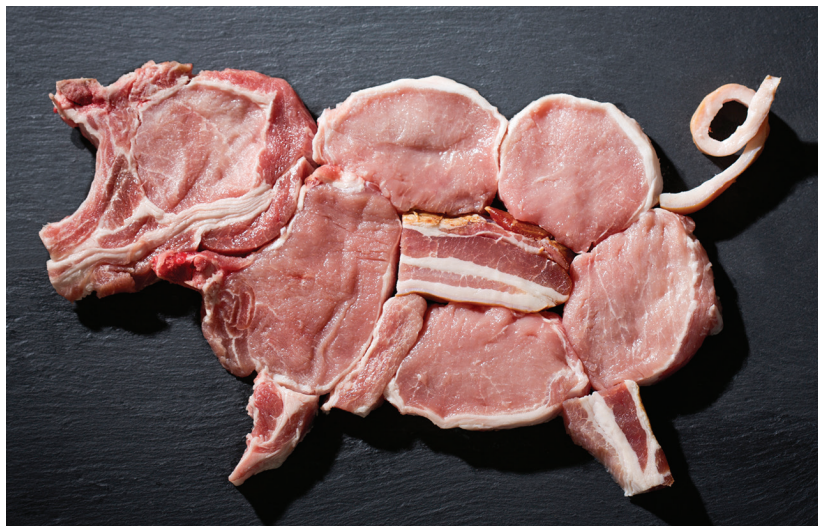
We further obscure the connection between a sentient creature and possible food source through what psychologists term “linguistic camouflaging.” “We don’t call the meat the actual name of the animal. We call it pork and beef and bacon,” explains Hank Rothgerber, a psychologist at Bellarmine University in Louisville. And modern English speakers are certainly not the only

FAST FACTS

THE MEAT PARADOX

- 1 Psychologists have found that people who eat animals but also love them and do not want them to be hurt experience cognitive dissonance, or a state of tension created by holding or acting on mutually inconsistent beliefs.
- 2 Although the simplest route to conquering this dissonance would be realigning attitudes and behavior, vegetarianism is relatively rare, suggesting most animal lovers find other ways to respond.
- 3 Tactics such as avoidance, dissociation and perceived behavioral change enable many people to get past their psychological distress and eat a meaty meal.

Linguistic camouflaging conceals the animals we eat (pig meat, for example, becomes “pork”). In 18th-century Japan, horse meat was called “cherry,” deer “maple” and wild boar “peony.”



ones to engage in such linguistic camouflaging: in 18th-century Japan people went so far as to rename horse meat “cherry,” deer “maple” and wild boar “peony.”

Dissociation and Depersonalization

The surest way to conquer cognitive dissonance is to resolve the disparity between what you think and how you act. In the event that you adore animals and cannot stand to think of them sent to the slaughterhouse, vegetarianism would certainly do the trick. Yet judging from the low numbers of vegetarians (between 3 and 5 percent of the population in the U.S.), that is not a technique most people choose. Perhaps unsurprisingly, those people who do quit carnivorous habits may have a heightened sensitivity to animal suffering. In 2010 neurologist Massimo Filippi of Scientific Institute and University Hospital San Raffaele in Milan, Italy, and his colleagues presented 60 volunteers images either of landscapes or of humans and animals in pain while examining their brain activity with functional magnetic resonance imaging. “Our results showed a different pattern of activations between omnivores and vegetarians while observing animal scenes, with a higher engagement of empathy-related areas, such as the anterior cingulate cortex, in the vegetarian group,” Filippi says.

Rather than breaking completely from steak dinners and tuna salads, far more people opt for what scientists call “perceived behavioral change.” This is generally a partial solution to the paradox that gives a person peace of mind. Someone who loves animals but is disturbed by the conditions on factory farms may buy meat from butchers who promise their animals were raised and slaughtered humanely. Perceived behavioral change can also include people who are trying to convince themselves and others that they have stopped eating meat—even if it is not true. In a study published in 2015 and based on the data from the U.S. Department of Agriculture and the National Health and Nutrition Examination Survey, for instance, a stag-

gering 27 percent of “vegetarians” admitted to eating red meat.

Another solution to the meat paradox is avoidance. “That’s the primary strategy—not to think about the origin of meat at all,” Rothgerber says. In 2014 he and Frances Mican, a student collaborator at that time, showed that people who were strongly attached to their childhood pets were even more inclined than the rest of us to avoid contemplating where meat actually comes from.

The next cognitive dissonance-reducing option is dissociation. By somehow separating the animals we eat from their animality, we can think of them, in effect, as merely meat. This tendency can help explain linguistic camouflage and the ways in which we try to create mental distance between an animal capable of thought and a possible source of food. The latter also explains why many of us tend to think of the animals we eat as less intelligent than our pet dogs and cats.

In 2012 Ruby, along with psychologist Steven Heine of the University of British Columbia, distributed two versions of a survey among 608 omnivores. In one version, people rated the food-related attributes (for example, how likely they would be to eat a given animal) of 17 creatures, such as chickens, cows and dogs. Afterward, they had to estimate the intelligence and emotions of the animals. In the second version of the survey, the tasks were reversed; participants had to think about the inner lives of the animals before contemplating their edibility. The result was not surprising: thinking about an animal’s mental capacity first made people feel more repelled by the idea of eating its meat.

The pattern crystallized in a 2012 study by Bastian, then at the University of Queensland in Australia, and his col-

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STRICTLY TABOO?

What we eat and what we reject varies enormously from one culture to the next. Strong taboos develop for a variety of reasons: spiritual, practical, economic and social. Here is a sampling of what is and isn't on the table at various spots around the world.

—Jordana Cepelewicz

Animal	Who Eats It	Who Does Not and Why
Cat	News reports suggest that millions of cats are eaten annually in China. In Cameroon, dining on cat meat is thought to bring good luck. According to a Swiss animal-rights group, some farmers in rural Switzerland still eat domestic cats.	Around the world people keep cats as pets and often treat them as members of the family, making it taboo, on moral grounds, to kill or eat them.
Chicken	A popular part of the global diet, it accounts for 31 percent of humanity's meat consumption.	Among some groups in Africa and Asia, eating chicken is prohibited because the bird is thought to be prophetic. Its bones are often used in divination and sacrificial rituals. Meanwhile some Indian and Tibetan cooks see the animal as unclean.
Cow	Beef is among the most widely consumed meats by people the world over, coming in just behind pork and poultry.	Not permitted to followers of Hinduism, who consider the cow a sacred animal.
Dog	Eaten in parts of East and Southeast Asia, including Vietnam and South Korea—although the practice is in decline. People in Yulin in China's Guangxi Zhuangzu region celebrate the summer solstice with a controversial dog-eating festival when some 10,000 canines are killed. The meat is thought to bring good luck and health.	Westerners see dogs as "man's best friend." Often anthropomorphized, the animal is viewed as a beloved pet and family member, which puts eating it off-limits. In countries where people traditionally eat dog meat, a recent increase in pet dog ownership corresponds to a drop in the popularity of its meat.
Grasshopper	A delicacy in Mexico and Uganda. Like many other insects, it is an excellent source of protein (arguably better than chicken).	Insects are unpopular in many Western nations, including the U.S., where they are seen as unpalatable.
Horse	Eaten in several European and Asian countries, including France, Belgium, Germany and Kazakhstan. High in protein and low in fat content, horse meat is often considered a delicacy.	People eschew horse meat in the U.S., Ireland and the U.K., where horses tend to be seen as companion animals or pets. Economic factors may contribute: historically, people got more bang for their buck raising a horse for, say, transportation rather than for food. Some scholars assert that horse meat, associated with pagan rituals, fell out of favor when Christianity spread throughout sixth-century Britain.
Pig	Consumed by people around the globe. United Nations data show that it is the world's most widely eaten meat.	Forbidden to adherents of Islam and Judaism. Many historians attribute this religious restriction to the view that pigs were "unclean" carriers of disease or to the fact that pigs were difficult to raise in the Middle East, where the taboo originated.

leagues. The team showed 128 meat eaters a picture of a cow or a sheep and asked each person to rate the animal's mental capacities, such as its ability to experience pleasure, fear or rage. Then participants attended a supposedly separate "consumer behavior study," which involved composing an essay on the origins of beef or lamb. As the volunteers were about to start writing, the scientists placed a plate heaped with food in front of them. Some got apples; others got roast beef or lamb "infused with rosemary and garlic" to sample later. Once the essays were finished, the volunteers had to again rate the smarts of a cow or a sheep before they could dig into the food.

Analyzing the results, Bastian and his colleagues noticed that people changed their judgment of the animal's mind if they thought they were just about to eat meat. "This experiment really nails the dissonance process: if you want to eat meat, then changing your perception of a cow as being less morally relevant will resolve your dissonance," Bastian says. He also found that the more people denied attribution of mind to a cow or a

sheep, the less negative emotion they experienced when faced with the prospect of eating it.

On the flip side, other researchers have found that encouraging people to think about an animal's humanlike traits, such as whether or not a dog could be a good listener, will make people less inclined to think of animals as food. And yet another Bastian study from 2011 found that people asked to write an essay on "What makes animals similar to humans?" were less okay with the idea of raising cattle or chickens for meat than people who wrote essays on "What makes humans similar to animals?" Clearly, we think of other creatures more highly if we compare them with ourselves—but the reverse is not true.

Even the sheer number of animals butchered for meat may depersonalize animals, creating greater distance between them and us. Experiments suggest that the greater the number of victims in an accident or a natural disaster, for example, the less personal connection people feel to their suffering. In one classic study, people donated more than twice as much to an identifiable victim

(“Baby Jessica”) than to statistical victims (10,000 children).

In 2013 researchers at Carnegie Mellon University, the University of Michigan, Ohio State University and the University of California, Santa Barbara, conducted a similar experiment. They divided 97 volunteers into groups, showed them images of sea creatures, and asked them to rate the extent to which the animals could experience beliefs or desires. But there was a catch. Some people evaluated a sea creature surrounded by plenty of look-alikes of the same color, and remaining volunteers had to rate a creature swimming among others of a contrasting color. The unique animal was thought to be smarter than the clones. “Our findings suggest that the large number of animals living on industrial farms may reduce our attribution of mind

Gender shapes how we resolve the paradox. Men are more likely to doubt animals feel emotions; women often opt to dissociate animals from food.

to those animals when we consider whether to eat them, which should increase its acceptability,” says the study’s lead author, psychologist Carey Morewedge, now at Boston University.

What is more, men and women use different techniques to reduce the dissonance caused by the meat paradox. A 2014 study showed, for example, that men are more likely than women to doubt that animals can experience such complex emotions as love or grief. They are also more inclined than women to use what scientists call “pro-meat justifications” such as the 4Ns. Meanwhile, according to Rothgerber, women opt for dissociation—they simply look the other way.

The reason for such differences, Rothgerber believes, boils down to our cultural assumption that meat is somehow a manly food. “By eating meat, men obtain validation of their identity. They are actually rewarded for thinking about it,” he says. Indeed, a 2012 experiment at the University of Pennsylvania found that most students saw steaks, hamburgers and beef chili as “male” foods; “female” foods included chocolate and peaches.

Minding Your Meals

The unpleasant condition of cognitive dissonance can also explain why having omnivores and vegetarians at one dinner table may result in awkward feelings. It appears that the presence of people with differing dietary habits puts the meat paradox in the spotlight. Things can even get awkward between the two types of vegetarians: ethical vegetarians (those who went “veg” for the health of the chickens, not their own—to borrow from Isaac Bashevis Singer) and health vegetarians. In 2014 Rothgerber found that ethical vegetarians judge health vegetarians less favorably after they are prompted to think

about meat eaters. Cognitive dissonance also has a way of making people defensive: a 2010 experiment showed that people who doubt their choice of diet advocate in its favor more fervently than those who feel confident about it.

Despite the discomfort, confronting the paradox can be a useful exercise if we want to make more conscious choices about food. “If we were more aware of the mental backflips we do to be able to eat animals, if we could admit to ourselves that we are uncomfortable about it, we could make more informed decisions on whether we want to eat meat or not,” Bastian says. A meat eater himself, Bastian is one of several scientists in this field who are motivated by concern that the growing global appetite for meat is unsustainable from an environmental perspective while also raising ethical and health concerns. Meat eating, after all, is responsible for more greenhouse gas emissions than driving cars, and most of the demand is met by factory farms, which are among the worst emissions offenders. Meanwhile several studies have connected eating red meat to heart disease, and according to a 2015 study in the *Lancet*, processed meats such as sausage and bacon are linked to a greater risk of cancer.

Within the field of psychology, the meat paradox belongs to a burgeoning area of investigation into our tendency to ascribe mental properties to entities all around us. In 2008, for example, University of Chicago psychologist John Cacioppo and his colleagues found that lonely people are more likely to anthropomorphize pets than more socially satisfied individuals. Many people even attribute human properties to inanimate objects, for instance, by naming a beloved pair of shoes or a trusty old car.

The meat paradox, however, adds a new dimension to that research. Although many findings have shown how easily we *give* minds to the beings or objects around us, manipulations concerning the meat we eat show that we also take this mental gift away—even when we know that the creature involved is capable of learning and sensation. In other words, we bestow “mind” on others as a matter of personal convenience. If nothing else, this aspect of human nature can provide some toothy food for thought. **M**

MORE TO EXPLORE

- **Who’s Lying about Not Eating Meat?** Hal Herzog in *Psychology Today*. Published online August 8, 2014. www.psychologytoday.com/blog/animals-and-us/201408/whos-lying-about-not-eating-meat
 - **Can You Have Your Meat and Eat It Too? Conscientious Omnivores, Vegetarians, and Adherence to Diet.** Hank Rothgerber in *Appetite*, Vol. 84, pages 196–203; January 1, 2015.
 - **Know Your Pork—Or Better Don’t: Debating Animal Minds in the Context of the Meat Paradox.** J. Benz-Schwarzburg and C. Nawroth in *Know Your Food*. Edited by Diana Elena Dumitras, Ionel Mugurel Jitea and Stef Aerts. Wageningen Academic Publishers, 2015.
 - Video of Brock Bastian’s presentation at the 2014 seminar Voiceless Rethinking: Speciesism: www.youtube.com/watch?v=INu5VsBFBXk
- From Our Archives*
- **The Carnivore’s Dilemma.** Morgan E. Peck; Head Lines, March/April 2012.
 - **Pets: Why Do We Have Them?** Daisy Yuhas; May/June 2015.