

Giving a Shit

Matthieu CALAME

Let's not tiptoe around it: this essay on excrement—a crucial agricultural, urban, and ecological issue—is fascinating. After all, it's a hot topic: what are we going to do with all this shit? It leads us, moreover, to an important scientific and democratic debate.

Reviewed: David Waltner-Toews, *Merde... Ce que les excréments nous apprennent sur l'écologie, l'évolution et le développement durable*, traduit de l'anglais (Canada) par Laurent Bury, Paris, Piranha, 2015. 256 p., 16, 50 €. Originally published as *The Origin of Feces: What Excrement Tells Us about Evolution, Ecology, and a Sustainable Society*, Toronto, ECW Press, 2013.

“Can we admit, freely and openly, that what we eat and how we handle our shit are essential acts of citizenship, as important as how we vote? I believe the answer to all of these is: yes.”

It was presumably because I shared this point of view that the editors of *Books & Ideas* conferred on me the honor of reviewing this book. Its title is an entire program: *Shit*.¹ Nor is the title merely rhetorical. After all, the author notes that addressing health issues “has led us from a manure pile next to the barn to linked social-ecological systems, to new ways of doing science. Now is the time, I think, for us to think about solutions.”

Indeed, the question of shit consists in a *mise en abyme*—a protracted sequence of technical, social, and intellectual challenges. Once they have overcome their initial post-scatological anxieties, curious and sincere readers will find themselves glued to the topic. For the problem of shit lies precisely in our reluctance to think about and manage it properly.

You are a Flow

Let's begin with a simple calculation. At a rate of 600 to 800 grams of food per day, in addition to water—food and water being inevitably expelled in one way or another, except when the body mass expands—more than half a ton of matter flows through the human body each year. If you expect to live until seventy, that means over forty tons over the course of your life, if you weigh 65 kilos. In other words, 630 times your weight.

Put differently, your body ultimately consists of no more than 1/630rd of the material substance of your life. You are less stock than flow. Managing your life essentially means

¹ The title of the French translation is *Merde*, or “shit.”

managing these flows. Now, if you extend this reasoning to every human being and animal, the total amount is 400 million tons for the former, and more than 14 billion tons for the other animals. These numbers are, moreover, on the rise, at the very moment when some economists insist that more people are needed to keep the economy afloat. We are, in short, in deep shit.

The overwhelming majority of animal manure comes from livestock farming. Waltner-Toews estimates that in 2010, all the livestock in the world (including sheep, goats, pigs, and poultry) produced nearly 14 billion tons of manure, or 35,341,235,000 million cubic meters. This figure is very close to estimates of the total quantity of terrestrial animal waste (worms aside). It should come as no surprise since herd animals represent more than 95% of all terrestrial vertebrates. Their shit is ours.

As the reader will have understood, the quantities involved are truly stupendous. We must be able to “talk doo-doo” clearly.

The Ambivalence of Shit

Shit is a both a resource and a danger.

It is a resource because it is part of natural cycles. It is what animals return to the vegetable world, notably by way of coprophagous organisms (such as insects and mushrooms)—organisms, that is, which have the merit of feeding off our excrement, rendering it even more accessible to our plants. Excrement is rich in nutrients. In some forms and in reasonable quantities, it can be a powerful stimulant to earth and plant life. Manure used to be known as the “brown gold”² and the French term for fertilizer—*engrais*, a reference to the fact that it “fattens” (*engraisser*) the soil—means exactly what it says.

Yet while shit may be a blessing for coprophagi and plants, it is a danger for the organisms that produce it. It carries parasites and disease, of which perhaps the most famous is cholera. Nature, in this way, offers us a wonderful lesson, forbidding us any hope that we might suffice unto ourselves by eating our own shit, no matter how nutritious it might be. Rather, if we wish to prosper, we have no choice but to enter into a kind of natural social contract that connects us to other organisms in a system of interdependence.

Getting Rid of Shit vs. Treating It

Not until the nineteenth-century did the British discover, thanks to the physician John Snow, the connection between water pollution and epidemics. During France’s Second Empire, Eugène Belgrand oversaw the building of Paris’ sewers. That said, the Romans already had their own urban sanitation program, notably the *cloaca maxima* (or “great sewer”).

Getting rid of shit is an effective urban sanitation measure—provided, that is, one has somewhere to put it. But in fact they only pass the problem onto wherever it is that the shit is moved. Given the current rate of urban growth, this is a huge problem. What is to be done with all the shit?

² This expression is a literal translation of the French expression “or brun”, which is commonly used in France to refer to natural fertilizers.

The Chinese, with one of the world's most intensive and, until recently, most sustainable agricultural systems, have a history of collecting and marketing human excrement (called "night soil") that goes back 3,000 to 4,000 years. Researchers estimated that, historically, 90% of all human excreta in China was being recycled in this way and that it provided about a third of all the fertilizer used in that country.

But what works in civilizations that are still predominantly rural and quasi-vegetarian is trickier in urban and carnivore societies. We could, however, live with this level of manure if it was at least used to regenerate depleted soil. But manure piles up, becomes concentrated, and heaps up in some places. Consequently, we suffer instead of benefiting from the presence of shit, despite all its nutrients and bacteria. Thus the political and economic problem of hyper-urbanization, as well as our model of food and meat consumption—and, underlying that issue, the question of our agricultural model—must be revisited.

Waltner-Toews does, of course, acknowledge the utility of certain technical solutions, such as methanization. But he warns the reader of "technolatrous" optimism. "In technology as in science, the claim to novel ideas is often made and is usually fraudulent." Consequently, at the heart of the "wicked problem of shit," food, and ecological sustainability, we find a theoretical challenge. We can find ad hoc solutions, consistent with a linear understanding of nature. These theories may work in factories or laboratories, but are catastrophic in the outside world. Is it possible, then to "save" science?

A Shitty Question

The answer is yes—if we adopt a broader conception of science, understood as a means to generate knowledge anchored in the real world. When one considers the various facets of the question of shit, in which behavior, culture, technology, and worldviews are all linked, it becomes apparent that it is futile to hope that grand technological projects can offer a solution. Civic participation is crucial, particularly for understanding the cultural basis of our relationship to shit and finding acceptable ways to manage it in a decentralized fashion (such as separating feces from urine, dry toilets, local composting, etc.). To help us, in short, come back from shit creek.

Public participation is also crucial for identifying problems and loci of risk, given the fragility of our knowledge, the urgency of the decisions that must be made, and the high stakes involved. Once it is understood that it is not enough to move it to large sewage treatment plants, an intelligent approach to managing shit becomes a wide-ranging and communal concern, rather than the exclusive preoccupation of specialized engineers, companies, and experts. Waltner-Toews references the ideas of the philosophers of science Silvio Funtowicz and Jerry Ravetz, who speak of a "post-normal" science: the point is not to overthrow the existing paradigms—as science progresses from one revolution to the next—but to accommodate a range of paradigms. In the matter that concerns us, there is not one perspective on shit, but several: that of the doctor, the anthropologist, the gardener, the ecologist, the mayor, the technician, and each and every one of us. We must connect these multiple perspectives if sustainable development is to be achieved.

In this way, the problem of shit is a democratic question, a scientific issue, and the catalyst of an epistemological revolution. Who would have thought? Indeed, the cunning of

reason is unfathomable.

This book will thus reassure those who believe that the ecological challenge demands a deep revision of how we think and act. If the early chapters seem to suggest an impressionistic approach, juxtaposing information and anecdotes, this weakness is overcome in the book's second part, in which the author presents his ideas in an appealing way. It is, in short, a book that has earned its place in that little room where, having no choice but to sit, most of us take the time to read...

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