

Book Reviews

Gila Sher, *Epistemic Friction*. Oxford University Press, 2016. 400 pp.

Gila Sher's *Epistemic Friction* brings together several interrelated themes from her work in the past two decades. As indicated by the volume's subtitle – *An Essay on Knowledge, Truth, and Logic* – it is far reaching and ambitious: The book puts forward an integrated, systematic philosophical outlook, where the aforementioned domains (as well as others) are treated in a novel way. In what follows I present, albeit in rough outline, several of the key ideas developed in the book. Then I turn to consider some of the questions raised by Sher's overarching picture. The structure of this review, in which questions are put forward only at the end of the exegesis, is designed to respect the holistic character of the volume.

I. Synopsis

1.1 Knowledge. What characterizes genuine knowledge? How can we attain it? Sher appeals to the notion of *epistemic friction* as a starting point for providing adequate answers to these questions. Legitimate knowledge, she says, is the result of friction between our theorizing and the world. And what does such friction consist in? Sher reviews precursors to her appeal to this notion (that she finds in Kant, Wittgenstein, and McDowell), and then elaborates her own construal of the term. For her, epistemic friction is the requirement that our theories be constrained by the world and grounded in it (i.e., justified through our interaction with the world), and this in a way that sets norms and standards to our pursuit of understanding. The demand for such outward friction is not to rule out the dependence of our theories on our cognitive capacities and characteristics as humans, nor is it inconsistent with our having substantial freedom in our epistemic endeavors.

But how can such friction be attained? Sher rejects what she calls the *foundationalist* answer to this question, according to which our knowledge of the world must form a hierarchy of theories, where the higher echelons depend on lower ones and the most basic level cannot be grounded in any

other. In such a system, she argues, the basic level ends up not being grounded at all, and hence the whole epistemic edifice erected on it lacks the required friction with the world. As an alternative to this approach, Sher proposes a model of knowledge that she calls *foundational holism*. In this model, metaphorically depicted by Neurath's famous boat, our theories of the world are interdependent on each other, and, at the same time, are all grounded in reality. Each part of our system of knowledge is thereby provided foundation (i.e., anchoring) both horizontally, through its relations to other parts of the system, and laterally, by direct friction with (certain) aspects of the world.

Sher's coupling of holism with epistemology, as just outlined, derives its inspiration from Quine's holistic outlook. However, Sher opposes key elements in Quine's position. For one thing, she does not share Quine's empiricism: It is her view that our access to the world around us should not be conceptualized as being limited to sensory experience. Rather, she argues for what she calls *basic realism*: The view that the world is epistemologically and semantically available to us, that we can come to know both its concrete and abstract aspects, and that we have at our disposal a variety of methods in which to *figure out* what is going on around us, combining perceptual and cognitive resources in variegated ways.

Another substantial point of difference between Sher and Quine has to do with the latter's distinction between center and periphery in our overall system of knowledge. Sher argues forcefully against the rigidity of this distinction as it appears in Quine: For him these are always the same parts of our system of knowledge that are in direct friction with the world (the periphery), and other parts (the center) are always only indirectly so. Sher suggests that we replace this picture with a dynamic one, in which at different times and contexts different parts of our web of knowledge play the part of the periphery (i.e., are in friction with the world), while others serve as the more stable center.

Sher depicts our pursuit of knowledge, then, as a process involving non-vicious circularity: We change and expand our system of knowledge by grounding parts of this system in other parts and in surrounding reality, and this by using an open-ended variety of methods through which we can get at this reality.

1.2 Truth. Sher begins her treatment of the notion of truth by considering what should be expected from a substantive, non-deflationary theory of the

concept – one that aims to explain truth rather than to explain it away. A key result of her meta-theoretical discussion is that a satisfactory theory of truth (like theories of other central concepts) should navigate between the poles of particularity and generality, taking into account the disunity and multiple facets of truth while still capturing universal aspects of the concept. Sher argues that it cannot be expected that an account of truth provide all the information required for assigning truth to each and every sentence, but holds that this is not to say that such an account is doomed to be limited to trivialities.

Following this methodological approach Sher puts forward several basic claims regarding truth. The first is *immanence*, which (as acknowledged by Sher) is close to Brentano's intentionality: For a thought or sentence to be truth-evaluable it must be *about* reality (in all its variegated aspects). Full-blown immanence is made possible by Sher's liberal view of our epistemic access to the world, as outlined above. Second, *transcendence*: An ascription of truth to a thought is itself a thought about a thought, what is often called a higher order thought. However, in tune with her holism, Sher rejects in this context as well a rigid ordering of perspectives—it is enough for her that we can always change our position in Neurath's boat and examine the place we just stood on. Third, *normativity*: Truth is a standard we aim at and sometimes fail to achieve. Fourth, Sher subscribes to a distinctive version of correspondence that she labels *manifold correspondence*. What distinguishes this kind of correspondence are its flexibility and variability: In different domains it can take different forms. Specifically, the match between thought and reality that correspondence consists in might be intricate and indirect (rather than being a simple mirroring or isomorphism relation of some kind).

1.3 Mathematics and logic. Sher's main application of this philosophical framework is to the discussion of mathematical truth and the nature of logic. (In putting these two together I deviate, albeit slightly, from the book's structure of presentation, in a way that fits the concise nature of this review.)

According to Sher reality has abstract and, in particular, *formal* features. (She is no Platonist, though; she does not subscribe to the existence of abstract entities, but rather only to that of abstract properties of various levels – properties of objects in the single, physical world that we occupy. For example, symmetry and transitivity are second level formal properties of non-formal relations.) The goal of mathematics is to study these formal

yet real aspects of the world, and hence we can talk of mathematical truth as a match between our mathematical theories and the formal reality they aim to describe. Various features of mathematics – e.g., its generality and the modal force of its pronouncements – can be explained by the nature of its subject matter: Formal laws are, by nature, highly general and counterfactual supportive. (Sher gives special attention to arithmetical ontology and truth. She construes cardinalities in a Fregean fashion, as second level properties, and suggests that our talk of numbers involves posits that stand for these properties. Her flexible construal of correspondence, she says, allows for such talk to be about the world, and therefore to be truth-evaluable.)

Finally, Sher's account of logic builds upon much that preceded it. First, Sher appeals to her foundational holism in order to support the very possibility of grounding and justifying logical inference – a practice that is at the core of all of our thinking. We need not look for a body of knowledge that is below logic in some hierarchy and use it to ground logic, she says, but rather can appeal for this purpose to other parts of our system of knowledge and their connections to reality. This move is not made by Sher in her earlier writings on logic, and its availability is one of the significant advantages of the broad picture presented here.

Second, Sher argues that, like mathematics, logic tracks formal aspects of reality. Her paradigmatic example of a logical system – classical predicate logic – aims to capture the most general, formal aspects of reality that arise from its being constituted by objects having properties. Therefore logic too involves correspondence to reality, albeit to its most general features. (Note the difference between the formality of logic according to Sher and what is ordinarily meant by the term 'formal logic': The latter term typically indicates that the logical system itself is formal in some sense, e.g., its syntax and inference rules are rigorously defined, while for Sher the formality of logic consists in its correspondence to formal features of reality.)

Third, Sher proposes a criterion for logical formality. If a certain notion is formal, in the sense of involving structural features of reality that arise only from the very bare fact that the world is composed of objects having properties, then it should be invariant under 1-1 functions from one domain to another (or to itself). For example, non-emptiness (as a property of properties) is such a notion: If a property G is the image of H under a 1-1 mapping from one domain to another, then G is non-empty iff H is. (Notions that are domain specific do not manifest this feature.) Thus Sher is able to

distinguish logical constants: A constant in a given system is logical if it rigidly designates a formal logical notion.

II. Discussion

As indicated by the foregoing synopsis, Gila Sher's *Epistemic Friction* puts forward a complex, integrated, and far reaching system of philosophical ideas. Its various themes support each other, in tune with Sher's thesis of foundational holism. As such, it is an important contribution to the philosophical discussion of the nexus of concepts it deals with, occupying a distinctive place in the logical space of epistemological positions in general, and the discussion of mathematical and logical knowledge in particular. Of course, there is much room for discussion of various aspects and components of Sher's position. In what follows I present several questions and issues that may be raised in such a discussion.

2.1 Center, periphery, and semantic spatiality. According to Quine the center of our system of knowledge earns its name due to two characteristics. First, it does not come into direct epistemic friction with the world: For Quine such friction is only through sensory stimulation, and the center of his system is not associated directly with such stimulation. Second, the center (e.g., mathematics and logic) is connected to various (maybe all) parts of the system – e.g., it takes part in inferences in all areas of knowledge. Sher's moveable center, on the other hand, manifests the first of these two characteristics but not necessarily the second: It inherits from its Quinean predecessor its relative stability (at a given situation), on the basis of which changes are made in other parts of the system, but it need not be central in the other sense, i.e., interconnected with other areas of the system. Similarly, Sher's (movable) periphery is similar to Quine's in our willingness to critically examine it and change it (possibly due to direct friction with the world), but it need not be peripheral in its location in the epistemic system.

We see that in Sher's framework two dimensions of the epistemic system that were tied together in Quine become untangled: the stability/change (due to friction) dimension, and the structural centrality/peripherality dimension. For this reason Sher's version of the first dimension of the two can be stated without appeal to the notions of center and periphery. Instead, Sher can appeal to the notions *space*, *distance*, and *place*. It is sufficient for

Sher's purposes that the epistemic system be described as a space, to which some notion sufficiently close to that of *spatial distance* is applicable – distance between sentences and, derivatively, distance between semantic areas. Sher's periphery, the area that is candidate for reevaluation at a certain moment, will be described within this framework merely as the area that is at the focus of attention at a given moment – the place within the network that the reevaluation processes (of a person, or of a community) are pointed at. Sher's center in such a given moment consists of all those areas that are relatively far away from this locus, areas that serve as a fixed background for the changes undergone by the site under scrutiny. Finally, the changes in the identity of center and periphery that Sher talks about are described in the conceptual framework suggested here in a more natural and straightforward way: They are nothing but movements of the focus of our attention within semantic space. Thus what Sher describes as structural changes – center becoming periphery and vice versa – can be construed as changes in the way a stable structure is perceived; this 'reduction in entropy' of semantic space seems desirable.

The suggested modification in Sher's account can be described as follows. Sher shows that in order for sufficient structure to be imposed on the global epistemic network there need not be applicable to it a static, essentialist distinction between center and periphery; a dynamic distinction is enough. My proposal here is to follow this line of thought further, and propose that structure can be induced (or discerned) in the epistemic system without any appeal to the notions of center and periphery whatsoever; rather, a distance-like relation within the system is enough. Such a relation is in fact implicit as a component in both Quine's and Sher's suggestions – talk of center and periphery presupposes some notion of distance, or metric – and it seems that such talk is sufficient for Sher's purposes.

It should be noted that the above picture is consistent with applying a (possibly graded) distinction between center and periphery to our holistic epistemic network – a distinction that is made not in terms of openness to friction, but rather in terms of interconnectivity to other parts of the system. What is the topology of our epistemic system? To what degree is it centralized, as Quine's metaphor of field of force, for example, seems to suggest? These questions are arguably of interest, but they should be distinguished from those pertaining to openness to friction, which is Sher's main concern.

2.2 *Language*. On several occasions Sher says that she does not subscribe to the view that language is a legitimate source of metaphysical insight. Thus, she argues that “language [is] an institution that (to a large extent) evolved relatively early in the history of human culture [...]; as such it is unlikely to be an adequate guide for ontology” (p. 74). Similarly, Sher rejects what she calls the “language-as-an-arbiter-of-ontology” view, and says: “it seems to me unreasonable to presume that natural language, and especially its rigid grammar, are automatically suitable, as they stand, for rigorous theorizing in any field” (p. 81). In discussing Quine’s grounds for objecting to the analytic–synthetic distinction Sher describes Quine as a product of the linguistic turn, and seems to distance herself from this turn (p. 103). Indeed, throughout the book Sher talks most often of thoughts, claims, and arguments in cognitive rather than linguistic terms.

A friend of the linguistic turn (such as myself) could respond to this outlook of Sher’s as follows. One can certainly agree that it is not possible to read off metaphysical results from the structure of a given natural language ‘as it stands’ (or from any linguistic ‘still-snapshot’, for that matter), and yet subscribe to the view that there is an essential connection between conceptualization and linguistic expression. In tune with Sher’s observations regarding human thought, human language too should be acknowledged to be flexible and open ended, molded anew by all its users, including scientists, philosophers, and logicians. Thus one need not be an ordinary language philosopher in order to maintain that the path to metaphysics must go through language (as attested to by Quine himself, as well as others).

Once it is acknowledged that there is a variety of linguistically-oriented outlooks on conceptualization (and on metaphysics) it can be asked whether at least some of them are consistent with Sher’s main arguments. Admittedly, Sher herself talks of our system of knowledge as being dependent on the world on the one hand and on the mind on the other hand – language does not play a significant role in her epistemological picture. However, what if our having full-fledged mentality – in particular, propositional mental states – is interdependent on our having a language? (Again, for this to obtain it need not be the case that human conceptualization at time t is directly constrained by language as used at time t .) I believe many of Sher’s arguments and proposals (albeit possibly under some modification) can be placed within such an alternative philosophical framework, where Neurath’s boat is not only epistemic but also linguistic.

Here is a closely related point. Sher's epistemological outlook can be described as individualistic: Although she talks of human capacities in general, the way she thinks about the epistemic project – getting to know the world – it can be coherently carried out by a single person. Nothing depends on interaction between people. This feature characterizes also Quine in “Two Dogmas” (albeit in a linguistic rather than a mentalistic version), but from *Word and Object* onwards Quine introduces linguistic *communication* (as encapsulated by his radical translation) as necessary for our understanding how language works, and hence also for our understanding how we use it to construct our system of knowledge. Now communication does not play any role in Sher's theory, and thus the question arises: Can her view accommodate a transformation similar to that just ascribed to Quine? As indicated above, I believe the answer to this question is positive, but clearly more is required in order to support this impression.

2.3 Immanence and correspondence. As noted above, one of Sher's principles of truth is immanence. As she points out (p. 163), her construal of immanence is close to the notion of intentionality: A thought is immanent if it is about reality (where both aboutness and reality are broadly construed). Immanence is a principle of truth in the sense that it is necessary for truth to be applicable: If you have no immanent states of mind you do not have truth-apt such states either.

Sher does not provide us with a theory of immanence. What makes our thoughts be directed at the world? What makes specific thoughts be about specific parts (or aspects) of the world? Sher does not answer these questions, which are central to the philosophy of mind and related fields. Should this count as an omission of Sher's? Certainly not. Every philosophical discussion has to start somewhere and presuppose something. Sher's agenda in the book is broad and ambitious as it is, and it is not incumbent on her to augment it with a full-fledged philosophy of mind. Still, the question may be raised what groundings of intentionality cohere with Sher's outlook. It is beyond the scope of this review to answer this question, of course, but let me point out an aspect of Sher's epistemology which it might be a challenge to accommodate in answering this question (i.e., in giving an account of immanence). Sher promotes an open-ended, variegated picture of the ways available to us to know the world. Her appeal to the notion of *figuring out* encapsulates this approach: Figuring out what the world is like includes a

wide variety of interactions with the world (p. 85) – theoretical and practical, yielding knowledge *that* things are so and so and *how* to do things, carried out by babies, children, and adults. But now the question arises: Are the cognitive states and processes associated with all kinds of figuring out immanent, i.e., intentional? If so, then at least according to some accounts this yields a notion of intentionality that is too broad. Those who tie together the notions of intentionality and representation, for example, would argue that not all cognitive states that help govern our interactions with the world are intentional. If the answer is negative – i.e., if not all kinds of figuring out involve immanence – then it seems Sher should account for the way non-immanent intellectual processes yield immanent, truth-evaluable ones. It is not my claim that this challenge cannot be met, but rather only that it needs to be addressed.

Let us turn now, albeit briefly, to consider Sher's notion of correspondence. I would like to point out two aspects of Sher's construal of the notion that make her version of it more flexible and inclusive than others. One feature, not stated explicitly by Sher, is that she does not appeal to *truth makers* of any kind (such as facts, or states of affairs). Rather, most often she talks of a thought as corresponding to *reality*, as a whole. A second feature is that the correspondence relation obtaining between thought and reality that underlies truth is not of a simple form, such as mirroring or picturing (p. 189), but may take an open-ended variety of shapes, depending on field of inquiry / domain of reality.

These characteristics of Sher's view are of various advantages, but they also seem to open her position to criticism of the Davidsonian brand.¹ If a true thought can be said to correspond only to reality as a whole, and if we do not have a general characterization of the correspondence relation(s) relevant to truth (beyond the fact that they underlie truth in various contexts), then we have not made any explanatory progress by introducing correspondence. Correspondence to the world is just truth, Davidson says, and we would be better off by sticking to the latter, simpler term. His conclusion: It should be acknowledged that truth is a basic component of our conceptual system, and that trying to analyze it is misguided. (Note that this is not to say that Davidson is a deflationist about truth; like Sher, he thinks that truth

¹ D. Davidson, "The Folly of Trying to Define Truth," in his *Truth, Language, and History* (Oxford: Oxford University Press, 2005), 19–37.

is substantive, that it is immanent, transcendent, and normative, and that it underlies our notion of knowledge.)

I think that Sher needs to address this line of criticism, and that she can defend herself against it in at least two ways. First, there is the methodological point. Davidson objects to the idea of trying to *define* truth – in particular, in terms of correspondence – but this is not what Sher aims to do. Rather, in tune with her foundational holism, Sher appeals to correspondence in grounding truth, but this is not to say she is committed to the view that the former notion is more fundamental than the latter. So Sher can agree with Davidson that it is a folly to try to define truth (in terms of correspondence, or otherwise), without giving any ground. Second, I agree with Sher that characterizing truth as involving correspondence to reality is not vacuous. To wit, deflationists do not agree with such a characterization. So *within* Davidson’s system of ideas there might be no point in unpacking truth as correspondence to reality, but in the context of the current debate over truth such a move is not superfluous.

2.4 The bounds of logic. As indicated in the synopsis presented above, Sher’s account of logicity is of a specific focus: The formal structure of reality that logic is grounded in, according to this account, arises from the metaphysics of objects and properties, and this grounding, in turn, yields the characterization of certain inferential systems as logical – among them, paradigmatically, first order predicate logic. In this way, in particular, we get a justification for the characterization of certain constants as logical (see above). This focus naturally gives rise to the following question: What about the wide variety of logics being used and developed today in a multitude of contexts – for example, modal, temporal, and epistemic logics? These logics do not track the formal features that Sher’s account focuses on, and their (typically additional) constants do not satisfy Sher’s criterion for logicity, so is it Sher’s view that we are misguided in calling these systems logical?

Sher’s answer to this question, given towards the end of the book (pp. 333–34), is clear: She is no logical purist. Thus, she says “there is much in common between these theories and the logical theories that fall under our conception – including goals, methods and practices – and this justifies putting them together within the same category” (p. 334). Indeed, this liberal approach is in accord with her dynamic view of knowledge, according to

which we should expect key concepts such as logicality to be open-ended rather than having clear cut demarcation.

This inclusive view of logic opens the door for further directions of thought and research, that originate from Sher's treatment of logic in this volume. In order to see this, we can simply go back to Sher's statement, quoted in the previous paragraph, that there is "much in common" between the systems that are pronounced as logical by her own treatment and others. What are these commonalities? Can they be captured within the framework developed by Sher, or an extrapolation thereof? Which aspects of Sher's treatment of logic generalize to other denizens of the category of logic, and which do not? These seem like questions worth pursuing, and they are left open by Sher's text. As noted above, the core of Sher's discussion of logicality it focused exclusively on what she sees as the paradigmatic case – mathematical predicate logic and its grounding – and no pointers to generalizations or to other cases are provided.²

There are many other intriguing arguments and ideas in *Epistemic Friction* that are worth pursuing and engaging with – two examples are Sher's view of the foundational connections between mathematics and logic, and her view of the significance of Tarski's definition of truth. The discussion of these will have to be taken up elsewhere.

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² See Sagi for work in this trajectory, G. Sagi, "Formality in Logic: From Logical Terms to Semantic Constraints," *Logique et Analyse* 227 (2014): 259–76.