

Catherine Z. Elgin, *True Enough*. Cambridge, MA: MIT Press, 2017. Pp.ix, 309.

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The project Catherine Elgin embarks on in her latest book, *True Enough*, is expansive and ambitious. The book shares its title with a 2004 paper of Elgin's, and both take inspiration from the role—apparently epistemic—in science played by idealizations and other falsehoods. But, whereas the earlier paper focuses on motivating a particular view of scientific understanding on that basis, this book is a wide-ranging project in epistemology. I interpret it as including three main parts: (1) advocating for the epistemic significance of understanding in the place of knowledge and a corresponding weakening of the requirement of true belief; (2) developing a coherentist epistemology that replaces the externalist requirement of reliability with internalist responsibility; and (3) showing how artistic representation is of a piece with scientific representation and other epistemic achievements.

The first of these relates most directly to debates in philosophy of science and the interests that brought me to this book. Traditionally, science's epistemic aim (if any) was supposed to be knowledge, and one requirement for knowledge was truth. But, as Elgin points out, there's a deep problem with this. What she calls "felicitous falsehoods," including models, idealizations, curve-smoothing, *ceteris paribus* claims, and thought experiments, figure ineliminably in successful science. And yet, today's science, dependent as it is on falsehoods, nonetheless "provides an understanding of the natural order" (15). Elgin thus advocates replacing the epistemic aim of knowledge, requiring truth, with the epistemic aim of 'objectual' understanding—"a tapestry of interconnected commitments that collectively constitute an understanding of a domain" (16). Importantly, on her view, this understanding does not require truth.

I largely agree with Elgin on these points. One of my favorite considerations that she raises in support of this move regards the traditional epistemic requirements of justified and/or reliable true belief. Elgin points out that justification, reliability, and belief are all taken to be threshold requirements, while truth has been seen as an absolute requirement. Why not, Elgin suggests, understand the truth requirement as also subject to a threshold? Then "epistemic acceptability turns not on whether [a proposition] is true, but on whether it is *true enough*" (16, italics in original). This change requires a related move of replacing belief with a more generic requirement of epistemic acceptance, since it seems we should not believe what we know to be false. All of this purports to solve the deep problem Elgin has posed about today's science. Idealizations and all the rest cannot be true, but they can be true enough to provide genuine understanding. And understanding, in turn, is know-how: knowing "how to draw the inferences and perform the actions that the understanding licenses" (56). Or so Elgin holds.

This reorientation, Elgin suggests, requires deeper epistemic shifts: in particular, toward "holism, nonfactivism, and a reconception of the basis of epistemic normativity" (31). Nonfactivism is required because accounts that provide understanding may include felicitous falsehoods, i.e., nontruths, and because understanding comes in degrees. As Elgin emphasizes,

the history of science and individuals' scientific education illustrate this, as it seems we want to say in both cases that advances in understanding occur along the way, even as we recognize that full understanding has not been achieved.

The other two epistemic shifts Elgin calls for—to holism and the basis of epistemic normativity—comprise what I have identified as the second part of the project. Elgin's holism is a coherentist view of justification in terms of the systematic interconnection among epistemic commitments in what she calls reflective equilibrium. This is a fully internalist view; justification arises not from reliability but from the appearance of reliability. And, it seems this reflective equilibrium is how Elgin wants to cash out epistemic acceptability, her proposed replacement for truth: "whether a representation... is acceptable turns on whether it is an element of an account in reflective equilibrium" (89).

I have a concern about this move, as I think it fails to live up to the goals of Elgin's project. One implication of idealizations in science is that, considered across different scientific representations, posits are regularly inconsistent with one another. Idealized assumptions in one investigation regularly contradict idealized assumptions in another, and this is by design. The ideal gas law assumes no intermolecular forces among particles, while van der Waals equation assumes the existence of these forces. Both can be used to represent the same gas. One model of a trait—say, a bird's feather color—presumes simple inheritance, whereas another model details the genetic basis for the trait. Elgin's move of shifting from truth to true enough seems to emphasize and legitimize this feature of science. But, cashing out epistemic acceptability, Elgin's threshold requirement for when a posit is true enough, in terms of participation in a broad, coherent account undermines this. On the resulting view, posits may not need to be true in a correspondence sense, but they must be consistent across a broad understanding of a domain: "Not only must the commitments be internally coherent and consistent, they must cohere with and be consistent with other things we reflectively endorse" (113). If this is so, it eliminates as unacceptable many of the felicitous falsehoods that motivate Elgin's project.

In my view, to account for the role felicitous falsehoods play in science, we must also be able to account for the inconsistency among the posits of different representations that, together, comprise the scientific account of any given phenomenon. I'll return to this below.

I haven't yet said anything about the shift in the basis of epistemic normativity that Elgin calls for. For purposes of space, I'll be brief on this topic. Elgin's internalism also influences this part of her account: "epistemic standards are vindicated not by [any] external end, but by being products and promoters of responsible epistemic agency" (91). The bulk of the work for this part of the project is, then, in the development of an account of what epistemic agency amounts to. What results is an account of what Elgin calls 'procedural objectivity,' an epistemic standard that results from the execution of responsible epistemic agency.

Let's move on to the third part of the project I identified above. Elgin is clear that her view about how science generates understanding also applies to other disciplines. Just as felicitous

falsehoods in science pave the way to understanding while failing to meet the requirement of truth, so do felicitous falsehoods in other disciplines, ranging from philosophy and history to the arts. Indeed, Elgin focuses quite a bit on motivating works of art as legitimate sources of understanding. Elgin suggests that aesthetic judgments meet her standard for procedural objectivity. An interpretation of some instance of artistic expression, then, can yield an understanding on par with other disciplinary understanding. Further, artistic expression itself—Elgin’s examples include dance and historic monuments—can figure into an understanding of a discipline beyond the art—in these examples, emotion and history, respectively.

This is possible, on Elgin’s view, because artistic expression can exemplify targeted features of the world. Exemplification is a central feature of Elgin’s project that I have not yet addressed. Something exemplifies a feature by (1) instantiating that feature and (2) referring to that feature in virtue of instantiating it. Thus, a paint color card exemplifies a given color of paint, the ideal gas law exemplifies relationships in a set of magnitudes that can be described mathematically, and the Vietnam War Memorial exemplifies the volume and trajectory of American casualties in the war. It’s worth asking whether literal instantiation is involved in all the instances of conveying understanding on which Elgin focuses, but I won’t dwell on this question here.

Instead I want to raise a broad concern with Elgin’s approach to accounting for felicitous falsehoods in science. Above I suggested that Elgin’s proposed definition of epistemic acceptability doesn’t factor in variability, and thus inconsistency, among posits in science. More generally, I believe Elgin’s account doesn’t do much to accommodate the variability that is part and parcel with a departure from truth. This plays out in a few related ways.

One motivation for Elgin’s project is the need for variability in the truth-status of our posits and our doxastic attitudes toward those posits. But, as I understand the development of the project, this variability has not been achieved, at least not explicitly. Epistemic acceptability may be a broadened category from truth, but Elgin’s coherentism provides no obvious basis for a distinction between true and untrue epistemically acceptable posits. It seems both categories of posit are simply subject to the requirement that they feature in a coherent account of some discipline.

A related point can be made regarding the relationship between knowledge and understanding. Granting the epistemic significance of nonfactive understanding (which, following Elgin, I do), it seems an important part of the ensuing epistemic work involves grounding the distinction between this understanding and old-fashioned knowledge. But I don’t see how the account developed in this book accomplishes this. What is truth, and what is knowledge, above and beyond—or perhaps different in kind from—epistemic acceptability and participation in a coherent account endorsed by an epistemically responsible agent? I’m not sure how Elgin would answer that question.

Here’s another form of variability Elgin’s account doesn’t explicitly support. In a given representation, some posits are held to a higher standard than others. The Lotka-Volterra

model assumes that predators have limitless appetites, but none do—this is fine. The model also assumes exponential growth of the prey population without predation, and if this isn't roughly accurate of some prey population, the model won't be very useful. This variability is important to motivating the epistemic significance of falsehoods, I think. One might reasonably hold the Lotka-Volterra model to be approximately true of some predator-prey system, but one cannot claim the assumption of predators with limitless appetites is approximately true. The latter is an idealization—a posit made without regard for whether it's true and often with full knowledge it's false. Yet Elgin treats all such models as felicitous falsehoods. By doing so, she misses an important form of variability in doxastic attitude and corresponding variability in epistemic acceptability that at least exists in science.

True Enough has the important and interesting aim of accounting for the epistemic value of felicitous falsehoods, from science to art. But I worry that the resulting account is at best incomplete due to its failure to support some important epistemic distinctions: between truth and felicitous falsehoods, between knowledge and nonfactive understanding, and between idealizations and the approximately accurate models that make use of them. I think Elgin is right that truth is merely one variety of epistemic acceptability. But, in my view, the requirements for epistemic acceptability vary with both the role played by a posit in a representation and the specific epistemic aim the representation achieves. That variability seems to be lacking from Elgin's account.

In my view, we don't just need a threshold concept of truth. We need a *variable* threshold. Sometimes we seek true beliefs. Many other times our epistemic purposes are met with accounts that are true enough, and that rely essentially on felicitous falsehoods. I don't think *True Enough* has accomplished this variable threshold.

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