

Levy, Neil. *Bad Beliefs: Why They Happen to Good People*. Oxford: Oxford University Press, 2022. ISBN: 9780192895325; 224 pages

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This slender and very clearly written book challenges an influential view that seems to be supported by social and cognitive science: that outside domains where there is familiarity and effective feedback, people are by and large rather irrational. This irrationality is said to be hardwired in our cognition and, say, makes us receptive to demagogues and explains why many of us are scandalously politically ignorant. This popular view is supported not just by survey data, but also by large number of experiments that provide purported evidence for rationality deficit models of human nature.

By contrast, Neil Levy, argues that what he calls ‘bad beliefs’ are caused by ‘polluted’ epistemic environments in which the proper functioning of higher order evidence and cues is undermined or corroded.<sup>1</sup> Often this epistemic pollution is the work of strategic (even manipulative) political agents. But cues are generally sources of information and, thus, reasons, *not* necessarily manipulation. In fact, they can be manipulated in virtue of the fact that they are treated as reasons or reliable sources.<sup>2</sup> In order to make this position plausible, Levy offers a novel account of belief formation and its nature. In particular, many very important beliefs result from the (rational) practice of deference and are often largely off-loaded on the environment. Levy is especially interested in explaining the widespread existence of bad beliefs and drawing solutions from this explanation to prevent or undermine the prevalence of bad beliefs.

The previous two paragraphs do not convey how the book is animated by great concern over unfolding human-induced climate change. Levy seems to hold that because the populace holds a number of bad beliefs “in defiance of the scientific authorities,” (xi) political decision-makers are unwilling or unable to act on the dire warnings of climate science.<sup>3</sup> There is, thus, a real urgency to Levy’s writing which is peppered with illustrations from recent political life.

In what follows, I first explain what Levy means by ‘bad belief.’ In order to facilitate discussion, I also introduce a further term, ‘authoritated belief.’ I then provide a critical survey of each chapter followed by a discussion of Levy’s methodology. I conclude with reflections that put Levy’s project in a wider historical and methodological perspective.

A bad belief “is a belief that (a) conflicts with the beliefs held by the relevant epistemic authorities and (b) held despite the widespread public availability either of the evidence that supports more accurate beliefs or that the relevant authorities believe as they do. The “relevant epistemic authorities” are those people and institutions that are widely recognized as being in the best position to answer questions in the domain.” (xi) Levy is disarmingly honest that this definition is incomplete. For example, presumably the ‘conflict’ must involve some kind of salience condition (and not be concerned with details irrelevant to public policy). One suspects

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<sup>1</sup> Such pollution is the effect of what one may call ‘epistemic weapons.’ See Pettigrew, Richard. "Radical epistemology, structural explanations, and epistemic weaponry." *Philosophical Studies* 179.1 (2022): 289-304.

<sup>2</sup> I thank Richard Pettigrew for discussion of this point.

<sup>3</sup> All page-numbers in parentheses without further reference are to Levy’s book.

that that the ‘widely recognized’ condition presupposes further qualification. Levy’s book often brushes with broad stroke, and invites charitable engagement from his readers.

To facilitate discussion, let’s call the non-expert held believer’s endorsing or adopting the beliefs held by the relevant epistemic authorities (at a suitable level of simplification), *authoritaded* belief.<sup>4</sup> This comes in degrees because one can be at varying epistemic distance (due to one’s skill or understanding) from the expert’s view in ways that do not prevent support for policies that follow from authoritaded belief. In their pure form, authoritaded beliefs are the joint product of proper functioning science, an unpolluted epistemic environment, and proper tracking of higher order evidence and cues by the population. With that in place, I summarize each chapter with this qualification that I postpone discussion of the preface until my treatment of Levy’s methodology.

In Chapter 1, “What Should We Believe About Belief?,” Levy defends the view that belief matters because of the role it plays in “explaining and causing behavior...and [reasonably] accurate belief is required for successful navigation of the world” (2) As Levy emphasizes, such navigation can be high stakes because “some of the most significant political challenges of our time are, in part, battles over belief.” (2)<sup>5</sup> Many political challenges and crises are, in fact, the *effect* of “those who...manipulate us by targeting our beliefs.” (4) In context this claim is left without evidence, but throughout his argument and the examples he provides he draws on the excellent *Merchants of Doubt* (Oreskes & Conway 2011) to secure this conclusion.

The main point of chapter 1 is to begin his criticism of accounts, popular in recent cognitive science and popular culture, that “explain bad belief as a result of rationality deficits,” (2-3) that is, heuristics or outright biases which generate failures to process information properly. The rationality deficit model one encounters in the literature associated with dual processing theories made famous by Kahneman and Tversky (24-35), and popular in ‘behavioral economics.’<sup>6</sup> In particular, while sifting through philosophical and social psychological literature, Levy is very critical of views that treat belief as identity-constituting when this is distinct from action-guiding belief, as articulated by Kahan and others. (12-13)

In discussing such rationality deficit views, Levy foreshadows one of his key insights: that *cues* are a *species* of evidence or information to agents (35).<sup>7</sup> So, they cannot be used – as dual process theorists are wont to do – as a means to explain why people are not responding rationally to evidence. For, “in responding to social cues, we respond to reasons.” (35)<sup>8</sup> Why this is so is explained throughout the remainder of the book.

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<sup>4</sup> I avoid ‘good and correct belief’ because of the moral and ethical associations these terms would carry.

<sup>5</sup> He does not consider that these belief battles may be proxies for battles over diverging interest. I return to this below.

<sup>6</sup> In his critical discussion of rationality deficit accounts Levy does not directly challenge the (rather thin) view of rationality these accounts presuppose. This critique is, for example, an important feature of the strategy of Rizzo, Mario J., and Glen Whitman. *Escaping paternalism: Rationality, behavioral economics, and public policy*. Cambridge University Press, 2019, especially chapters 2-3. Indirectly Levy often seems to rely on an ecological view of rationality (130-131; 142-3; 149-159), but this is not necessary to his argument. He has informed me that he thinks that “a process is rational in virtue of how it processes information,” and though he never uses the word in the book, he is “actually a Bayesian of some sort, and Bayesianism is a paradigm non-ecological view of rationality.” (Communication to the author, July 29, 2022)

<sup>7</sup> This meets the behavioral economist, who uses deviations from a rational choice model as her strategy to make claims about purported irrationality, on her own turf.

<sup>8</sup> We can find an anticipation of something close to this idea in Rizzo, Mario J., and Glen Whitman. *Escaping paternalism: Rationality, behavioral economics, and public policy*. Cambridge University Press, 2019, p. 418:

Chapter 1 also introduces an important political theme of the book: shifting opinion on pre-existing beliefs when there are channels of reliable and disconfirming feedback is very difficult (4-5). But “manipulation can succeed” when there are few pre-existing beliefs or when people must rely on others in virtue of the “selectivity of epistemic vigilance.” (5) And this form of manipulation aims at promoting doubt about some epistemic authorities and to suggest that on some contested issues the “science isn’t settled.” (5) Or the strategy can be simply to create confusion or disorientation (6). And this allows calls to action to be delayed or to be lowered in priority. (5) This political tactic has been used in “the battle against the regulation of DDT, of chlorofluorocarbons, of the emissions of acid rain, as well as tobacco and fossil fuels.” (6) Stateside such manipulation has also been used in battles over Darwinism and creationism (24ff), and as Levy notes, with less success, Holocaust Denial (95-106). Levy is scrupulous in reminding his (educated liberal, urbane, and/or left leaning) audience that while he focuses mostly on right wing epistemic pollution in many cases the association of such pollution with the right wing is contingent. In fact, the first chapter reminds the reader of the topical relevance of *Bad Beliefs*: we are introduced to partisan polarization (30-32) and fake news (19-22) among other hot topics.

Chapter 2, “Culturing Belief,” presents the significance of the extended cognitive division of labor to and within cultural evolution, which Levy treats as intrinsic to human nature. It introduces this theme with a lovely discussion of two nineteenth century episodes in which indigenous, situated knowledge is part and parcel of cultural knowledge – sometimes only available as custom -- that can aid survival, even flourishing in harsh environments, where outsiders armed with modern science and technology may well perish. (36-39) Cultural evolution allows one to detect a signal in a noisy background even if one does not understand the nature or causes of the signal. (39)<sup>9</sup> The episodes also illustrate the significance even functionality (to survival) of imitating local behaviors, and they have the nice rhetorical effect of suggesting that leveraging the fruits of the cognitive division of labor is not unique to ‘western’ science. The survival advantage of science is, in fact, context relative even if the kind of knowledge it produces is quite general.

Levy’s account of cultural evolution is “non-genetic, its effects are primarily on the fitness of the organism (and perhaps the group), not on the fitness of the units of culture—if there are any, in any meaningful sense—themselves. (These could be compatible.) Beliefs, technologies and practices make an obvious difference to our fitness (given that they make a difference to how we behave), and therefore affect our biological fitness...Cultural evolution produces adaptive changes in practices or beliefs without (or independent of) changes in gene frequencies.” (41) This account is, thus, explicitly opposed to accounts of cultural evolution

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“we find it peculiar (at best) to treat mere provision of information as necessarily paternalistic...from the perspective of inclusive rationality, the focuses would be on the *accuracy of messages* – both in content and interpretation.” (emphasis in original) It’s the very importance of social cues that makes them attractive to would be manipulation.

<sup>9</sup> A century ago Russell had noted the same possibility within an imported, scientific culture: “the manner of life produced by science can be taken over by populations which have only certain practical rudiments of scientific knowledge; such populations can make and utilize machines invented elsewhere, and can even make minor improvements in them. If the collective intelligence of mankind were to degenerate, the kind of technique and daily life which science has produced would nevertheless survive, in all probability, for many generations. But it would not survive forever, because, if seriously disturbed by a cataclysm, it could not be reconstructed.” Bertrand Russell “Is Science Superstitious?” in *Sceptical Essays* (1928) London: George Allen & Unwin, p. 35.

that focus on the fitness of the units of culture (so-called memetics), but compatible with co-evolution of genes and culture.

As an aside, Levy's way of understanding cultural evolution *lends* itself to an account of cultural group selection and group cultural differentiation. While it goes unmentioned, this is a feature and not a bug of Levy's approach because he is ultimately interested in explaining group differentiation and group polarization ('group'/'groups' and their cognates occur very frequently in the book). Here Levy's reliance on cognitive science and – despite his clear admiration of Boyd and Richerson -- relative lack of attention to some of the social sciences (like anthropology, sociology, and political science) means that the discussion of the repertoire of pathways that cultural evolution can take is limited.<sup>10</sup>

Even so, Levy offers an eye-opening account of deference, prestige bias, conformist bias, social referencing, and custom. Levy skillfully surveys ongoing debates between the so-called California School (e.g., Richerson, Henrich, and Boyd) and the so-called Paris school (led by Dan Sperber, but including Mercier). Drawing on work by my former colleague Maarten Boudry, Levy defends the California school's emphasis on replication and imitative practices, but by emphasizing that these involve intelligence and considerable tracking of evidence. (46-48)

Much of Chapter 2 is devoted to emphasizing the social nature of the sciences. And, in particular, it is used to argue for the claim that it produces knowledge distributed among a network, protocols, material culture such as tools and machinery (58). "Science does not free us," Levy writes, "the animals we are, from epistemic dependence; if anything it increases it." (58)<sup>11</sup>

Chapter 3, "How our Minds are Made Up," calls attention to the fact that in some areas of life shifts of individual and public opinion can be rather dramatic.<sup>12</sup> Levy argues that this is an *effect* of "our adaptive disposition to outsource belief to other agents."<sup>13</sup> (61) He argues this is true within science and among ordinary people (64). And, in fact, drawing on work by Andy Clark, especially, he argues that many of our beliefs are 'shallow' in two senses: (i) that we would be willing to abandon them easily, (65) and (ii) "we lack detailed internal representations of our beliefs." (69; 71. This is also true of memory. (74)) And, this shallowness of belief entails that "under a variety of circumstances, we will tend to construct or reconstruct our beliefs on the spot, rather than recalling them, with attention to cues to belief central to this reconstruction." (69)<sup>14</sup> As Levy notes, this has important consequences for thinking about what opinion polling shows (70), and also for why contested concepts like 'freedom' and 'equality' may well be underspecified. (79)

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<sup>10</sup> I am thinking of, say, cultural schismogenesis as discussed by Graeber, David, and David Wengrow. *The dawn of everything: A new history of humanity*. Penguin UK, 2021.

<sup>11</sup> In wider context, Levy cites Millgram's (2015) *The Great Endarkenment: Philosophy for an Age of Hyperspecialization* (Oxford and New York: Oxford University Press). This book also draws on Oreskes & Conway, as well as Latour, but does not engage with STS very broadly.

<sup>12</sup> Levy's examples are drawn from recent politics, but he could have mentioned fashion and shifts in market sentiments in financial markets.

<sup>13</sup> In the case of modern financial markets these beliefs are also outsourced to algorithmic devices.

<sup>14</sup> Somewhat surprising Levy does not use Clark's 'predictive brain' hypothesis to strengthen his argument. This, too, tends to treat internal representation as thin. See Clark, Andy. "Whatever next? Predictive brains, situated agents, and the future of cognitive science." *Behavioral and brain sciences* 36.3 (2013): 181-204.

Levy defends the idea that such outsourcing is “ecologically rational.” (77) This is a kind of indirect or average (or group) rationality. But it is also “directly rational: being open to cues for what others believe is being open to *reasons*.” (77, emphasis in original). And this helps explain the findings of the voter ignorance literature. Drawing on Zaller’s classic *The Nature and Origins of Mass Opinion*, Levy claims we look to signals from elites to infer what to believe (78-79). To quote Zaller – who is explicitly paraphrasing Anthony Downs – ordinary folk “are rationally ignorant about politics.”<sup>15</sup>

Downs would also emphasize the role parties play in conveying signals. I mention Downs because of his insight that political agents and parties are not “interested per se in helping people who are uncertain become less so; they want to produce a decision that aids their cause.”<sup>16</sup> To put this in the lingo of Levy (especially chapter 5), political agents, who are sources of cues to others, may well have strong incentives to *pollute* or weaponize the epistemic environment. For them it pays to leave our “individual cognition even worse off than it might have been.” (110) We may say that diverging interests and (some pockets of) concentrated capital are triggering causes of epistemic pollution strategies either to prevent policy or, in the resulting confusion, to cover its tracks. It’s natural then to consider the situation of systemic bad belief a kind of “tragedy of the commons.”<sup>17</sup>

Of course, Downs’ underlying point was already familiar to Plato. The Ship of State analogy illustrates (inter alia) how in democracies, some political elites may well come to think it’s in their interest to undermine the practice of deference to those that have genuine scientific and practical skill, and to create widespread confusion about the nature of such knowledge.<sup>18</sup>

A key pay-off of Levy’s argument is, thus, that what he calls ‘first-order ignorance’ is often quite rational ecologically, “higher-order ignorance—ignorance, perhaps, of the very fact that first order ignorance is not a problem—” may well be very important. (81) Other people and institutions routinely provide us with cues of what one *ought* to believe, that is, authorized belief. That a “proposition is socially approved is higher-order evidence that bears on its truth.” (81) This is also true of mechanisms like asking oneself ‘what do people like me believe?’ (82) This means it is often okay to shrug one’s shoulders when one cannot explain why a certain practice (say astrology) should be rejected, and “rely on others to tackle them for us.” (94) And often it is silly to do one’s own research in such cases, and, as Kuhn emphasized, within science it is often rational to ignore anomalous evidence (95; see also the cost-benefit argument at 99).<sup>19</sup>

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<sup>15</sup> J.R. Zaller (1992) *The Nature and Origins of Mass Opinion*, Cambridge: Cambridge University Press. See also Downs, Anthony. "An economic theory of political action in a democracy." *Journal of political economy* 65.2 (1957): 135-150. Down would have been familiar with Knight’s footnote that “It is evident that the rational thing to do is to be irrational, where deliberation and estimation cost more than they are worth” (Frank Knight *Risk, Uncertainty, and Profit*. Hart, Schaffner, and Marx; Houghton Mifflin, 1921, p. 67).

<sup>16</sup> Downs (1957), op. cit. pp. 139-140.

<sup>17</sup> I thank Nathan Ballantyne for putting it like this.

<sup>18</sup> *Republic*, 488a-d. Arguably while defending the populace’s capacity to choose its leaders, Machiavelli makes the same point in his attack on the *grandi* in *Discourses on Livy*. See Bellamy, Richard. "The Paradox of the Democratic Prince: Machiavelli and the Neo-Machiavellians on Ideal Theory, Realism, and Democratic Leadership." *Politics Recovered*. Columbia University Press, 2018. 166-193.

<sup>19</sup> As Richard Pettigrew noted to me, ignoring outlying data “seems less to do with expert deference and more to do with good statistical reasoning. The paradigmatic argument for this point “is Hume on miracles!” In addition on my view, the most robust sciences are capable of turning outlying data, even discrepancies, into higher quality evidence or second order evidence. For striking examples, see Smith, George E. "Closing the loop." *Newton and empiricism* (2014): 262-352.

Levy echoes here the then future Nobel laureate, the Chicago economist, George Stigler, who, while drawing on Kuhnian and Mertonian ideas, offers a cost-benefit argument for not responding to certain kinds of objections in science:

“There is merit in excluding the lunatic from the discourse. Occasionally the lone dissenter with the absurd view will prove to be right—Galileo with a better scheme of the universe, a Babbage with a workable computer—but if we gave each lunatic a full, meticulous hearing, we should be wasting vast time and effort.”<sup>20</sup>

Shaping minds turns on the “social and institutional cues on which beliefs depend.” (84) And so when what we might call thought-leaders fail to provide the right cues or a relatively uniform cue this can have disastrous effects. This is largely right, but Levy skates over a lot of complex relationships between first and higher order evidence and tends to make things easy for himself by stipulating that in many of the salient cases he (and his scientifically literate audience) is interested in there *is* (an epistemically robust) consensus over the higher order evidence.<sup>21</sup>

At the start of chapter 4, “Dare to Think?,” Levy draws an important conclusion, “we need to ensure the scaffolding of better beliefs.” We need “to manage the epistemic environment. Bad beliefs are produced by a faulty environment and better beliefs are best promoted by environmental engineering.” (87) How to do such environmental epistemic engineering, Levy discusses in Chapter 6. Chapter 4 is devoted to criticizing views that put too much responsibility on individual knowers (so-called virtue epistemology). Levy offers one long argument (appealing to cost-benefit analysis, ecological rationality, and the distribution of skill sets, etc.) for off-loading the verifying of claims on authoritative others as opposed to demanding vigilant practices of individual verification and epistemic attainment (as the virtue epistemologist might suggest).

Chapter 5, “Epistemic Pollution,” is presented as a continuation of the argument against virtue epistemology. But its significance to Levy’s argument is second to none: on his view “just as we urgently need to repair and to manage our natural environment, I’ll argue we must repair our epistemic environment.” (111) This kind of language -- see also the use of “restoration of trust” (126) -- suggests that a relatively clean epistemic environment is possible and was had *once*. We find such a view presupposed across a wide range of political and social theorists (from deliberative democrats, adherents to Rawlsian reflective equilibrium, and even libertarian Chicago economists). It also presupposes that there is a proper ‘we’ that can be entrusted with such a task in a relatively uncontested way.

But these commitments actually go against Levy’s own evolutionary argument. Even if one thinks that Hobbes and Hume are unduly pessimistic that only a limited unity is possible, our

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<sup>20</sup> George J. Stigler, “The Unjoined Debate,” *The Citizen and The State*, 1975, 3-4. Unlike Stigler and Levy, I think keeping intellectual outliers within a scientific discipline can be defended on epistemic and moral grounds: Lefevre, Merel, and Eric Schliesser. "Private epistemic virtue, public vices: moral responsibility in the policy sciences." *Experts and Consensus in Social Science*. Springer, Cham, 2014. 275-295.

<sup>21</sup> I return to this below. For a recent survey that explores such issues in the vernacular of formal philosophy, see Dorst, Kevin. "Higher-order evidence." *The Routledge Handbook for the Philosophy of Evidence*. Routledge (2020). It also notes that there are different kinds of higher order evidence. I thank Richard Pettigrew for calling my attention to it. See also Lasonen-Aarnio, Maria. "Higher-order evidence and the limits of defeat." *Philosophy and Phenomenological Research* 88.2 (2014): 314-345 for the existence of important constraints on all strategies to deal with dilemmas generated by higher order evidence.

epistemic environment is in many ways a social and politicized environment. Within this environment there will be many *strategic* actors who may have incentives and interests to pollute it (recall Plato's Ship of State and Downs above). This *is* the human condition.

In response, Levy might be tempted to argue “we don't get epistemic pollution on a wide scale until you get something to pollute and an incentive to pollute it. There needs to be both a source of knowledge taken to be authoritative and an incentive to obscure it, and the conjunction is pretty rare until the rise of science.”<sup>22</sup> I am no anthropologist, but I suspect (nearly) all human societies have some form of authoritative ‘knowledge’ – religion, rituals, shamanism, councils of the maternal elders, oracles, etc. -- precisely because our environment is always at risk of epistemic pollution from *other* humans.<sup>23</sup> This seems to be a conclusion that follows from Levy's own argument.

Levy might also plausibly suggest that the way we have organized science is meant to overcome this feature of the human condition. And, perhaps, Levy really means to suggest that with science we have, in principle, a pristine mechanism that needs to be shielded from pollution, and the pollution of science is new.<sup>24</sup> I offer four reservations in order to highlight what I take to be a structural weakness of Levy's approach.

First, as Levy recognizes epistemic pollution is also possible within science.<sup>25</sup> As the founder of public choice philosophy of science, Gordon Tullock, observed: due to financial incentives, it is nearly impossible to keep science pure: “Not all of the advocates of tariffs, of course, are hired by ‘the interests.’ But the existence of people whose living does depend on finding arguments for tariffs and the further existence of another group who think that maybe, sometime in the future, they might need the assistance of either someone who believes in tariffs or an economist who *is in this racket* makes it possible for them to continue to publish, even in quite respectable journals. Thus a dispute which intellectually was settled over a century ago still continues.” The point generalizes.<sup>26</sup> There will be circumstances one may well wonder if an apparent scientific consensus is bought to some degree by pharmaceutical interests and monopolistic grant agencies.<sup>27</sup>

Second, while Levy is very sensitive to the replication crisis (xix-xx; 115ff), he tends to assume that generally science is what he calls “well-organized and properly stress-tested....one in which problems are tackled from multiple angles by groups with different interests, aims and agendas.” (57 n11; see also 109) Unfortunately, obtaining results and stress-testing often pull in different directions within science. In many fields the norms are not conducive toward stress-testing (in part because they lack the robust back-ground theories or high quality data that

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<sup>22</sup> Levy personal correspondence with the author, July 29, 2022.

<sup>23</sup> See Johan Goudsblom. *Fire and Civilization* London: Penguin, 1992.

<sup>24</sup> I thank Maarten Boudry for the suggestion.

<sup>25</sup> This is already thoroughly documented in Carson, Rachel. *Silent Spring*. Houghton Mifflin Harcourt, 1962. Arguably the significance of *Leviathan and the Air-Pump* was its argument that science was always entangled with power and politics.

<sup>26</sup> Tullock, Gordon. *The Selected Works of Gordon Tullock, vol. 3 The Organization of Inquiry*. Liberty Fund, 1966: Chapter VII: The Backwardness of the Social Sciences. pp. 158-159.

<sup>27</sup> As I was drafting this review *Science* (377:6604), 22 July 2022), published a paper, “Blots on a Field,” by Charles Piller that shows how “A neuroscience image sleuth finds signs of fabrication in scores of Alzheimer's articles, threatening a reigning theory of the disease.”

<https://www.science.org/doi/epdf/10.1126/science.add9993>

See also, Marek, S., Tervo-Clemmens, B., Calabro, F.J. et al. Reproducible brain-wide association studies require thousands of individuals. *Nature* 603, 654–660 (2022). <https://doi.org/10.1038/s41586-022-04492-9>

facilitate it),<sup>28</sup> but have a slant toward confirmation (because stress-testing would suggest there is nothing to report).<sup>29</sup> After all, CVs and journals need to be filled, and tenure granted. At the least he owes an account of what for the purposes of public policy and diagnosing epistemic pollution a well-organized and properly stress-tested science is.

Third, many sciences study epistemic domains that even in the best circumstances are very difficult to turn into robust enough knowledge. In such domains ignorance is a natural condition not the effect of epistemic pollution. Until quite recently such natural ignorance was pervasive: the human condition just is that we are ignorant by default.<sup>30</sup>

Fourth, Levy (echoing views that are conventional since, say, Kuhn or Aumann)<sup>31</sup> assumes that consensus is a natural *effect* of proper functioning science. But the articulation and, perhaps, even formation of such a consensus, when not a matter of mere text book science, has to be organized as it often is by governments. This is especially true of the example that is key to Levy's argument. In order to generate an IPCC, "Representatives of IPCC member governments meet one or more times a year in Plenary Sessions of the Panel. They elect a Bureau of scientists for the duration of an assessment cycle. Governments and Observer Organizations nominate, and Bureau members select experts to prepare IPCC reports."<sup>32</sup> To treat the IPCC reports as a cue, you have to trust that the government selection process is sufficiently epistemically pure; plenty of citizens may well have prior experiences that block this. For, as Levy notes himself the "record of government is not encouraging when questions come to be politicized." (129)<sup>33</sup> I do not mean this paragraph as grounds for climate science skepticism, but rather to suggest there are a lot of important questions that Levy did not consider about the nature of authorized belief and practices of deference in *impure* and *partially* impure epistemic environments.

I do not mean to deny the significance of the idea of epistemic pollution. I expect to use the concept myself going forward. Levy offers a very lucid presentation of the "novice-expert problem"; the problem of identifying a genuine or a reliable expert among those taking conflicting stances on an issue within their sphere of (apparent) expertise." (111) According to Levy our predicament is that "cues for expertise don't correlate well with its actual possession." (112) Levy argues, plausibly, this is the effect of manipulative strategies. He also notes that epistemic pollution "may be emitted by legitimate institutions of knowledge production." (115)

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<sup>28</sup> Smith, George E. "Closing the loop." *Newton and empiricism* (2014): 262-352.

<sup>29</sup> Schliesser, Eric. "Galilean Reflections on Milton Friedman's "Methodology of Positive Economics," with Thoughts on Vernon Smith's "Economics in the Laboratory"." *Philosophy of the Social Sciences* 35.1 (2005): 50-74. Lefevre, Merel, and Eric Schliesser. "Private epistemic virtue, public vices: moral responsibility in the policy sciences." *Experts and Consensus in Social Science*. Springer, Cham, 2014. 275-295. For more sophisticated versions of this point, see Stegenga, Jacob. *Medical nihilism*. Oxford University Press, 2018. And for a polemical example, see Phillippe Lemoine (December 4, 2020) "Lockdowns, science and voodoo magic" <https://necpluribusimpar.net/lockdowns-science-and-voodoo-magic/>

<sup>30</sup> I owe the insight and the formulation to Jeffrey Friedman, personal correspondence 15 August, 2022.

<sup>31</sup> Kuhn, Thomas S. *The structure of scientific revolutions*. University of Chicago Press: Chicago, 1970. Aumann, Robert J. "Agreeing to Disagree." *The Annals of Statistics* 4.6 (1976): 1236-1239. On the pre-history of this idea within philosophy and political economy, see Schliesser, E. "The Separation of Economics from Virtue: A Historical-Conceptual Introduction." *Economics and the Virtues: building a new moral foundation* (2015): 141-164.

<sup>32</sup> <https://www.ipcc.ch/about/structure/>, accessed 28 July 2022.

<sup>33</sup> In context, Levy's own point may be orthogonal to the use I make of the quote.



And he draws on recent modelling to remind us that even “genuinely well-conducted (but misleading) science” can shape policy makers to a false view. (117)<sup>34</sup>

Sometimes, the respectable media’s desire to be even-handed or to exhibit “balance” (118) may cause a similar pollution. And because everyone is aware of at least some sources of pollution, they may well adopt strategies (that track other cues) that unintentionally make things worse individually or collectively. (118-119) While recognizing his own epistemic limitations, Levy offers a number of policy reforms that are worth considering and familiar from discussions about the organization and communication of science in the wake of the replication crisis.

In Chapter 6, “Nudging Well,” Levy advocates for a species of nudging, which is a way of influencing people to choose that works “by changing aspects of the choice architecture.” (132) Nudges are often presented as manipulative and an instance of paternalism. They also seem to follow naturally from rationality deficit models. Levy quite rightly changes the terms of the debate by insisting that nudges are an instance of environmental cues that are themselves “reasons-providing.” (133) Better yet, they are ways to convey accurate information and provide evidence that we weigh ((135); so it’s odd they have been presented as violations of standard rational choice model).<sup>35</sup> Levy also argues against accounts of nudging that suggest nudges bypass rational cognition. (139) In response, Levy suggests that nudges influence our behavior because they convey information of higher-order evidence in favor of some option or another (139). And he argues, persuasively, that this is akin to an implicit testimony and that it is rational to be guided by testimony. (142) If this is right the standard objections to nudging lose most their force.<sup>36</sup>

However, I offer two qualification. First, it seems that Levy’s position is that in many contexts ordinary agents *recognize* nudges as a kind of implicit testimony or a cue that functions as a reason. If agents do not recognize it, it does seem like nudges are paternalistic (even when autonomy enhancing). It’s not entirely clear what Levy thinks of this. Levy might respond “suppose that A thinks that being given facts is manipulative. I give A facts, he thinks this is manipulative and (whether or not he realises it) he also responds to these facts in some manner that is a function of their content. Is this paternalism? I don’t see why. He may think it’s paternalistic, but I don’t see why I should agree with him.”<sup>37</sup> This may be settled by how one defines ‘paternalism,’ but here a lot turns substantively on how one conceives what the proper roles of governments are in the provision of information and what the effects will be on individuals over time if they become used to negligible search costs for *such* information. I also find Levy’s response unsatisfying because my point is about agents failing to recognize something as a cue, not about their disputing the value of cues.<sup>38</sup>

Second, Levy is explicit that nudges that rely on misinformation (say fake speed bumps painted on the road surface) or error are different in kind. He treats this as paradigmatic paternalistic interventions. (146) Levy is deliberately agnostic about their permissibility. From an ethical perspective that may make sense. But I find the stance odd because once it becomes known

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<sup>34</sup> O’Connor, Cailin, and James Owen Weatherall. *The misinformation age: How false beliefs spread*. New Haven Ct.: Yale University Press, 2019.

<sup>35</sup> See Rizzo & Whitman, op. cit.

<sup>36</sup> Of course, it does leave open how we should think about the effectiveness of nudging. See Maier, Maximilian, et al. "No evidence for nudging after adjusting for publication bias." *Proceedings of the National Academy of Sciences* 119.31 (2022): <https://www.pnas.org/doi/full/10.1073/pnas.2200300119>

<sup>37</sup> Personal communication with the author, July 29, 2022.

<sup>38</sup> I thank Boudry for discussion.

that *such* nudges (akin to noble lies) exist, you introduce pollution into the epistemic environment that contaminates *all* nudges. Levy may respond to that one “could stop talking about nudges” altogether or “at least engineer the concept so that it refers only to the higher order evidence ones or only to the non-higher order evidence ones.”<sup>39</sup>

The brief “Concluding Thoughts” reiterates the main argument and it reinforces the significance of the use of “environmental cues” as being “the use of higher-order evidence: it renders options salient to us.” (150) Let me now turn to a discussion of Levy’s method.

The book’s emphasis on the cognitive division of labor and the epistemic challenges this poses is itself presupposed in its methodology. *That* philosophy addresses the integrative challenges of the cognitive division of labor within all the sciences is called “naturalistic synthetic philosophy” by Levy (xviii).<sup>40</sup> In particular, the argument of *Bad Beliefs* “develops theories that systematize and interpret evidence from a broad range of sources, but especially from the cognitive sciences: cognitive and social psychology, the cognitive science of religion and work in cultural evolution.” (xviii)<sup>41</sup> Modern evolutionary theory is presupposed throughout the argument (28; 40ff, 55, 65, 149), including an account of cultural evolution developed in the second chapter. Such synthetic philosophy is a “tradition of post-analytic philosophy,” (xviii) because while it can draw on analytic philosophy its ruling theoretical virtues and success conditions are different from it.<sup>42</sup>

Throughout the argument of *Bad Beliefs*, Levy also engages critically with epistemology as practiced by analytic epistemology including its more recent turn (which Levy approves of) to social epistemology, which is the branch of epistemology concerned “with the epistemic workings and effects of social interaction and institutions.” (xix) In fact, in recent years within epistemology, there has been also a call for epistemology to be practical (again): to aim at “guiding belief formation.” (xix) Nathan Ballantyne calls this project, ‘regulative epistemology.’<sup>43</sup> As Ballantyne emphasizes and Levy recognizes, regulative epistemology is a return to philosophy’s roots--Levy explicitly mentions Descartes and Locke as illustrations of the project (88), and could have included Spinoza, Hume, and Smith amongst others. Arguably, Plato’s *Republic* is the *locus classicus* for the project of regulative epistemology, even though Plato’s Socrates is willing to combat epistemic pollution in much more far-reaching manner than Levy is (through extensive censorship, child indoctrination, and eugenics). It’s a weakness of the book that it is left unclear what the permitted limits are of Levy’s approach to regulative epistemology. If regulative epistemology and epistemic engineering become influential they will have to be combined with political philosophy, which has had its own ‘epistemic turn.’<sup>44</sup>

Levy’s regulative epistemology offers “practical precepts and advice on how to think better, in the pursuit of knowledge.” (88) Levy sets himself against the individualistic version of it, and advocates that we pay attention to “the social and institution contexts in which beliefs are

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<sup>39</sup> Personal communication with the author, July 29, 2022.

<sup>40</sup> ] Levy generously cites my Schliesser, Eric. "Synthetic philosophy." *Biology & Philosophy* 34.2 (2019): 1-9. I have not claimed originality for this approach to philosophy (or its name which goes back to Spencer).

<sup>41</sup> Unless otherwise noted, all citations are to Levy’s *Bad Beliefs* by page-number.

<sup>42</sup> Levy is silent on how, exactly, to distinguish analytic from his synthetic philosophy, but it is clear that he is not interested in careful conceptual clarification with detailed cautious arguments, but rather drawing on the sciences to create a theory that can improve the world.

<sup>43</sup> Levy cites Nathan Ballantyne (2019) *Knowing our Limits*, Oxford: Oxford University Press.

<sup>44</sup> Landemore, Hélène. "Beyond the fact of disagreement? The epistemic turn in deliberative democracy." *Social Epistemology* 31.3 (2017): 277-295.

acquired and transmitted” (p. 111) with the aim of understanding and improving *these*. Ballantyne and Levy understand themselves as ‘inclusive’ because they draw on other projects, including analytic philosophy. Thus, Levy is an “inclusive naturalistic synthetic regulative philosopher.” (xix)

What makes Levy’s approach to this problem of bad beliefs so interesting is that he understands the cognitive division of labor as *intrinsic* to ordinary social life as much as it is to all scientific practice and that it is collectively rational to do so in both areas. So, that within the cognitive division of labor *deference* to appropriate parties (e.g., relevant epistemic authority) is both key to its proper functioning *and* a challenge to its proper functioning. (xiii; 55-56) In addition, Levy argues that “those who come to hold bad beliefs do so for roughly the same sorts of reasons as those who come to hold good beliefs.” (xi) Those who hold bad beliefs and those that hold authoritaded ones are fundamentally alike in nature; it’s not a question of who is rational and who is irrational (smarter or not, etc.).

Levy is, thus, what I have called a Methodological Analytic Egalitarian (MAE) in which the positing, for modeling/theoretical purposes, of homogeneous human nature is such that we’re equal for theoretical (including moral) purposes.<sup>45</sup> Observed differences are taken to be due to cultural, educational, institutional, developmental (etc.) factors.<sup>46</sup> MAE also includes the desideratum to put the theorist inside the theory (as Levy’s book nicely illustrates) because the theorist is subject to the same epistemic environment and incentives.

I mention MAE for another reason. The way I understand synthetic philosophy it requires a theory or model that is the glue for the integration or synthesis of the sciences to draw on. This forms a kind of disciplining of the synthetic philosopher by making transparent what’s actually the source of synthesis and not merely random (albeit potentially successful) arbitrage or bricolage. For, it would be natural to read Levy as simply collecting scientific results he approves of. But on my reading of Levy, something like a commitment to MAE tacitly constrains his theorizing and unifies it.

Now, importantly, among the sciences, climate science is itself among the most heterogeneous and interdisciplinary drawing on many different kinds of sciences and ranging over many different domains at different levels of scale (and so on). (54-55) Climate science is only possible as the *effect* of the cognitive division of labor and presupposes many practices of deference to epistemic authority and integration of the sort that synthetic philosophy provides. As Levy notes “epistemic dependence is routine in science: dependence on others for data, for tools and techniques, and for theories.” (55) This is, of course, inscribed in deep material dependence on others.<sup>47</sup>

Levy is disarmingly frank that he accepts the epistemic authority of others and *thereby* holds the findings of climate science(s) to be true and actionable. He repeatedly admits that his

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<sup>45</sup> The *Locus Classicus* is Peart, Sandra, and David M. Levy. *The street porter and the philosopher: conversations on analytical egalitarianism*. University of Michigan Press, 2009.

<sup>46</sup> Crucially, the expression of genetic differences are on this view also triggered by the environment.

<sup>47</sup> Levy ignores that within science, even climate science, this dependency on others is not uncritical. As Michael Polanyi urged, scientists from nearby disciplines and related skillsets do act as an epistemic check on uncritical acceptance. Schliesser, Eric and Eric Winsberg. 2020. “Climate and Coronavirus: The Science Is Not the Same.” *New Statesman*, March 23.

<https://www.newstatesman.com/politics/economy/2020/03/climatecoronavirus-science-experts-data-sceptics> (accessed August 8, 2022). Winsberg, Eric. *Philosophy and climate science*. Cambridge University Press, 2018.

authoritated belief includes material he does not understand and probably will never understand because climate science poses many intellectual barriers to entry. (96; 99-100) There is, thus, a reflexive quality to the methodology of his overall argument: most of the true scientific views we come to hold, we do so as authoritated belief. (This kind of reflexivity is characteristic of MAE.) And this means that we rely on deference, which is the main way “we come to know about the world *and* generate further knowledge. (xi; emphases added) So, crucially, “accounting for why some of us go astray in belief formation requires us to understand mechanisms of deference, the features of agents and the world that lead us to trust one source rather than another, and how testimony can be implicit as well as explicit.” (xi)

Many of Levy’s insights are not dissimilar of what one may find in the sociology of knowledge, public choice philosophy of science,<sup>48</sup> and STS. While there is little extensive engagement with those literatures, Levy captures some of their more important insights in clear and accessible language. It would make for great undergraduate text book in science and engineering courses because Levy is simultaneously very deferential to the sciences and invites the reader to ask challenging questions about his or her own access to it.

Let me close with three final observations.

First, by Levy’s own lights epistemic pollution is primarily the effect of motivated interests that (as Downs foresaw) pursue strategies that prevent public opinion from settling on the truth. He thinks this is what prevents public policy action; this is why he claims that “some of the most significant political challenges of our time are, in part, battles over belief.” (2) Stated as such there is a clear mechanism assumed here and, as Levy notes, this is a collective action problem. (127) But I wonder if this problem is really *best* tackled by cleaning up the epistemic environment. If the motivated interest, which represents concentrated power, can continue to exist it will find ways to undermine the epistemic environment. One has to tackle the concentrated interests before (or at least alongside) one can hope to clean up the epistemic environment to some degree.<sup>49</sup> That is, Levy tacitly assumes voters’ beliefs are key, whereas I suspect it’s possible that elite action could get the job done without cleaning up the larger epistemic environment.

It is also odd to suggest that the *main* obstacle to action on climate science is the state of public opinion. There are, after all, enormously diverging interests and distributional effects that accompany any plan to tackle climate change. How one interprets cues is shaped to some extent by one’s interests. The fact that implementing a carbon tax has been so slow in coming is, in part, a consequence of concentrated interests exploiting fears over future living standards. Another consequence of the political failure is to create enduring coalitions that can sustain a carbon tax. How to trade off interests in a way that is politically feasible and just is no easy matter even if there were agreement over the urgency of action.

Second, it is a bit surprising that Levy never reckons with the Condorcet Jury Theorem. It is naturally read that in some contexts an inexpert large multitude can nonetheless outperform a

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<sup>48</sup> David M. Levy, "Gordon Tullock and the Predatory Economist" in *Matters, Liberty*. "Peter Boettke, "Gordon Tullock and the Rational Choice Commitment"(November 2017)." <https://oll.libertyfund.org/page/liberty-matters-peter-boettke-gordon-tullock-rational-choice>

<sup>49</sup> Bagg, Samuel. "Fighting power with power: The administrative state as a weapon against concentrated private power." *Social Philosophy and Policy* 38.1 (2021): 220-243.

small expert group.<sup>50</sup> Levy might respond that the Jury Theorem has unrealistic assumptions that make it especially unfruitful in the cases he is interested in.

Third, the main insight at the core of the book is that “we’re deeply social agents, agents who owe our epistemic success to the division of labor and the ways in which we scaffold cognition.” (147) This idea is not new: the division of labor is central to, say, Adam Smith’s political economy.<sup>51</sup> For Smith, writing on our side of the scientific revolution, the division of labor included what we have come to call the ‘cognitive division of labor’ among and within all the sciences. This scientific and technological cognitive division of labor creates enormous intellectual and social scaffolding that facilitates our social life in all kinds of ways, but it also raises some non-trivial social and political challenges and it can create barriers among the sciences.

Right at the start of *Wealth of Nations*, in book 1, chapter 1, Smith offers ‘philosophy or men of speculation’ as part of the answer to the, say, coordination and communication problems due to advanced division of labor (including the cognitive type); their “trade it is, not to do any thing, but to observe every thing; and who, upon that account, are often capable of combining together the powers of the most distant and dissimilar objects.”<sup>52</sup> So, for Smith philosophy is an *integrative* enterprise because it stands back from the detailed immersion of other occupations. In context of the quoted passage, it is clear that Smith thinks this will enable technological *and* intellectual improvements (these ‘powers’ are to be put to good use).

To be sure, in the same paragraph, Smith historicizes this account of philosophy. It is itself the *effect* of the advanced division of labor: “in the progress of society, philosophy or speculation becomes, like every other employment, the principal or sole trade and occupation of a particular class of citizens. Like every other employment too, it is subdivided into a great number of different branches, each of which affords occupation.” (WN 1.1.9, p. 21) So, Smith is also clearly foreseeing the division(s) within philosophy as a speculative profession.<sup>53</sup>

As I have remarked elsewhere, in *Wealth of Nations*, Smith worried about the corruption of experts through market incentives.<sup>54</sup> Smith also thought that government could facilitate a purer epistemic environment by creating standards and measures and by a government bureaucracy. As I have concluded, elsewhere, “Smith advocates policies and instruments that enhance the state’s capacity to create a rule-following, impartial bureaucracy, which will be fairer to the poor and enhance economic growth.”<sup>55</sup> The point is recognized by John Stuart Mill

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<sup>50</sup> See, especially, Goodin, Robert E., and Kai Spiekermann. *An epistemic theory of democracy*. Oxford University Press, 2018. I thank Richard Pettigrew for raising the question with me.

<sup>51</sup> I am not suggesting he is the first in the European philosophical tradition to make it central to his theory. In Book 2 of Plato’s *Republic* 372a-c, the division of labor is key to the origin of political life as described in the so-called true city or city of pigs. The Kallipolis clearly also has a cognitive division of labor.

<sup>52</sup> I note here the gendered nature of Smith’s account of philosophy. (It’s worth noting that Levy is also silent on the gendered division of cognitive labor.) Also, sometimes Smith uses ‘philosophy’ in a more capacious science (which includes all sciences and learning), but here ‘philosophy’ is clearly distinct from some of the more practical sciences.

<sup>53</sup> Schliesser, Eric. *Adam Smith: Systematic philosopher and public thinker*. Oxford University Press, 2017.

<sup>54</sup> See especially Smith’s treatment of casuistry as expertise-for-hire. Schliesser, Eric. “The peculiar, or on seeing oneself as a moral cause in Adam Smith.” *Contemporary Perspectives on Early Modern Philosophy*. Springer, Dordrecht, 2013. 159-177.

<sup>55</sup> Schliesser, Eric. “Adam Smith on Political Leadership”. *The Scottish Enlightenment: Human Nature, Social Theory and Moral Philosophy: Essays in Honour of Christopher J. Berry*, Edinburgh: Edinburgh University Press, 2022, pp. 132-163. <https://doi.org/10.1515/9781474467346-010>

and even amplified in *On Liberty*: that “the greatest dissemination of power consistent with efficiency” should be allied with “the greatest possible centralisation of information, and diffusion of it from the centre.”<sup>56</sup> Arguably Max Weber turned the rationalization of our epistemic environment (through science and bureaucracy) into his great theme.

That is to say, in the *liberal* tradition, the state confers legitimacy on science as a source of authorized belief and science often confers legitimacy on state action even if science and the state maintain considerable independence from each other. But how to organize either the state or the sciences, and their interactions, in light of questions of epistemic pollution is no easy matter.<sup>57</sup> It is notable that Levy is silent on the constructive role of markets, which is, often also a source of epistemically salient and robust belief.

I mention all of this not to give Levy homework in the history of political theory or to police disciplinary boundaries. Levy would be entirely consistent to claim that according to his own account it is only natural that he will have to rely on others for the historical antecedents of his own views. But rather to suggest that given the long history of worry about the polluted status of our epistemic environment, we might reflect a bit more on strategies of how we have overcome past pollution. I wouldn't be surprised if we learned that today's worst epistemic polluters had already done that exercise.

To sum up: this is likely to be a very important book in cognitive science and social epistemology. While political philosophers/theorists and philosophers of science may well feel that the author has reinvented some of their wheels, that is almost inevitable in our day and age as Levy helps us understand. Even so, everyone interested in thinking about the significance of bad and authorized beliefs should read the book.<sup>58</sup>

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<sup>56</sup> For more on the role of government (and while drawing on Lippmann's views) to help combat epistemic pollution while sticking to liberal principles, see Nick Cowen & Eric Schliesser (ms) “The Articulate State.” at SSRN: <https://ssrn.com/abstract=4178285> or <http://dx.doi.org/10.2139/ssrn.4178285>

<sup>57</sup> I thank Erwin Dekker for pressing this point on me.

<sup>58</sup> I am grateful to Ryan Muldoon for encouragement. I thank Nathan Ballantyne, Richard Pettigrew, Adrian Bardon, Jeffrey Friedman, Maarten Boudry, and Helen de Cruz for detailed comments on an earlier draft. I also thank Neil Levy for clarifying a number of features of his view in personal correspondence with me. The usual caveats apply.