

SCIENCE, HUMANITY, AND ATROCITY: A LAWYERLY EXAMINATION

Steven D. Smith*

THE SONG SPARROW AND THE CHILD: CLAIMS OF SCIENCE AND HUMANITY.
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Just over half a century ago, researchers in occupied Manchuria conducted experiments on “logs”: this was their term for the human beings on whom they were experimenting. The term arose, possibly, from research on frostbite. “[T]hose seized for medical experiments,” a later report explained,

were taken outside in freezing weather and left with exposed arms, periodically drenched with water, until a guard decided that frostbite had set in. . . . [T]his was determined after the “frozen arms, when struck with a short stick, emitted a sound resembling that which a board gives when it is struck.”¹

In one experiment, the “log” was a three-day-old baby. The researchers reported on how they overcame one obstacle in this case: “Usually a hand of a three-day-old infant is clenched into a fist . . . but by sticking the needle in [the baby’s finger], the middle finger could be kept straight to make the experiment easier.”²

Joseph Vining’s³ reflection on (as the subtitle indicates) the claims of science and humanity begins with a terse but disturbing recitation of these and similar scientific experiments conducted on human beings during the

* Warren Distinguished Professor of Law, University of San Diego. B.A. 1976, Brigham Young; J.D. 1979, Yale. —Ed. I thank Chris Eberle, David McGowan, Michael Perry, Sai Prakash, Merina Smith, and George Wright for helpful comments on an earlier draft.

1. P. 6 (quoting Nicholas D. Kristof, *Japan Confronting Gruesome War Atrocity*, N.Y. TIMES, Mar. 17, 1995, at A1, reporting on the human experimentation in Manchuria from 1932–1945) (alterations and omissions in original).

2. Pp. 6–7, 10 (quoting Kristof, *supra* note 1) (omission in original).

3. Harry Burns Hutchins Professor of Law, University of Michigan.

twentieth century in Manchuria, Nazi Germany, and Pol Pot's Cambodia. The incidents are conveyed through quotations, sometimes of the coldly clinical prose that the researchers themselves chose as most suitable for their purposes. These quotations are juxtaposed against others from an array of distinguished scientists and philosophers explaining the naturalistic cosmology that, in the view of these thinkers, modern science has given us: it is a stark, cold cosmos without inherent meaning, purpose, or value. "The more the universe seems comprehensible," Nobel Prize-winning physicist Steven Weinberg remarks, "the more it also seems pointless."⁴

In this pointless universe, "living creatures just are very complicated physico-chemical mechanisms," J.J.C. Smart explains.⁵ And what of ourselves—of human beings? Another Nobel Prize winner, François Jacob, instructs us:

Biology has demonstrated that there is no metaphysical entity hidden behind the word "life." . . . From particles to man, there is a whole series of integration, of levels, of discontinuities. But there is no breach either in the composition of the objects or in the reactions that take place in them; no change in "essence."⁶

What are we supposed to make of this pairing of descriptions of moral enormities with statements of a scientific worldview? Is Vining trying to do to science what critics often do to Christianity when they give descriptions highlighting, for example, the sexual abuses of clergy or the Inquisition—thereby condemning a whole movement of life and thought by equating it with the abuses that any large-scale enterprise involving human beings will occasionally produce? If so, readers might well toss the book aside as a cranky manifestation of the "antiscience" that is one of the book's abiding concerns. To be sure, scientists sometimes behave unfeelingly, just as other humans do. But there is nothing intrinsic to the scientific method or worldview that leads to the atrocities of Manchuria or Nazi Germany: that much is obvious.

Or is it? The question runs through Vining's multifaceted meditation, and the answers that gradually, tentatively emerge are complicated, provocative, and counter to the culture that prevails in much of academia today. In that and other respects, *The Song Sparrow and the Child* is continuous with earlier writings⁷ that have established Vining among the more profoundly challenging but also more idiosyncratic and elusive (and as a result, I believe, underappreciated) legal thinkers in recent decades.

4. P. 11 (quoting STEVEN WEINBERG, *THE FIRST THREE MINUTES: A MODERN VIEW OF THE ORIGIN OF THE UNIVERSE* 154 (1993)).

5. P. 8 (quoting J.J.C. Smart, *Professor Ziff on Robots*, in *MINDS AND MACHINES* 104, 105 (Alan Ross Anderson ed., 1964)).

6. P. 9 (quoting FRANÇOIS JACOB, *THE LOGIC OF LIFE: A HISTORY OF HEREDITY AND THE POSSIBLE AND THE ACTUAL* 306 (Betty S. Spillmann trans., 1982)).

7. See JOSEPH VINING, *FROM NEWTON'S SLEEP* (1995); JOSEPH VINING, *THE AUTHORITATIVE AND THE AUTHORITARIAN* (1986).

The elusiveness of Vining's work does not result, as is so often the case, from ponderous prose or jargonistic terminology: on the contrary, Vining's vocabulary is modest and often poetic, and his prose can be lyrical. It may be that readers are simply not accustomed to a legal author whose sensibility and message seem more characteristic of a poet than of either a traditional doctrinal technician or of a law-and-whatever type. In any case, there is no pretending that this book is an easy read. Its difficulty may induce already deluged scholars and students to set the book aside in favor of more accessible and immediately usable material. That would be unfortunate, because they would thereby miss hearing one of the voices in the legal academy most worth listening to. Consequently, my aspiration in this review will be not so much to give a critical evaluation of Vining's claims as to provide a sort of reader's guide to this important book.

One who offers himself as a guide takes on risks, of course. One risk is that the would-be guide will be undertaking to help his pupils through terrain that he himself understands only very imperfectly. But that limitation is an acknowledged feature of most tours. You do not expect the guide you pay to show you highlights of London or the Louvre to know everything about the subject: you listen to what the guide has to say and do not embarrass him with too many hard questions. A different risk is that someone might accept the quick tour as a substitute for encountering the thing itself, in the way that undergraduates read the Cliffs Notes for *Crime and Punishment* and never bother to read the actual novel. My own tour of Vining's book will be intended, among other things, to indicate how much would be missed by prospective readers who adopted that lazy expedient.

A. Science, Antiscience, and Totalistic Science

Most conspicuously, this is a book *by a lawyer writing about science*: that is unusual and risky and, some might think, audacious. No one, however, will doubt the subject's significance. Of the various influences that over the last several centuries have shaped and reshaped the way we live and think, "science" (whatever it is) is surely among the most important. But has science's overall influence, on balance, been healthy—or destructive? The question is one that all of us, including lawyers, are entitled to ask.

Taking passages out of context, reading them carelessly, one might easily conclude that Vining views science as pernicious, and that he himself is a partisan of what he calls "antiscience." And indeed, compared to those scientists and philosophers who denigrate antiscience as nothing more than a destructive and irrational menace,⁸ Vining is more understanding of and sympathetic to this protest.

Even so, Vining himself cannot plausibly be placed in the camp of antiscience. On the contrary, he perceives it as "dangerous" (p. 63). And he is

8. Readers who have not encountered the phenomenon of antiscience or, for that matter, of virulent anti-antiscience, might quickly browse through the entries under the "Texas Taliban Alerts" category on the web site *Leiter Reports*. Leiter Reports, http://leitereports.typepad.com/blog/texas_taliban_alerts/index.html (last visited Oct. 15, 2005).

affirming sometimes to the point of extravagance in paying his respects to science. Thus, Vining speaks of “the deep necessity of science, the scientist in each of us” (p. 13). Much of what is good in modern life we owe to science, according to Vining (p. 94). “Science is a gift,” he observes, “as music is a gift” (p. 27). He elaborates, “science brings gifts, of fascination, of beauty, of relief from pain, gifts of unclouded thought, of freedom to love; and in fact these gifts and their effects are enjoyed even by those who live in a world whose material constitution they deny” (p. 81).

So if (contrary to casual impression) science is not after all the target of Vining’s criticism and concern, what is? The book’s first paragraph offers the answer that is repeated throughout: what Vining finds threatening is not science but rather “total claims” made in the name of science, or “total theory,” or “total vision.” It is the reductionist insistence that there is ultimately “nothing but” or “merely” (phrases that Vining finds ominous) the objective “systems” and “processes” that scientists study—and hence that the kinds of objectivist and impersonal explanations given by science and valuable for explaining *some* things can ultimately explain *everything* (including the scientists themselves).

Vining’s principal target is thus the sort of worldview endorsed by John Searle, who declares that the world “consists entirely of physical particles in fields of force, and some of these particles are organized into systems that are conscious biological beasts such as ourselves.”⁹ Searle goes on to explain that “the simple intuitive idea is that systems are collections of the particles where the spatio-temporal boundaries of the system are set by causal relations. . . . Babies, elephants, and mountain ranges are . . . examples of systems.”¹⁰ It is this totalistic view, and not science itself, that Vining sees not merely as mistaken but as a threat to humanity—and even, paradoxically perhaps, to science itself (which in Vining’s view appears to be the sort of healthy golden mean threatened on one side by antiscience and on the other by total vision).

Much of the book is thus devoted to describing and understanding this total vision—not only its substance but also its mindset and its tone. The affirmative substance of total vision is conveyed in part through quotations such as that from Searle given above. The book provides numerous similar instances and expressions. In this reductionist view, “the brain is merely a meat machine.”¹¹ As noted neurobiologist Jean-Pierre Changeux puts it, “[t]he brain secretes thought as the liver does bile.”¹² The same scientist explains that beliefs—which can be “defined as a specific state of nerve cell

9. P. 8 (quoting JOHN R. SEARLE, *THE CONSTRUCTION OF SOCIAL REALITY*, at xi–xii (1995)).

10. *Id.* (quoting JOHN R. SEARLE, *THE REDISCOVERY OF THE MIND* 86–87 (1992)) (omissions in original).

11. P. 48 (quoting a colleague of Joseph Weizenbaum).

12. P. 54 (quoting JEAN-PIERRE CHANGEUX & ALAIN CONNES, *CONVERSATIONS ON MIND, MATTER, AND MATHEMATICS* 154–155 (M.B. DeBevoise ed., trans., 1995)).

activity”—are comparable to diseases: “they can propagate from one brain to another, and spread ‘infection’ much as viral attacks do.”¹³

But the nature of total theory is hardly captured by reporting its affirmative claims in propositional form. On the contrary, Vining suggests that total theory has the qualities of a “creed” or faith (p. 26)—or an anti-faith¹⁴—and just as Christian creeds developed largely in response to perceived heresies, the character of the naturalistic creed is more clearly manifest in what it aggressively *denies* than in what it *affirms*. Total theory conspicuously leaves some elements out of its account of the world: purpose, spirit, transcendence, divinity (p. 43). But it does not merely omit these elements; it belligerently opposes them¹⁵ and seeks to root them out with a kind of censorious zeal.¹⁶ Thus, for Nobel Prize-winner Jacques Monod, “Judeo-Christian religiosity” is not merely false; it (along with, by the way, “scientistic progressivism, belief in the ‘natural’ rights of man, and utilitarian pragmatism”) is “disgusting.”¹⁷ Such notions, Monod insists, “afflict[] and rend[] the conscience of anyone provided with some element of culture, a little intelligence.”¹⁸

13. P. 53 (quoting CHANGEUX & CONNES, *supra* note 12, at 227). Such statements may support Vining’s observation of a connection between totalistic science and a tone or aesthetic of “ugliness.” P. 45. But the view can also be presented poetically:

In the competing vision we have seen, of a world of swirling flux from beginning to end or without beginning or end, in which all, including mathematics and the mathematician, becomes processes and processes of processes, system dissolving into system, things merely happen. . . . Things merely happen and nothing can be more important than anything else because it is merely something happening. There is no such thing as catastrophe. The raging fire that caught up with the smoke jumpers in Norman MacLean’s *Young Men and Fire* is grass burning. Grass burning is just something happening. Flesh burning is no different. The wind rises, the fuel changes, the temperature escalates, the spread accelerates, process builds on process, the organization of the fire replaces the organization of a tree, of a human body, and then the fire is gone.

P. 109 (footnote omitted).

14. See p. 73 (“[F]aith,’ like ‘belief,’ becomes a negative term.”).

15. See *supra* note 8. Commenting on Changeux’s expression of “amazement” that mathematicians can still sometimes talk of divinity, Vining observes:

The use of the word “astonish” or “amaze” can be put down as just one of the pejoratives sprinkling late-twentieth-century discussion. . . . Stand back, and look again at the range of discussion in the essays, books, and popularizations that appeared in such great numbers in the second half of the twentieth century: the reaching to deny spirit—and reference to “theism” as a counterdenial of scientific truth—is striking. It is constant and widespread. Anything to the contrary “amazes” and “astonishes.” Even Newton and Einstein astonish.

Pp. 72–73.

16. Although he does not enter into the debates or take sides, Vining does comment on the censorious quality of the campaign to exclude creationism or “intelligent design” from the schools: “Strange, this struggle over the minds of young children—one might think that the theory of evolution, appealing, simple, fertile, fascinating, like a beautiful equation in mathematics, could fend for itself when presented to curious young minds.” P. 28.

17. P. 50 (quoting JACQUES MONOD, *CHANCE AND NECESSITY: AN ESSAY ON THE NATURAL PHILOSOPHY OF MODERN BIOLOGY* 171 (Austryn Wainhouse trans., 1971).

18. *Id.* (quoting MONOD, *supra* note 17, at 171).

Pondering such denunciations, Vining wonders whether what is called “‘science’ . . . is molded by and is inseparable from the enemy it constructs to hate” (p. 75). And he detects in “late twentieth-century cosmological speculation . . . the psychology of the adolescent who doesn’t understand, and who destroys . . .” (pp. 76–77).

With totalistic science, as with other creeds, heresy and error are always cropping up not only among the unenlightened but within the congregation of the (anti-)faithful as well, and they must above all be weeded out from that field. Thus, with a sort of monastic severity, Changeux exhorts mathematician Alain Connes that “[t]he materialist program” involves “an act of self-discipline” through which even the scientifically converted must “eliminate” within themselves “all remaining traces of transcendence.”¹⁹ And as if to allay suspicions of heretical tendencies, Connes concurs: “I grant that the brain . . . has nothing of the divine about it, that it owes nothing to transcendence whatsoever.”²⁰ Philosopher Daniel Dennett pronounces that if progress is to be made in artificial intelligence, “we have to give up our awe of living things” (p. 48). And with sadness, Vining describes one of his favorite science authors, Lewis Thomas (“He was a wonderful man and I keep his books on a special shelf” (p. 23)), who in Vining’s view struggled to conform his gift for seeing beauty and meaning in the world to the demands of the hardened worldview of totalistic science. Hence the wonderful, but sometimes troubled, quality of Thomas’s writings—tossing out then hastily disowning insights and intuitions and hypotheses that “[m]y scientist friends will not be liking,”²¹ alluding to the irrepressible likelihood of something in the universe that transcends material processes but then passing off such allusions as mere playfulness or jokes—“jokes being the freedom of the oppressed,” as Vining says (p. 31).

Central to Vining’s discussion is a distinction between science itself and totalistic science. But is this distinction an illusory one? Or do the assumptions on which science is conducted necessarily commit its devotees to making totalistic claims? Vining thinks not. “There are great scientists,” he reminds us, “from Newton to Einstein who are not troubled by divinity, nor driven by a desire to eliminate it from the thought and speech of all” (p. 27). But perhaps these luminaries merely lacked the sorts of little minds that could be bothered by the hobgoblin of consistency?²² Vining’s perception is that over the course of the twentieth century, totalistic claims from scientists and science-admiring philosophers seem to have grown more insistent and aggressive—and censorious: the assertions quoted earlier from Weinberg, Searle, Dennett, and Changeux constitute just part of the evidence.

19. P. 81 (quoting CHANGEUX & CONNES, *supra* note 12, at 25).

20. P. 52 (quoting CHANGEUX & CONNES, *supra* note 12, at 26).

21. P. 25 (quoting LEWIS THOMAS, *THE FRAGILE SPECIES* 192 (1992)).

22. Cf. RALPH WALDO EMERSON, *Self-Reliance*, in *SELECTED WRITINGS OF RALPH WALDO EMERSON* 257, 263 (William H. Gilman ed., 1965) (1841) (“A foolish consistency is the hobgoblin of little minds . . .”).

These are thinkers whose scientific or philosophical credentials may be intimidating to most of us, so their apparently total confidence in asserting a totalistic view carries force. How might such assertions be resisted? *Should* they be resisted? Like Vining, some of us might find the comprehensively naturalistic worldview unappealing—so what? Since when did theories get accepted or rejected based on whether we find them edifying, or flattering, or spiritually uplifting? And one more thing: What qualifications does a mere law professor possess to stand up against such formidable authorities?

B. *What Do We Believe, Really?*

Given his dark portrayal of “total theories” and their implications, we might expect from Vining a vigorous, head-on assault on such theories. What we get instead is a more oblique and measured (and, perhaps, frustrating) response—one constituted by an apparently meandering meditation that circles around and around recurring themes. To appreciate this response, we need to consider Vining’s somewhat unusual understanding of the character of believing and, hence, of the function and limits of reasoning.

Most of us probably think of our beliefs as being immediately transparent to us. Asked what you believe about something, you can simply look inside yourself and then report whatever belief you find there; the belief might be false, of course, but your sincere statement that it *is* your belief (at least as of the time of the report) seems unassailable. If you say you believe *X* and someone says, “no, you don’t,” the objector will seem merely boorish and obtuse—on both an epistemic and etiquette level.

Vining has a different conception. In his view, a belief is not simply a readily observable propositional piece on our cognitive chessboard: it is something less on the surface and instead more rooted in the depths of our being. Discovering what we believe—what we really, genuinely believe—involves not a simple introspection and report but rather a more serious and searching investigation of . . . well, of what we *think* we believe, yes, but also of how we live, what we desire, what we would and would not be willing to do. It may turn out, upon close examination, that people do not *really* believe some of what they casually thought they believed, and that they *do* believe some of what they thought they did not.²³ To raise that possibility is not to insult; rather, “an inquiry into actual belief, asking for candor . . . is according a dignity to the one of whom the demand is made” (p. 27).

Consistent with this personal and holistic conception of belief, the function of reasoning is not, for Vining, merely to marshal arguments—to “move from proposition to proposition” (p. 2)—so as to construct a proof or

23. Vining states:

We may think we believe something here, or do not believe something there, but we do not have the last word on what we believe unless we read ourselves as a whole, in the same way we read others to determine what it is they are really saying and what it is they actually believe.

demonstration in order to compel someone to accept a proposition different than the one she started with. That sort of exercise hardly ever succeeds, and it would be quite pointless even if it did succeed, because the underlying beliefs might well remain unaffected by the dialectical exercise. No genuine assent would result. “Binding you to me by successful moves of my mind would lose all that can be hoped for” (p. 2).

Instead, Vining conceives the function of reasoning and reflection to be that of enlisting us in the enterprise of examining our actions, assumptions, commitments, and ways of talking in order to determine what we really believe. This must be a cooperative enterprise²⁴—one that aims to achieve self-understanding, candor (a virtue on which Vining places great emphasis), and genuine assent. We may well change our opinions during the course of the enterprise, but the change will typically come not because we are coerced by logic into repudiating our previous position, but rather because we become able to acknowledge beliefs that at some level we have held all along without being wholly conscious of them, or perhaps without being willing to own up to them.

Vining’s book is his attempt to engage in such mutual reflection with respect to science and the claims of total theory—hence its circling, searching approach. His project will doubtless succeed with some readers and vex others, but it should already be clear why reading a distillation of the reflection, such as this one, cannot substitute for reading the book itself (or, for that matter, why a quick skimming of the book in the way we “read” so many books today would be pointless). With this sort of book, it is not just a matter of finding out the conclusion, or even of extracting the “argument”: the journey is essential. So it would be as sensible to say that if you look over a synopsis of *King Lear* you do not need to read the play itself, or that (as my wife sometimes proposes to me) you do not need to watch the game because you can find out the score in tomorrow’s newspaper.

Vining’s conception of the enterprise points to one reason why he thinks that lawyers—not just those who are officially licensed by the state but others as well, because “[t]here is the lawyer and law in all of us” (p. 1)—have a valuable role to play in debates about total claims involving science. That is because the question as he conceives it is not so much whether a scientific explanation of some particular fact or phenomenon is correct, but whether anyone—you, me, the scientists themselves—actually believes in the totalistic worldview that so many modern scientists and other thinkers publicly sponsor. It is lawyers, after all, who examine and cross-examine and reexamine, and who probe for inauthenticity and suppression of truth. So in trying to discern what you and I—and Steven Weinberg, and John Searle—really believe, we must “[d]o what lawyers do with witnesses’ testimony.”

24. “Belief is what attaches words to reality; and it is up to the listener to determine whether belief is there, and it is the listener who can help the speaker see whether belief is there.” P. 149.

treating even the “doctors or scientists or mathematicians [as] witnesses.”²⁵ Do we and they believe, all things considered, that we are “nothing but” or “merely” complicated material “systems” and “processes”? We may *say* we believe this, but do we *really*?

That is Vining’s question. Someone might object that this is not the only question, or the most cogent one. It might be, after all, that the reductionist worldview is *true* even if hardly any of us can bring ourselves entirely to embrace it—or, for that matter, that this worldview is *not true* even if many of us *do* sincerely believe it. Shouldn’t the question be what the truth is, not what we believe?

Perhaps. But I suppose Vining might reply that we deceive ourselves with this distinction. There is no escaping the fact that it is *we*—we finite, fallible, alternately credulous and skeptical human beings—who are posing the questions, and we are posing them *for ourselves* and our purposes. Separated from the question of *what we believe*, the question of *what the truth is* can mean nothing to us.

So the question posed is whether we—scientists included—really believe in the totalistic claims that sometimes emanate from scientists. Vining adopts a variety of strategies for pursuing that question.

C. Science as a Human Enterprise

One strategy is to examine closely the scientific enterprise itself to see whether *it* can be reduced to the sorts of objective, impersonal “systems” and “processes” into which it attempts to reduce its own subjects of study. In Vining’s examination, it turns out that science itself is a deeply human and personal enterprise. Consequently, and ironically, if the totalistic, person-reducing claims sometimes asserted by scientists were actually true, and were fully accepted, the scientific enterprise would be impossible.

In conducting this examination, Vining stresses the dependence of science on assent. The objective conclusions of a scientific experiment are not self-validating and self-executing, as it were: they must win the assent of *persons*—of the community of scientists and, for that matter, of non-scientists (pp. 85–91). Science is a cooperative enterprise. No single scientist can personally verify or vouch for more than an infinitesimal fraction of the sum of scientific knowledge; each must rely on the work and reports of others, and in order to do that each scientist must be able to assume that other scientists are working in good faith (pp. 93–101). These qualities—“assent” and “good faith”—are irreducibly personal in nature.

What is the significance of these observations? In some respects they resemble a familiar argument made by, among others, C.S. Lewis in a famous debate with the philosopher Elizabeth Anscombe. Lewis argued in essence that a comprehensively naturalistic worldview cancels itself out because if

25. Pp. 16, 17. “Everyone moving to a position on what he or she believes in is something of the position of a lawyer. Everyone is attending to testimony: to her own testimony to herself . . . and to the testimony of others.” P. 17.

that worldview were correct, it would follow that all of our beliefs—including our belief in a naturalistic worldview—are the product of nonrational natural causes, such as chemical processes in the brain. But there is no epistemic efficacy in chemical processes, and we put no stock in beliefs determined by natural causes. So if you believe in the naturalistic worldview, the logic of your own belief should cause you to abandon this belief: naturalism thus “cuts its own throat.”²⁶ Lewis thought this criticism was compelling; Anscombe did not.²⁷ At the very least, Lewis’s argument points to a paradoxical quality in comprehensive naturalism—one that manifests itself in debates not only about epistemology but about free will as well.²⁸

Vining’s reflections resemble Lewis’s argument insofar as Vining suggests that if the claims of totalistic science were true, science itself would be subverted. In this sense, total theory may appear to be self-cancelling. But it seems that Vining’s point is not the rationalist one that totalistic science has somehow been *refuted* by a demonstration of inconsistency. That conclusion might or might not be justified, but even if it is, what would be gained by the demonstration? The confirmed naturalist might respond, “Okay, you’ve identified a difficulty in my argument—a sort of paradox. I commend you for your cleverness. But you haven’t shown—or even purported to show—that the naturalist position is *false*. Nor have you said anything that compels me to abandon my belief in naturalism. And in fact, I still believe it.”

It is precisely at this point, I think, that Vining’s reflections become relevant. His goal is not so much to demonstrate that totalistic science is self-refuting on a merely analytical level, but rather to show that even the scientists who make totalistic claims themselves do not and cannot fully believe in those claims. So in response to the defiant assertion “I still believe it,” Vining’s message seems to be: “No, actually you don’t. You believe in science and the natural world, of course. But if you reflect candidly on your actions and commitments as a whole, even including your commitments *to science*, you will see that you do not and never did believe in reductionist naturalism—not as the whole story.”

26. See, e.g., C.S. Lewis, *Religion Without Dogma?*, in *GOD IN THE DOCK: ESSAYS ON THEOLOGY AND ETHICS* 129, 137 (Walter Hooper ed., 1970) (1946):

Every particular thought (whether it is a judgment of fact or a judgment of value) is always and by all men discounted the moment they believe that it can be explained, without remainder, as the result of irrational causes. Whenever you know that what the other man is saying is wholly due to his complexes or to a bit of bone pressing on his brain, you cease to attach any importance of it. But if naturalism were true then all thoughts whatever would be wholly the result of irrational causes. Therefore, all thoughts would be equally worthless. Therefore, naturalism is worthless. If it is true, then we can know no truths. It cuts its own throat.

27. See G.E.M. Anscombe, *A Reply to Mr. C.S. Lewis’s Argument that “Naturalism” is Self-Refuting*, in 2 *METAPHYSICS AND THE PHILOSOPHY OF MIND: THE COLLECTED PHILOSOPHICAL PAPERS OF G.E.M. ANSCOMBE* 225 (1981). For a synopsis of the debate between Lewis and Anscombe, see WALTER HOOPER, *C.S. LEWIS: A COMPANION & GUIDE* 618–20 (1996).

28. See, e.g., WILLIAM JAMES, *The Dilemma of Determinism*, in *THE WILL TO BELIEVE AND OTHER ESSAYS IN POPULAR PHILOSOPHY AND HUMAN IMMORTALITY: TWO SUPPOSED OBJECTIONS TO THE DOCTRINE* 145 (1956) (1884).

D. Atrocities and the Morality of Scientists

It is not only reflection on the scientific enterprise and its methods that leads Vining to this understanding. He is also led there (and he seeks to lead us there) by pondering the significance of the moral atrocities, large and small, that were so conspicuous in the last century: in Manchuria, Germany, and Cambodia, to mention the most flagrant examples. From start to finish, these atrocities loom over the discussion.

The claim is not exactly that scientific research leads to atrocities (although it can, sometimes), or that scientists are moral monsters (although a few are). On the contrary, although he worries about the potentially destructive consequences of total theory,²⁹ Vining seems to think that, by and large, people who devote themselves to science are admirable, moral beings. In their most truly scientific work they are “driven by love and awe” (p. 39), by a “passion for truth” (p. 134), and by the “fascination,” “beauty,” and aspiration to “unclouded thought” and even “freedom to love” that science can give us (p. 81). Both their work and their writings about their work reflect admirable, and deeply moral, commitments—to each other, to humanity and future generations, and to the pursuit of truth.

But now comes the troubling question: How do the partisans of science explain and justify these moral values and commitments? Or more precisely, how do they explain and justify them *within the framework and on the impersonal assumptions of totalistic science*? This is the central incongruity explored throughout the book: the frequent and apparently sincere expression of moral commitments and aspirations by people who purport to hold a worldview within which, in Vining’s view, these commitments and aspirations lack justification and indeed come close to being unintelligible.

Thus, most people (including nearly all scientists) react with moral outrage upon learning of the experiments on human beings conducted in occupied Manchuria or Nazi Germany. But why? We routinely perform scientific experiments on animals, after all, and although the practice can be controversial we do not typically experience the same moral indignation as we do in cases of experimentation on humans. Suppose that humans are “merely” complex natural “systems,” as total theory tells us they are, and that there is no difference in “essence” between humans and animals, as Nobelist François Jacob declares.³⁰ Suppose we are, in John Gray’s phrase, “straw dogs.”³¹ So then why do we draw such a drastic distinction here?

29. Vining states:

We know that conventional limits and restraints can change with belief about the ultimate nature of things. The twentieth century has its warning examples, most gruesome where total vision has appeared in social and political thought. The connection between what we think about the nature of the world, and what we allow ourselves to do, is now widely felt, and, with good reason, widely feared.

Pp. 1–2.

30. See *supra* note 6 and surrounding text.

31. JOHN GRAY, STRAW DOGS: THOUGHTS ON HUMANS AND OTHER ANIMALS (2002). Gray’s book provides an interesting counterpoint to Vining’s. There are obvious similarities and parallels:

How do we account for our conviction that experimenting on *the sparrow* is so radically different than experimenting on *the child*? This is the central question that Vining presses over and over throughout the book. (Although, as we will see, from a different direction he himself doubts the cogency of the line between sparrow and child.)

Nor is it merely our (and the scientists') condemnation of large-scale moral enormities that is in tension with the totalistic worldview so frequently professed. In fact, the writings even of scientists who assert totalistic claims teem with assertions of value, obligation, caring, and moral commitment. These assertions seem to be sincere, Vining suggests, but once again, they are hard to place within the naturalistic framework that these writers purport to embrace.³²

Once again, we can ask what the significance of these incongruities is. Do they show that the partisans of totalistic science are guilty of inconsistency, or of a so-called "performative contradiction"? Perhaps, but this is not exactly Vining's charge. Analytical philosophers would likely respond to such a charge with a host of conceptual *distinctions* calculated to dissolve (or deflate, or at least obfuscate) the apparent contradiction, while scientists themselves—evolutionary psychologists, for example—might respond with *explanations* of how a species might evolve so as to favor, say, the carriers of its own genetic materials. But Vining's inquiry is subtly different. The question is not whether a satisfactory philosophical defense of the moral *distinction* between the sparrow and the child could be developed (a defense that could operate to exonerate from a charge of inconsistency people who in fact were never even aware of the defense), nor is it whether our embrace of that distinction can be scientifically *explained*.

The question, rather, is what our words and actions in this matter tell us about what, in fact, we *really believe*. And Vining thinks that, despite some protestations to the contrary, most of us really believe in a realm of value that cannot be reduced to the systems and processes of science and that cannot be adequately accounted for in purely material terms. He thinks that if

each perceives and probes the tension between the scientific worldview and the moral commitments and values so often professed by those who proclaim this worldview. Gray in particular is exercised by what he views as the hypocrisy and self-deception of those who purport to embrace both science and the values of liberal humanism. But while Vining seeks to save moral commitment and transcendence from the overreaching of science, Gray appears to call for a more candid capitulation.

32. *E.g.*, pp. 30–38, 112–14. For example, regarding Lewis Thomas's concern that although "life" would continue, deforestation or nuclear holocaust might prevent the survival of future creatures "like us," Vining comments:

Why should we care at all . . . ? If we are the random product of a billion years of evolution, and the system does not "see fit" (though those would be forbidden words) to bring forth a product "like us" in another billion years, what concern is that of ours? The dice roll six, the dice roll two. The six does not care whether a two or a six is rolled next. The dice themselves do not care. Only if there is some identification with future creatures, creatures after our individual death, creatures after the passing of every body that is in material existence at the time of our own death, identification, real, through a connection other than near succession in time in the products of the processes of the material world, can there be any claim of the distant future on our present desires.

we exert ourselves to reflection and candor, and if we work up the courage to speak in good faith, we will acknowledge such beliefs. Although theorists may say they believe in a merely naturalistic universe, their genuine beliefs are better than their theory-driven professions.³³ John Searle may declare that babies and animals are merely complex systems of “physical particles in fields of force.”³⁴ “But Searle would stay his hand from vivisectioning a human being or pulling out a dog’s nails with pliers and then burning it alive In staying his hand, he would reveal much” (p. 136).

E. Openings into “Spirit”

Vining’s examination is not limited, however, to showing tensions between what we say we believe in some contexts and what we say and do in other contexts. In a more direct and affirming vein, he asks us to contemplate what he calls “openings”: realms of experience through which, if we pay close attention, we can sense the reality of something beyond the reductionistic world of systems and can look into the world of what Vining calls, with misgivings, “spirit.”³⁵

The same openings will not present themselves to everyone. For some, *music* will provide this sort of insight (p. 116). I recall in this respect a former colleague who by his own account was incapable of religious faith but was deeply sensitive to art and music, and who confided to me that he was troubled by a naturalistic worldview because he could find no real home in it (as opposed to unsatisfying, tone-deaf evolutionary *explanations*) for Mozart’s compositions. The sublimity of Mozart was indisputably real, so if evolutionary naturalism could not adequately account for it, then, . . . well, he was not sure what conclusion to draw.

For other people, *language*, with its intricacies and subtleties and poetry, provides an opening. For still others, *land*—fields, mountains, forests—offers a glimpse. *Death* can be yet another source of insight: “Speak of death, stand up and uncover the head in respect for death, and you have stepped through the opening, something has come to you through the opening” (pp. 115–16).

Still another opening, Vining suggests, can be discovered by careful reflection on “the large fact of law” (p. 108)—and on our long-standing insistence in law on a distinction between the “authoritative” and the “authoritarian.” The latter—the exertion of physical power to force others to do what one wants—might be rendered intelligible in purely naturalistic terms. But real authority, as Vining understands it, is a different and more mysterious matter: authority is something that we understand not as coercing us, exactly, but as having an authentic claim on our attention and respect. What

33. “I do not think they believe what they seem to say. The scientist or mathematician speaking cosmologically does not cease to be a person speaking, and acting.” P. 12.

34. See *supra* note 9 and accompanying text.

35. “Let us use the word ‘spirit’ again until talk can go beyond it.” P. 123. Vining wonders whether “life” might be a better term but tentatively decides against it. Pp. 143–45.

is it that might have such a quality? The question cannot be answered in purely naturalistic and impersonal terms. Even so, we search for and believe in authority. The fact that we do this, Vining suggests, indicates again a belief in something beyond the naturalistic.³⁶

On a more intimate level, perhaps the most pervasive and important opening is simply the presence of other people—of human beings. Speaking under the constraint of theory, of course, we might assert that humans are merely complex systems of particles. But we do not believe this. Or at least we do not believe it when we have the “direct experience . . . of seeing a person and being seen as a person” (p. 124), or of actually “looking into the eyes of others” (pp. 123–24). In those moments we perceive “the extraordinariness of our individuality,” so that a “sense of life springs within us” and we know that there is more to a person than system and process and particles in motion (pp. 123–24).

F. *Holding the Line, Hopefully*

When we are being reflective and candid we know these things, Vining suggests. But under the pressure of a theory, we may be induced to tell ourselves otherwise—to reduce persons to objective processes—and we may also be induced to act on those inauthentic doctrines. The moral atrocities of the twentieth century were grotesque manifestations of this possibility. Dehumanizing racism and slavery are manifestations of the same possibility.

Horrible as they are, however, these enormities are in a sense still confined: in scientific experimentation and in slavery only particular classes of persons are relegated to non-person status. The claims of naturalistic total theory, by contrast, would have more catastrophic implications: the person would be negated entirely. Vining more than once makes the point that the view of persons that is advocated by the proponents of total theory is a sort of universalization of the view taken of Jews and blacks in fascist and slave regimes: in total theory “[a]ll humanity is the target.”³⁷

His concern is not confined to humanity, however. Though much of the discussion works from what he takes to be a common distinction between humans and other animals—between the child and the sparrow—Vining himself doubts that, viewed as a *moral distinction*, this line can hold. We react with moral outrage—or at least we do if we have not been deformed by culture or theory—when we learn of experimentation on humans. Most of us may not instinctively react in the same way to experimentation on nonhuman animals. But our different attitudes may merely show that we are

36. Pp. 67–70, 103–08. This particular line of reflection is developed more fully in Vining’s earlier work. See *supra* note 7.

37. Pp. 26–27. Although the nature of the presentation is quite different, the viewpoint here and through much of the book is reminiscent of C.S. Lewis’s small classic, *THE ABOLITION OF MAN* (1944). The similarities to Lewis are sufficiently strong that it is hard not to see in the book’s title—*THE SONG SPARROW AND THE CHILD*—an allusion to the Oxford pub known as “The Eagle and the Child” or “The Bird and the Baby” in which Lewis regularly met with J.R.R. Tolkien and others to read and discuss each others’ work.

under the same kinds of reflective disabilities with respect to animals from which the researchers in Manchuria and Germany suffered with respect to humans. Vining suggests that if we look at an animal “eye to eye,” if we really look and reflect, we will see that the moral divide we often draw between humans and other animals is unsustainable (p. 143). “The strictest ‘rationalist,’ most fastidious in his arguments, who has a dog, who nuzzles it and cares for it, and weeps when it dies, may not be a strict rationalist in actual beliefs” (p. 17).

The point is powerfully made, I think, in an incident recounted by Timothy Jackson:

Walking dully along Temple Street in New Haven, one March day in 1979, I awoke from a rationalist’s dream. I heard over my right shoulder the screeching of tires, then a loud “Thump!” followed by horrific howling. I turned to see a beautiful black Labrador retriever staggering along the side of the road with blood dripping from its nose and mouth. It was instantly clear, to me and the other pedestrians transfixed on the sidewalk, that this dog was doomed. Its internal injuries from being hit by the car, which did not stop, were so severe that nothing could be done. It was only a matter of time . . . and time seemed to clot more and more slowly with each high-pitched “Yelp!” from the beast. It obviously did not know how to die, because it came up to two of us in front of Timothy Dwight College and seemed to look imploringly into our eyes for some sort of explanation. I suddenly felt the need to beg pardon.

Partly inspired by Kant’s speculation that animal subjectivity is “less even than a dream,” I had just two months before written a graduate seminar paper arguing that animals don’t feel morally significant pain. . . . Now, confronted by the Lab’s agony, I saw how absurdly callous and callow this opinion was. I did not go through any elaborate process of reasoning; I simply felt for the dying dog so obviously in pain and so needlessly undone. As it slumped down in a patch of grass, I was touched by its misery and ashamed of myself.³⁸

Vining’s questioning of the line between song sparrow and child does not lead him to any particular recommendations for terminating research involving experimentation on animals. On the contrary, he acknowledges that such research will often be warranted, just as there are situations in which *human* lives must be sacrificed for the benefit of other humans. More generally, Vining acknowledges that economics—the “dismal science” of making tradeoffs—has its necessary domain. But we will make the tradeoffs differently, he suggests, if we acknowledge the moral status of the subjects we are sacrificing (pp. 146–48).

Nor is the point merely that nonhuman animals should be included along with humans in the class presumptively entitled to concern and protection. That sort of agenda would immediately raise boundary questions. What kinds of animals should be included in the class deserving of respect and

38. TIMOTHY P. JACKSON, *THE PRIORITY OF LOVE: CHRISTIAN CHARITY AND SOCIAL JUSTICE*, at xii–xiii (2003).

concern? Dogs, cats, and dolphins? Snails? Amoeba? *Only* animals? Vining notes the issue but does not dwell on it: he simply says that deciding where to draw the line between what is and is not morally valuable—between “spirit” and mere particles in motion—requires ongoing reflection (pp. 142–43). We might draw the line in a variety of places: Vining does not pretend to tell us exactly where to draw it. That is not the book’s purpose.

Its central purpose, rather, is to prevent the obliteration of the line itself by the claims of total theory in the way that so many theorists and scientists allow, at least if we take their statements at face value. Everything is particles and force fields, process and system. So say the theorists. But Vining’s reflection is a powerful affirmation that we—and they, the theorists themselves—do not really believe this. To assent to this creed would be “a form of death, a giving up, a farewell” (p. 20). Conversely, by resisting the claims of total theory we can hold onto the hope with which the book ends—for an eventual “convergence of scientific and other forms of thought” in which “the scientist in all [is] no longer overshadowed by the antiscientist in any” (pp. 148–52, 135).