



# Realism without representationalism

Henrik Rydenfelt<sup>1</sup>

Received: 19 December 2018 / Accepted: 10 May 2019  
© The Author(s) 2019

## Abstract

Scientific realism is a critical target of anti-representationalists such as Richard Rorty and Huw Price, who have questioned the very possibility of providing a satisfactory argument for realism or any other ontological position. I will argue that there is a viable form of realism which not only withstands this criticism but is vindicated on the antirepresentationalists' own grounds. This realist position, largely drawn from the notion of the scientific method developed by the founder of philosophical pragmatism, Charles S. Peirce, will further be compared with the accounts of truth and objectivity proposed by the contemporary pragmatists, Rorty, Price, and Robert B. Brandom.

**Keywords** Realism · Scientific realism · Anti-representationalism · Ontology · Metaphysics · Pragmatism · Truth · Price, Huw · Rorty, Richard · Peirce, C. S.

## 1 Introduction

Scientific realism has long dominated the ontological arena of contemporary philosophy in terms of the number of proponents and adversaries. It is also a critical target of anti-representationalists such as Richard Rorty and, more recently, Huw Price. Abandoning representationalism—the view that our thought and talk aims to represent reality—these self-described pragmatists have questioned the very possibility of providing a satisfactory argument for any ontological view. Although the anti-representationalists are not critics of the scientific project, their criticism of philosophical ontology extends to scientific realism as traditionally conceived. According to them, scientific realists face an uneasy choice in defending the privilege of the ontological commitments of science. On the one hand, if realists argue for such ontological privilege from the point of view of science itself, they assume the ontological commitments of science at the outset, rendering the argument circular at best. On the other hand, there is no point of view external to our “language games” from which to

---

✉ Henrik Rydenfelt  
henrik.rydenfelt@gmail.com

<sup>1</sup> University of Oulu, Oulu, Finland

argue that the ontological commitments of science “really” reflect an independent reality. Unlike the traditional anti-realist, idealist and instrumentalist critics of scientific realism, the anti-representationalists advocate a stance that is not merely non-realist, but anti-metaphysical: in Rorty’s and Price’s view, the whole project of philosophical ontology is torn between these untenable alternatives.

In what follows, I will argue that there is a realist ontological position which both evades anti-representationalist criticism and is vindicated on the anti-representationalists’ own grounds. Drawing from the notion of science and the scientific method developed by the founder of pragmatism, Charles S. Peirce, this *hypothetical realism* (as I will call it) does not entail that scientific ontological commitments are privileged, and has no need for an argument to that effect. Moreover, as I hope to show, some of our assertoric practices entail such realism, as indicated by a striking characteristic of those practices: *fallibilism*, the contention that the justified opinions of anyone may be mistaken. Not only, then, may realism be upheld while accepting the key critical advances of anti-representationalism; realism is present, in this form, in (at least some of) our assertoric practices. The anti-representationalists should thus allow for at least an amended project of philosophical ontology.

I will begin by presenting the anti-representationalists’ key argument against scientific realism, and then sketch an alternative version of realism not vulnerable to this argument. I will then proceed to argue that this form of realism is present in our linguistic practices. As a consideration of Rorty’s and Price’s accounts of the function of the concept of truth will show, this fact has escaped the attention of the contemporary anti-representationalists. By contrast, another contemporary pragmatist, Robert Brandom—standing a step to the right from full-fledged anti-representationalism—has invoked what is in effect the fallibilist trait in his attempt to articulate an inferentialist view of representation. I will conclude by proposing that the anti-representationalists’ rejection of ontology is not quite successful. Even if their criticism of traditional versions of scientific realism, which entail a strong view of the privilege of scientific ontological commitment, is successful—as I am ready to allow—the anti-representationalists should accept at least one ontological thesis: hypothetical realism.

## 2 Anti-representationalism and scientific realism

Scientific realists maintain that our best scientific theories are (approximately) true of a reality independent of our opinions of it. Some notable exceptions aside, scientific realism consists of three theses. The first is the semantic thesis that scientific claims are descriptive of reality and, hence, truth-apt. The second, ontological thesis is that there is an independent reality. The third, epistemic thesis is that only scientific theories are true, at least approximately, of that reality (including its unobservable parts), or that applying the methods of science is our only way of discovering what that reality is like. Traditionally, the main opponent of scientific realism has been a host of versions of anti-realism. The ontological thesis has been contested by arguments to the effect that reality is not independent of mind and thought (idealism, transcendental or otherwise), and the epistemic prowess of science has been disputed by those who doubt the possibility

of knowledge quite generally (scepticism) or of knowledge concerning that which is not directly observable (instrumentalism).<sup>1</sup>

Recently, however, some philosophers—the *anti-representationalists*, as they call themselves—have contested the traditional tenets of scientific realism while accepting a broadly speaking naturalist stance. Criticizing the semantic thesis of scientific realism, they maintain that scientific claims are not descriptive of the world but, rather, expressions of functional commitments or psychological states. This is part of their general critique of representationalism, the contention that our thought and talk aim to copy, represent, mirror or describe reality. While this starting point is broadly speaking semantic, it leads to a poignant criticisms of the two other theses. The anti-representationalists propose a deflationary attitude towards ontology, maintaining that the ontological commitments of scientific discourse stand on a par with those made in any other linguistic frameworks. They also question the epistemic privilege of science, arguing that there is no point of view from which we could show that the ontological commitments made in scientific discourse *really* reflect an independent reality.

One way of understanding the anti-representationalists' criticism of the semantic thesis is to begin with familiar moral expressivism, the view that moral language does not describe or represent the world but, rather, expresses our (non-cognitive) commitments or mental states such as pro-attitudes or desires. In dealing with the obvious objection that moral statements are often "called" true or false (as in "it is true that he did the right thing"), the expressivist finds a natural ally in semantic deflationism or minimalism, which eschews the notion of truth or reference as a "robust" semantic relation between words and the world, and concentrates on the function of the truth predicate as a linguistic device. Moral language, the expressivist maintains, is truth-apt, but only minimally and not robustly so. Expressivism is typically local: its purview is a particular discourse, while other parts of language are dealt with by descriptivist or representationalist means. However, the most visible current proponent of anti-representationalism, Huw Price, has argued that, once let loose, the expressivist and deflationary stance cannot be contained. Contesting the *bifurcation thesis*—the splitting of language to its "descriptive" (or robustly truth-apt) and merely "expressive" (or only minimally truth-apt) parts—Price argues that we are headed towards a global expressivism.<sup>2</sup>

Why? Philosophers have long been occupied with the project of finding suitable "facts" to act as truthmakers for various problematic claims—such as moral, mathematical or modal statements—in the scientific, predominantly physicalist view of the world. In Price's diagnosis, these "placement problems" arise because we are prone to shift the focus of discussion from language to its alleged referents (or objects). This *object naturalist* approach simply assumes that the patch of language investigated "describes" or refers to realities in a robust sense. Instead, Price (2004) proposes, we are to stick to the linguistic side of the issue, engaging in a *subject naturalist*, anthro-

<sup>1</sup> Not all instrumentalists would agree with his characterization. Instrumentalists divide into two camps over whether claims about the unobservable are to be reduced to claims about the observable, or simply considered meaningless. Bas van Fraassen's (1980) constructive empiricism—also often referred to as a form of instrumentalism—differs from these alternatives in holding that the very aim of scientific theories is empirical adequacy as opposed to providing a description of (mind-independent) reality.

<sup>2</sup> This notion of "bifurcation thesis" was introduced by Robert Kraut (1990).

pological study of language, and abstaining from the ontological commitments of the language under scrutiny. Price maintains that the key semantic assumption of object naturalism would need to be validated from the point of view of such “naturalistic reflection of linguistic behaviour”—and that it is not.

For Price, this deflationary approach to semantics suggests a similarly deflationary treatment of ontology. Borrowing a page from Carnap, Price (1992, 2007) argues that there is a pluralism of linguistic frameworks which each entail their own (“first-order”) ontological commitments—but that there is no point of view external to these frameworks from which to pose the metaphysical question of whether those commitments fit the way things *really* are. Abandoning the metaphysical issue altogether, Price welcomes us to “the anti-metaphysical club—to that enlightened circle who agree, with Carnap, in rejecting ‘both the thesis of the reality of the external world and the thesis of its irreality’” (Price 2007, p. 389; words quoted from Carnap 1956).<sup>3</sup>

Quine’s famous criticism of Carnap’s view, based on the untenability of the analytic-synthetic dichotomy and the dubiousness of a pluralism of ontological commitment, leaves the anti-metaphysical implications intact, in Price’s interpretation. While debunking the analytic-synthetic distinction implies that there is no sharp divide between internal and external questions—questions of fact and (pragmatic) questions of the choice of a linguistic framework—no extra leeway is provided for an external, metaphysical point of view. However, Quine’s contention that there is only one type of ontological commitment, marked by a single existential quantifier, does imply (*pace* Carnap) that the plurality of linguistic frameworks does not bolster a plurality of types of ontological commitment. Accordingly, Price argues for a Quinean monism concerning ontological commitment ranging over a Carnapian pluralism of underlying linguistic frameworks.

Indeed, the Quinean, monistic stance towards existential quantification gives Price crucial ammunition in his assault against the very possibility of arguing that the ontological commitments of science, as opposed to those made in other existentially quantifying games, should be given privilege—that is, against the epistemic thesis of scientific realism. Price deploys Quine’s own deflationary attitude against Quinean scientific realism, or a reading of Quine as proposing a “privilege” view of the ontological commitments of science. If all ontological commitments stand on a par, there is no external (“philosophical” or “second-order”) point of view from which to adjudicate between commitments made in different linguistic practices, and to make the argument for the ontological privilege of science. From the first-order point of view of science, in turn, we are already *making* those commitments. The appearance of the privilege of scientific ontology turns out to be merely perspectival: those playing other existentially-quantifying games simply undertake different sets of commitments. Price argues that scientific inquiry itself leads to a form of self-learned modesty, “a

<sup>3</sup> Legg and Giladi (2018) propose that Price’s rejection of metaphysics itself implies various metaphysical assumptions. However, while subject naturalism naturally involves its own ontological commitments, what makes these commitments appear *metaphysical*, is their dubious claim that, for Price, “doing metaphysics is coextensive with ‘having ontological commitments’” (Legg and Giladi 2018, p. 69). In Price’s view, rather, any linguistic framework brings with it a set of ontological commitments; metaphysical question concern whether these commitments fit the way things *really* are.

scientific discovery that science is just one thing among many that we do with the linguistic tools of ontological commitment” (Price 2007, p. 401).

The resulting stance is much like the anti-representationalism of Richard Rorty, who similarly advocated replacing representationalist semantics with a minimalist treatment of central semantic terms and promoted a subject naturalist inquiry into language. In arguing that (what he called) the traditional project of epistemology is futile, Rorty maintained that there is no particular philosophical account to be given of knowledge, justification or truth, proposing instead an epistemological behaviourism which views knowledge “as a matter of conversation and of social practice, rather than as an attempt to mirror nature” (Rorty 1979, p. 171). Attempting to turn philosophy into cultural politics, Rorty then proposed the replacement of objectivity and truth with solidarity and justification, while consistently sticking to his naturalistic premise that—in his “Darwinian” slogan—language is a tool for coping, not copying. A consequence of this anti-representationalist standpoint was a repudiation of realism and anti-realism along with any other ontological view.

To be clear, the anti-representationalists are not opponents of the scientific project. Indeed, they happily embrace the ontological commitments of science, readily accepting something like Arthur Fine’s (1984) “natural ontological attitude”.<sup>4</sup> Nevertheless, they are critics of traditional scientific realism along with any other ontological view. In what follows, I will attempt to show that anti-representationalism need not lead to such full repudiation of ontology. Instead, anti-representationalists can and should accept an ontological view—a sophisticated form of scientific realism. There is an axis of ontological commitment that the anti-representationalists have neglected but which can be discerned by just the kind of “naturalistic reflection of our linguistic behaviour” they promote. At the end of this axis looms a form of realism that does not entail representationalism.

### 3 Pragmatism and hypothetical realism

When Rorty, in the 1980s, enlisted John Dewey as a precursor to his anti-representationalism and started to use the term *pragmatism* for his views, many scholars of the classical figures of American pragmatism reacted by adding Rorty’s name to a long line of the mantle’s kidnapers—a lineage which, by the strictest accounts, already begins with William James. Rorty’s wholesale rejection of truth, objectivity and (scientific) realism rang false in the ears of those to whom the classical pragmatists proposed novel accounts concerning these central topics of philosophy. Despite deep disagreements, the received wisdom on both sides—Rorty and the other pragmatists—was that the anti-representationalist view could not be reconciled with any realist views the classical pragmatists proposed. In the case of Dewey, the issue then

<sup>4</sup> These naturalist starting points also amount to a potential vulnerability of anti-representationalism. Presumably, the choice between representationalism and its more meagre deflationary competitor should not be made a priori but empirically. Price (especially Price 2004, 2011) has offered arguments to the effect that the semantic assumptions of object naturalism are not required to account for some central features of our assertoric practices. Nevertheless, it is a good question in its own right what it would *take* for the semantic assumptions of object naturalism to be validated from this point of view. For further discussion on the compatibility of anti-representationalism and naturalism, see Knowles (2017) and Rydenfelt (2011b).

became how much of a realist he was and who had the upper hand in interpreting his ontological commitments. Charles S. Peirce, often considered the arch-realist among the early pragmatists, was decidedly written into the “representationalist” camp, and dismissed by Rorty (1982, p. 161) as only having given pragmatism its name.

It might thus seem surprising that the axis of ontological commitment I want to discern is motivated by Peirce’s discussion on science, truth and inquiry. However, Peircean realism is in no way antagonistic to the central tenets of anti-representationalism. Something has gone amiss in the shift of pragmatism from the—admittedly “half-ironically” and “half-defiantly” named—Metaphysical Club of Peirce, James and others to the Anti-Metaphysical Club of Rorty and Price.<sup>5</sup> Far from advocating strong representationalist views, and beginning with his earliest philosophical pieces, Peirce repudiated the Cartesian picture of “ideas” as representing objects to the mind, replacing this image with the triad of signs, interpretants and objects. A sign is not necessarily an idea or thought, but anything that could elicit an interpretant—another thought, an action, or a feeling—that interprets the sign as a sign of its object. Instead of explicating “meaning” by application of the central semantic terms of truth, reference or satisfaction, Peirce set out to construe a much broader account of the interpretation of signs. As a part of this account, he provided the theory that came to be called his pragmatism, eventually the view that the ultimate interpretants of some signs—assertions, claims, sentences, propositions—are habits of action. Any meaningful sentence, if accepted by a speaker, would result in action under some conceivable circumstances. If the conceivable conduct resulting from the acceptance of two sentences in no way differs, their meaning is the same.

However, Peirce was also a realist, in many senses of the word. Here I will be concerned with his realism as it is related to his notion of science, building upon a key observation concerning our practices—linguistic and otherwise—of settling and justifying opinion. In some of these practices, Peirce contended, opinions are settled with the aim of ascertaining how things truly are independently of our opinions. These practices he referred to as *science*, and distinguished them from all others by a tripartite fundamental hypothesis:

There are real things, whose characters are entirely independent of our opinions about them; those reals affect our senses according to regular laws, and, though our sensations are as different as are our relations to the objects, yet, by taking advantage of the laws of perception, we can ascertain by reasoning how things really and truly are; and any man, if he have sufficient experience and he reason enough about it, will be led to the one true conclusion. (Peirce 1877, p. 120)

The first part of this hypothesis affirms the ontological thesis that there is an independent reality. However, this ontological view is not presented as an indubitable certainty but as a hypothesis underlying the scientific method. This—and to stay safe from kidnappers—is why I will call the Peircean form of realism *hypothetical*.

In contrast to traditional scientific realism, hypothetical realism does not invoke the semantic thesis: it is not assumed that our ideas, beliefs, thoughts or assertions aim to

<sup>5</sup> “Metaphysical Club” is Peirce’s recollection of the general title of the 1870s meetings “in Old Cambridge”, “for agnosticism was then riding its high horse, and was frowning superbly upon all metaphysics” (Peirce 1931–58, § 5.12).

represent reality. Indeed, Peirce also presented what was perhaps the first suggestion of a deflationary account of truth, pointing out that “we think each one of our beliefs to be true, and, indeed, it is mere tautology to say so” (Peirce 1877, p. 115).<sup>6</sup> In Peirce’s view, there are practices of settling opinion which do not entail the notion of an independent reality. For example, those who follow what Peirce called the method of authority—familiar enough to contemporary readers—take the dictates of an authority, religious or otherwise, as decisive in settling their views. The followers of the a priori method, in turn, engage in a free debate and discussion in order to arrive at opinions agreeable to reason. Ascertaining how things are independently of our opinions of them is an aim particular to the scientific method: it is not the goal of all practices of settling and justifying opinion.

Inevitably, however, this talk of finding out how things “independently” are suggests a version of the correspondence theory of truth.<sup>7</sup> Is not this the kind of dubious semantic thesis that the anti-representationalists have argued we should reject? The answer hinges on what is meant by correspondence, as does the standard criticism of “correspondence theories” as proposing either something wholly trivial (better handled by deflationary means) or something beefier but inevitably too murky (what is this relation called correspondence?). The difficulties of the correspondence account can, however, be sidestepped by the concreteness of the Peircean view of science. In the scientific practice of settling and justifying opinion, the reasons given for and against a belief (often implicitly) make reference to reality: ultimately, a claim is considered to be a reason for or against a belief *because* it is taken to show how things are or are not, independently of how anyone may believe them to be. The second part of Peirce’s fundamental hypothesis puts some meat on this scientific backbone. Real things, Peirce maintained, affect us causally through perception, causing us to form judgments: “all the sensations which [real things] excite emerge into consciousness in the form of beliefs” (Peirce 1878, p. 137). Such judgments may inferentially justify other judgments by the “laws of perception”, themselves the (fallible) products of scientific inquiry.<sup>8</sup> Even if this account is deserving of the correspondence label, it does not rest on the picture of a fit between ideas and realities that the anti-representationalists so vehemently criticize.

<sup>6</sup> For a reading of Peirce as an early proponent of the deflationary account, see Short (2007, pp. 332–323) and Rydenfelt (forthcoming).

<sup>7</sup> In Peirce’s view, truths are propositions which *represent reality* (e.g. Peirce 1931–58, § 8.153, c. 1900). This has led some scholars—notably Lane (2017, pp. 21–6, 47–51)—to call Peirce’s view of truth a “representationalist” one. However, this label is limited to the scientific view of truth, and is largely due to Peirce’s own semiotic terminology by which propositions are *representations* (cf. Peirce 1906, pp. 379–380; Lane 2017, pp. 29–30).

<sup>8</sup> As is evident from this language, Peirce did not succumb to the view that there are sensations or perceptions that non-inferentially justify a judgment or a belief (or some other version of the Sellarsian Myth of the Given). Sensations, in his view, enter consciousness in the form of beliefs (or judgments), and only then may inferentially justify other beliefs (or judgments). Throughout his writing, however, Peirce oscillated between the view that perception is a direct influence of objects, and the competing view that perceptions “stand for” objects which are to be inferentially ascertained (for a detailed discussion, see Bergman 2007). These two views Peirce aptly labelled presentationism and representationism, respectively (e.g. Peirce 1931–58, § 5.607); in contemporary philosophical debates, the latter view of perception is sometimes called representationalism.

Nevertheless, does it not then follow that the ontological commitments made within the scientific practice are privileged, after all—that they are the only commitments that count? To show why this is not the general upshot of the Peircean view, the hypothetical realist can borrow a page from the anti-representationalists: their “Quinean”, monistic view of ontological commitment. The products of any practice of settling and justifying opinion involve (or are) ontological commitments: all opinions are ontologically committing, in a deflationary sense. However, only the scientific practice entails the aim of ascertaining how things are in an independent reality. Instead of the epistemic thesis of scientific realism—that science provides our best account of reality—the hypothetical realist vouches for something far more modest. Scientific ontological commitment is not privileged; it is merely different.<sup>9</sup> This difference is on another axis, not one of privilege but—we might say—of *depth* of ontological commitment.

At this point one may anticipate an historically motivated objection. So far, I have described Peirce as having proposed a deflationary account of truth, and then argued that Peirce’s definition of science hinges on a fundamental hypothesis of an independent reality, suggesting something closer to a correspondence account. However, is this not the Peirce who identified truth with “warranted assertibility in the ideal limit of inquiry” (Price 2003, p. 175)? And does not this identification raise issues that seem difficult to address: what is this end of inquiry? How could we ever know that we have reached the ideal limit, over some particular question?

These would be good questions, if they were true to Peirce’s view. But Peirce, to my knowledge, never identified truth with “the end of inquiry” or the opinion that stands at its “ideal limit”.<sup>10</sup> Peirce did maintain—as evidenced by the third part of his fundamental hypothesis of science quoted above—that we may reach “the one true conclusion” (Peirce 1877, p. 120). He claimed that we can envision the “final opinion”, or “the result of investigation carried sufficiently far”, even though “[o]ur perversity and that of others may indefinitely postpone the settlement of opinion” (1878, p. 139).<sup>11</sup>

<sup>9</sup> Rorty’s diagnosis of many of the ills of philosophy (in particular in his 1979) is, very briefly, that fending off scepticism invites the idea of privileged representations and foundationalism (for example, in terms of transparent meanings or the sensory “given”). The alternative presented here is not in need of foundationalist backing: instead, as we will see, in Peirce’s view, any scientific theory or method is fallible. However, this view of science also steers clear of radical scepticism. It is a part of the fundamental hypothesis of science that reality affects us. If this appeared to beg the question against the sceptic, Peirce would likely argue that there is none: nobody doubts everything (cf. Peirce 1931–58, § 1.431). For discussion on Peirce’s views and scepticism, see Hookway (2012, ch 1).

<sup>10</sup> I have not found (in Peirce 1931–58 or elsewhere) a single occurrence where Peirce would use the phrase “end of inquiry” to elucidate truth or the “final opinion”. The phrase appears in the “Fixation” (Peirce 1877), where Peirce claims that the sole end of inquiry is the settlement of belief. The main source for the “ideal limit” view of truth is Peirce’s entry on “Truth and Falsity and Error” in Baldwin’s *Dictionary of Philosophy and Psychology* (1902), where it is claimed that truth is “the concordance of an abstract statement with the ideal limit towards which endless investigation would tend to bring scientific belief, [...]” (Peirce 1931–58, § 5.565; cf. § 5.316). However, this looks to be the only place where the idea that truth is concordance with an ideal limit appears in his writings; moreover, Peirce does not claim that truth *is* the ideal limit (but “concordance” with it). It may be that Peirce here identified the “ideal limit” of inquiry with *reality* rather than with some possible opinion.

<sup>11</sup> In the 1877 text, Peirce claimed that the final opinion *will* be reached; this view he famously recanted, stating that the truth is the opinion “that *would* ultimately prevail if investigation were carried sufficiently far in that particular direction” (Peirce 1911, p. 457). Accordingly, Cheryl Misak has argued that truth, for Peirce, should rather be identified with an indefeasible belief: “a true belief is such that, no matter how much further



These notions, however, cannot give us guidance in conducting inquiry. Much of the confusion on this score rests on the mistaken notion that the final opinion is the aim of Peircean science or Peirce's elucidation of that aim—as if it were helpful to suggest that we should aim at an opinion that is final.<sup>12</sup> Rather, the notion of a final opinion animates and makes concrete the possibility that scientific inquiry may, ultimately, lead to some stable conclusions—the “cheerful hope that the processes of investigation, if only pushed far enough, will give one certain solution to each question” (Peirce 1878, p. 138). That science may ultimately lead to such conclusions does not tell us how to go about inquiring—it only tells us to keep inquiring.<sup>13</sup>

The third part of the fundamental hypothesis is important, from Peirce's perspective, because scientific theories and scientific methods—both results of scientific inquiry—are all potentially subject to revision. A corollary—indeed the flipside—of hypothetical realism is what Peirce later called *fallibilism*, the view that any of our opinions may be mistaken.<sup>14</sup> As reality is independent of anyone's opinions of it, there are no guarantees that we have it right; conversely, if anyone's opinion may be mistaken, the ultimate standard of our theories and methods is independent of what we, or anyone, make of it. Importantly for the argument of at hand, however, fallibilism may be absent from our practices of settling and justifying belief. For the followers of the non-scientific practices of settling and justifying opinion, the opinion of some is treated as beyond doubt. This will enable us to detect the varying depth of ontological commitment—a previously unmarked axis of pluralism—within our linguistic practices.

#### 4 Fallibilism and assertoric practices

Hypothetical realism, I will now turn to argue, underwrites a dimension within our assertoric practices that the anti-representationalists have failed to notice. We are realists (of this stripe), at least concerning some issues: we sometimes *do* follow the scientific method of settling and justifying opinion. Our assertoric practices often entail *fallibilism*—the flipside of Peirce's scientific method. In a scientific practice of settling opinion any view, even a well justified one, is not beyond doubt but may be mistaken; this is because reality and, hence, truth, are assumed to be independent of our

---

Footnote 11 continued

we were to investigate and debate, it would not be overturned by experience and argument [...]. [W]ere a belief really to satisfy all the local aims in inquiry, then that belief would be true” (2016, p. 30). While this is a considered explication of the notion of final opinion, it is open to a possible misinterpretation. An “indefeasible” opinion can also be achieved by those following non-scientific practices of settling opinion. If we characterize truth in terms of the final opinion, that opinion should be understood as the indefeasible product of science: the final opinion would not be overturned by further *scientific* inquiry. This interpretation would accord with Misak's overall view, emphasizing the realism entailed by Peirce's view of truth.

<sup>12</sup> The final opinion (arguably) is Peirce's elucidation of what it would be like, in practice, to hold a true opinion (for a contrary interpretation, cf. Lane 2017, ch. 1–2). In line with Peirce's fallibilism, however, we cannot tell whether we have reached the final opinion concerning any question.

<sup>13</sup> Accordingly, a number of commentators of Peirce have interpreted the notion of a final opinion, as well as Peirce's realism, as “regulative assumptions” which scientific inquiry presuppose (cf. Misak 2011, 264–6; cf. Hookway 2012, pp. 59–61).

<sup>14</sup> Cf. Peirce (1931–58, § 1.13–4; § 2.75, 1902).

opinions of it. This is not the case within competing practices of settling and justifying opinion—for example the authoritarian one, where the authority is treated as infallible. If our assertoric practices—at least concerning some issues—exhibit fallibilism, we not only may be but *are* realists, in the sense already distinguished, about those issues.

Fallibilism is not merely the thesis that we have sometimes been mistaken, nor is it the thesis that we do not believe all truths. It is essentially a modal thesis: it maintains that we may be mistaken about anything. However, formulated in this simple fashion, fallibilism faces a well-known problem with necessary truths. If there are necessary truths, we cannot be mistaken about them in the sense that our belief in a necessary truth could turn out to be false.<sup>15</sup> For this reason, and for our purposes here, the central thesis of fallibilism is better put by way of a disjunction:

(F) For any  $p$ , either it is possible that (we believe that  $p$  but it is the case that not- $p$ ), or else it is possible that ( $p$  but we do not believe that  $p$ ).

Fallibilism thus formulated holds of many of our common-sensical and scientific beliefs, even well justified ones. For example, philosophers disagree on whether “water is H<sub>2</sub>O” is (an a posteriori) necessary truth or a contingent truth. Whichever view we subscribe to, however, the claim that “water is H<sub>2</sub>O” is taken to be fallible (by one disjunct of (F) above). With some issues, however, such as the so-called matters of taste, fallibilism does not commonly apply. It does not make much sense to say that, even if most people think vanilla ice cream is good (perhaps under some suitably defined “normal” conditions), the claim that ice cream is good may turn out to be false. (We could argue that precisely this makes the goodness of ice cream a “matter of taste”.) Concerning issues on which we are *not* fallibilists, (F) does not apply to the views of *someone* (or everyone, at least under some conditions). In particular, if we are *not* fallibilists about whether  $p$  is the case, we are able to take the (justified) belief that  $p$  of someone (or everyone) as indefeasible evidence that  $p$ : that someone cannot be mistaken. Fallibilism can thus be deployed to distinguish between topics of discourse where we assume that truth is independent of our opinions of it and other topics where such an assumption is not present. From the Peircean point of view, this is the distinction between questions we assume to be amenable to scientific inquiry and those that we do not.

Why has fallibilism—despite its pragmatist origins—escaped the attention of the contemporary anti-representationalist pragmatists? One central reason for this omission looks to be that the anti-representationalists have proposed their own accounts of the function of the concept of truth, accounts which they may have thought suffice to accommodate the features of our assertoric practices just distinguished—but fall short of doing so.

Rorty famously argued that truth is not an aim of inquiry by arguing that aiming at truth and aiming at justification among peers do not point towards diverging courses

<sup>15</sup> Susan Haack (1979) proposes to solve this problem by defining fallibilism by way of a disjunction: “for all  $p$ , either it is not the case that, necessarily, if we believe that  $p$ , then  $p$ , or else, it is possible that we should believe that  $\sim p$ ”, or  $(p)(\sim L(Bp \rightarrow p) \vee MB \sim p)$ . The second disjunct is intended to take care of the problematic necessary truths. Haack’s definition, however, faces grave difficulties: for example, it implies that we are able to believe the negation of any necessary truth. The account of fallibilism (tentatively) proposed here—inspired by Haack’s disjunctive definition—is not similarly vulnerable.

of action. There is a need, Rorty proposed, to justify our beliefs to “ourselves and our fellow agents”, but there is no additional norm of seeking the truth: “obedience to that commandment will produce no behaviour not produced by the need to offer justification” (Rorty 1998, p. 26). Consequently, on the pragmatist grounds that aiming for the former as opposed to the latter makes no difference in practice, we should stop talking about truth as a norm and stick to justification. However, Rorty also admitted wavering “between trying to reduce truth to justification and propounding some form of minimalism about truth” (Rorty 1998, p. 21). In his more minimalist mode, Rorty proposed that the concept of truth has some salient functions in our assertoric practices. One may endorse a view, or repeat what was said by using the truth predicate. These two uses Rorty labelled the endorsing and the disquotational use of the truth predicate, respectively. (The two, one might think, reduce to one: the truth predicate viewed as a device of assertion.) But he also distinguished a third, *cautionary* use, which underscores the possibility of justification and truth coming apart, as for example in:

- (1) Your belief that  $p$  is perfectly justified, but perhaps not true (cf. Rorty 1991, p. 127).

Here one may already begin to wonder: not true as opposed to what? Apparently this is where the account of truth as a form of justification kicks in: truth and justification diverge because our current justified beliefs can turn out to be other than the justified beliefs we would have, were we more ideally situated. We can, Rorty points out, “never exclude the possibility that some better audience might exist, or come to exist, to whom a belief that is justifiable to us would not be justifiable” (Rorty 1998, p. 22).

But Rorty nowhere seems to consider whether or not the cautionary use can be applied to justified beliefs under *any* conditions. Are there not—as already argued—cases where “ $X$ ’s belief that  $p$  is justified, but perhaps not true” applies to any  $X$ , including any possible future “better audience” (when  $X$  is not defined, vacuously, in terms of having all and only true beliefs)? If this is a correct application of the cautionary use of the truth predicate, truth can exceed the justified opinions of anyone: in this case, the cautionary use already implies fallibilism. For Rorty’s view, this has the rather devastating result that aiming at truth does differ from aiming at justification.<sup>16</sup> Even perfect justification among peers, including better situated, future peers, does not guarantee that our views cannot be improved upon—as marked by Rorty’s own cautionary use of truth. Moreover, this use makes a genuine practical difference in settling and justifying opinion. If our only aim is justification, we may rest content with what “we” have already justified to one another; but when aiming at truth, we must be prepared to question even our (“perfectly”) justified views. Rorty’s cautionary use of truth thus contradicts his central contention that truth, as opposed to justification, does not mark an aim of inquiry.

Price, in turn, has argued that Rorty’s account is mistaken—although, aiming at a different conclusion, for reasons other than those just presented. Price claims that our

<sup>16</sup> It could be argued that Rorty’s anti-representationalism is a revisionary project: instead of pointing out that truth, objectivity and reality play no role in our assertoric practices, Rorty suggested that they should not play the role that they do. There is certainly evidence to bear out such a reading. However, Rorty’s central “pragmatist” argument under scrutiny depends on the contention that there is no practical difference between aiming at truth and aiming at justification in our actual assertoric practices.

assertoric practices entail a norm of truth: calling someone's statement true (untrue) is not merely to reassert or endorse that statement (its negation), but also to say that the speaker is *correct* (*incorrect*). The grounds for this assessment of correctness is in whether we would ourselves make an agreeing or a contrary assertion: "We are prepared to make the judgement that a speaker is *incorrect*, or *mistaken*, in this sense, simply on the basis that we are prepared to make a contrary assertion; [...]" (Price 2003, p. 176). For contrast, Price invites us to envision a linguistic community where this norm of truth is absent. For the speakers in this community, disagreement does not matter: a speaker saying what (one thinks) is not true is criticized or censured. If the norm of truth is not in place, "the wheels of argument do not engage; disagreements slide past one another", and this holds also "of disagreements about warranted assertibility" or justification itself (Price 2003, pp. 185–186). Truth, then, is a norm of our assertoric practices, and—*contra* Rorty—justification and truth point towards different patterns in our assertoric practices. Price argues that there *is* a norm of truth. This norm, however, is underwritten by what we take to be our responsibilities towards one other, not towards anything that exceeds the social sphere.<sup>17</sup>

While Price's account of truth as a norm of assertion and his criticism of Rorty are plausible, they will not suffice to account for the fallibilism present in (some of) our linguistic practices. In an assertoric practice that entails Price's norm, truth is some one thing for all speakers: if two speakers disagree, one of them is mistaken.<sup>18</sup> In this sense, truth is *public*. Nevertheless, other speakers may take the opinions of one or another speaker as infallible, or identify truth with the opinion of someone. A group of religious fundamentalists, say, may subscribe to Price's norm and criticize each other for speaking what is not true, by their own lights. Nevertheless, they still maintain that the Holy Book is infallible, at least concerning some issues. That truth is public does not yet entail that truth is independent of the opinions of anyone.<sup>19</sup> Why this distinction does not emerge in Price's discussion seems reasonably clear: fallibilism is difficult to detect in a consideration of assertoric practices in general. Rather, it surfaces in our practices of settling and justifying opinion. Price's norm, as advertised, is a norm of assertion; but how disagreements are to be resolved—how opinions are to be settled and justified—is an issue on which that norm is not intended to bear.

<sup>17</sup> Diane Heney argues that Price's account of the norm of truth "does not seem capable of making sense of the fact that our responsibilities are not merely to our conversational partners but also to the way the world is" (Heney 2015, p. 513). While I agree with this characterization, it seems to me that this is precisely the conclusion Price wants to draw. Heney finds this problematic, adding that "[t]he very practice of revising one's beliefs in light of new evidence assumes that there is a reality to which we are responding" (*ibid*, p. 513). However, engaging in assertoric practices (including practices of inquiry) does not yet commit us to any assumption of an independent reality. The way I would rephrase the criticism is this: in (at least some of) our practices of inquiry, such an assumption is made; as Price's norm is not intended to account for this fact, it leaves this consequential issue unaddressed.

<sup>18</sup> Christopher Hookway (2012, p. 51) identifies this aspect of Peirce's view with Price's "third norm" in passing.

<sup>19</sup> Price (2003) asks whether truth could be identified with some notion of ("ideal") warrant, supplying some arguments to the effect that it should not. But as Price's discussion concerns the norms of assertion in general, I think this option should never creep on the table: the identification of the norm of truth with an idealized warrant would entail the highly questionable presupposition that we are prepared to assert only what we think is warranted, in this ideal sense.

The fallibilist feature of our practices of settling and justifying opinion, so central to Peirce, has thus become practically invisible to Rorty and Price. However, fallibilism is reflected in the inferentialist account of objectivity provided by Robert Brandom—another pragmatist whom the anti-representationalists have been happy to enlist for their cause, even over suspicions that Brandom may be a step removed from the anti-representationalist view (cf. Price 2010). Brandom aspires to make sense of the representational use of language in inferentialist terms. In order to give such an account, he points towards an inferential feature particular to “ordinary empirical claims”, as opposed to claims that are not deployed in a representational fashion. The central notion of Brandom’s account, in the vocabulary of his inferentialism, is *incompatibility equivalence*. When two assertions are incompatibility equivalent, there is no third assertion that rules out the justification of one but not the other. An “ordinary empirical claim” and claims concerning who is justified in making, or committed to, that claim, are *not* equivalent in this technical sense. Consider the pair of claims of Brandom’s (2000, p. 202) patent example:

- (2) I will write a book on Hegel.
- (3) I foresee that I will write a book on Hegel.

The two claims are not incompatibility equivalent: there is an assertion that rules out being justified in asserting (2) but not (3)—say, “I will die in the next 10 min”. In particular, for ordinary empirical claims, there are no correct instances of what Brandom calls the “very implausible schema”:

(VIS) If *S* is entitled to the claim that the swatch is red, then the swatch is red.

In this manner, the inferential connections of these claims “differ suitably from those associated with any claims about who is committed to, entitled to, or in a position to assert anything” (Brandom 2000, p. 203). This fact, Brandom maintains, underwrites the representational dimension of our use of language: for this reason, at least “ordinary empirical claims” are *about* things, and not merely expressive of our attitudes.

It is easy to see that Brandom’s account of this representational feature of some of our claims coincides with the fallibilism of the Peircean scientific practice of settling and justifying opinion. The inferential relations of ordinary empirical claims differ from the inferential relations of any claims concerning who asserts or is justified in asserting that claim just insofar as we have accepted fallibilism. In particular, claims concerning who is justified in asserting a claim such as (3) neither commit us to nor justify the claim (3) itself. The problematic pattern of inference codified by (VIS) coincides with the pattern of inference blocked by the fallibilist thesis (F). Adopting the fallibilist stance, we are subjecting our claims to a standard of correctness that goes beyond anyone’s (justified) opinion. As Brandom (2000, p. 20344) puts it, it introduces “a kind of correctness in which authority is invested in the *things* we are (in that central normative sense) talking *about* rather than in our *attitudes* toward them”. As with Peirce’s scientific method, the standard of correctness for our claims is independent of anyone’s opinions on it.

There is, however, an important difference between Peirce’s and Brandom’s views. Brandom appears to take it as a matter of course that objectivity is a feature of (at least) “ordinary empirical claims”. From the Peircean point of view, the scientific practice of

justifying and settling opinion may be followed or not followed concerning any claim. For example, take the following pair of claims, both of which—while unusual—seem ordinary and empirical enough:

(4) The Holy Book states that the earth is 6000 years old.

(5) The earth is 6000 years old.

Consider two persons who both believe (4). The first is an unrelenting fundamentalist, who thinks that the Holy Book is infallible: no pronouncement of the Holy Book makes can be mistaken. For such a fundamentalist, there is no third claim that would not be incompatible with (4) but not (5), or vice versa. But a geologist who also believes (4) can easily imagine a claim which is incompatible with (4) but not (5)—say, “the earth is 4.5 billion years old”. Even what appears to be the same claim, such as (5), may or may not be subjected to fallibilism depending on the practice of settling and justifying opinion that the speaker follows. Accordingly, from the Peircean point of view, if there is any sense to be made of the notion of an ordinary empirical claim, it is precisely that the claim is subject to fallibilism: a claim is an ordinary empirical one when we, in our practice of inquiry, follow the scientific method concerning that claim.<sup>20</sup>

## 5 Conclusion

I have argued that the sort of naturalistic reflection of our linguistic behaviour advocated by the anti-representationalists shows that we are fallibilists and, consequently, realists—at least concerning some issues. Fallibilism and the form of realism it entails in our assertoric practices has escaped the attention of the contemporary anti-representationalists, Rorty and Price. It was already suggested that the reason for this might lie in the accounts of the use of the concept of truth Rorty and Price have provided. Another reason for Rorty’s and Price’s omission may be that, despite its pragmatist pedigree, the realist position here propounded has been relatively invisible in the contemporary debate between scientific realists and their opponents. Scientific realists have commonly advanced the epistemic thesis that the theories and methods of science—typically those of an exemplary science such as physics—are our best approximations and guides to reality. A small minority of philosophers—such as Karl Popper (1972)—have been content with characterizing scientific realism in terms of the aim of science in providing true accounts of reality, rather than in terms of its success in doing so. This characterization may appear too modest. The concern is that science loses its distinctiveness as a guide to reality. If we cannot argue that our current

<sup>20</sup> This fact points towards a final difference between Peirce’s and Brandom’s views. Brandom has advocated the inferentialist view that the content of an assertion is its inferential proprieties. However, the meaning of a sentence such as (4) is quite different for the geologist and the fundamentalist: they take the sentence to have very different inferential consequences and antecedents. Under conditions of holism, there is no third point of view which decides which of these inferential connections are the correct ones. If the meaning of an assertion can so considerably vary between agents, how is successful communication possible? While the Peircean view similarly rejects any linguistic a priori perspective, it maintains that the ultimate interpretants of our claims are habits of action, understood broadly as the ways in which we would act, accepting the claim, under all conceivable circumstances. But these circumstances include differing sets of collateral commitments, such as those of the fundamentalist and the geologist. A broader, even more holistic approach may avoid the difficulties Brandom’s inferential account appears to face.

science gives us at least an approximately correct view of reality, why should we rely on science rather than some alternative provider of views of what there is? From the point of view of hypothetical realism, however, this is to miss the distinctiveness of science: the difference between scientific and non-scientific ontological commitments.

The contention that scientific realism must entail a strong version of the epistemic thesis has invited various attempts to argue for the privilege of scientific ontological commitments. To Rorty, such arguments and their key notions of truth and reality appeared as “conversations stoppers” along the lines of religious fundamentalism—as the totalitarian insistence that science, of all our various projects, is connected with reality, or able to uncover truths. This led him to abandon the quest for truth altogether, leaving us with his ethnocentrism, the view that the desire for objectivity is “simply the desire for as much intersubjective agreement as possible, the desire to extend the reference of ‘us’ as far as we can” (Rorty 1998, p. 23). However, giving up fallibilism—and not without irony—ethnocentrism itself turns out to be a conversation stopper. If there is no salient sense in which “our” justified opinions may be mistaken, there is little reason to continue to debate and inquire, or to take seriously the opposing views of various “others”. Fallibilism, in Rorty’s case, was thrown out with the bathwater of “privileged representations”.

Price’s stance towards science is somewhat more complicated. He advocates a reinterpretation of the key notion of representation in terms of his new bifurcation between *I-* and *E-representation*. Any assertion or belief is an I-representation due to its position in an inferential structure within our modes of reasoning and justifying our claims to others. By contrast, E-representations track, indicate or covary with something in the (natural) environment.<sup>21</sup> While all language games are I-representational in nature, scientific language is occupied (also) with E-representation: the external world is what we “have in view in the scientific project” (Price 2013, p. 55).

However, the new bifurcation inevitably invites the issue of the ontological underpinnings of the new bifurcation itself. From what point of view can we tell which different language games really covary with the environment, and which (merely) occupy a place in an inferential structure? Price’s response is unlikely to be that the new bifurcation is drawn from a perspective “outside” our linguistic frameworks. Rather, it is made from subject naturalist point of view of naturalistic reflection on language that is continuous with, indeed part of, the scientific framework (cf. Price 2013, pp. 57–64). However, why does E-representation then apply only to the “language game” of science, and not to other linguistic frameworks and practices (say, poetry, or discussion about poetry)—other than for the fact that the scientific framework is the “language game” of subject naturalism itself?<sup>22</sup> Ironically, Price’s view of E-representation appears stuck between two uneasy options analogous to the dilemma

<sup>21</sup> Although Price views this distinction as one among many within the plurality of vocabularies, not deserving the central place the original bifurcation thesis has occupied, the new bifurcation still opens Price’s position to new lines of criticism. If good sense can be made of how a vocabulary covaries with or tracks the environment, it is not at all clear why a good sense could not be made of central semantic terms such as reference, truth and representation.

<sup>22</sup> In my reading, Price does not intend that any language game could appear similarly E-representational from within; he thinks that E-representation is particular to science. Consider the distinction between two notions of the world which Price proposes in light of his new bifurcation. An I-world is the world as it appears from the point of view of the ontological commitments made within a discourse. The E-world, by

he pushes on traditional scientific realism. Price cannot argue that science has special (E-)representational capacities from an impossible point of view “outside” our vocabularies. However, the only alternative point of view is that of science—the perspective from which the ontological commitments of science naturally appear to carry a privilege.

The Peircean approach defended here provides a way out of this conundrum: it is to reinterpret E-representation in terms of the aim of the scientific project. The products of the scientific establishment, or the issues we now consider susceptible to scientific inquiry, do not enjoy a representational privilege. However, within our scientific practices—as opposed to various others—we engage in something like Price’s E-representation: we intend for our opinions to covary with or track the environment. This distinction is not a bifurcation between bits of language or thought which are amenable to scientific inquiry (or capable of E-representation) and other bits that are not. The divide between what falls under the scope of science and what does not is contingent: it depends on our varying practices of settling and justifying opinion. The epistemic thesis of scientific realism is thus replaced by a far more modest understanding of the aim of the scientific practice. Nevertheless, that practice entails an ontological thesis: hypothetical realism, the assumption of an independent reality. Accordingly, if refashioning E-representation along these lines is the most feasible option for Price, the Carnapian rejection of “both the thesis of the reality of the external world and the thesis of its irreality” is not quite successful: Price is a realist, after all.

Can such realism be maintained without losing anti-representationalism? Hypothetical realism introduces a sense in which some of our ontological commitments are deeper than others: it is our attempt that they reflect the way things are independently of our opinions of them. Along the lines suggested by Peirce’s and Brandom’s terminology, this distinction could be articulated by way of the notion of representation. Representing reality, we could say, is one among the many purposes we use language for. Even so, however, this does not amount to a return to representationalist semantics, the view that propositional or conceptual content is primarily a question of representation, or what is being talked *about*. It does not leave us with the residual question of how to make sense of the idea that thought and language “mirrors” reality, or how to argue that this or that linguistic framework reflects what there *really* is. In this way, the Peircean notion of science provides us with realism without representationalism.<sup>23</sup>

**Acknowledgements** Open access funding provided by University of Oulu including Oulu University Hospital.

**Open Access** This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution,

Footnote 22 continued

contrast, is the environment “external” to our language games. If this distinction were just perspectival, the E-world would be the I-world as it appears from within any given discourse. However, Price is quite clear that “the e-world simply *is* the i-world of scientific vocabulary” (Price 2013, p. 55).

<sup>23</sup> For discussions and comments, I am indebted to Chiara Ambrosio, Mats Bergman, Brendan Hogan, David Hildebrand, Katariina Holma, Jonathan Knowles, Robert Kraut, Lawrence Marcelle, Cheryl Misak, Sami Pihlström, Huw Price, Bjørn Ramberg, Jooeppi Räikkönen, Chris Voparil, and two anonymous referees, among others. My work has been supported by the Academy of Finland (project 285812) and the Emil Aaltonen Foundation.



and reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made.

## References

- Bergman, M. (2007). Representationism and presentationism. *Transactions of the Charles S. Peirce Society*, 43(1), 53–89.
- Brandon, R. (2000). *Articulating reasons*. Cambridge, Mass.: Harvard University Press.
- Carnap, R. (1956). Empiricism, semantics and ontology. *Meaning and necessity: A study in semantics and modal logic* (2nd enlarged edition ed., pp. 205–221). Chicago: University of Chicago Press.
- Fine, A. (1984). Natural ontological attitude. In J. Leplin (Ed.), *Scientific realism* (pp. 261–277). Berkeley: University of California Press.
- Haack, S. (1979). Fallibilism and necessity. *Synthese*, 41(1), 37–63.
- Hene, D. (2015). Comments and criticism: Reality as necessary friction. *Journal of Philosophy*, 112, 504–514.
- Hookway, C. (2012). *The pragmatic maxim. Essays on peirce and pragmatism*. Oxford: Oxford University Press.
- Knowles, J. (2017). Global expressivism and the flight from metaphysics. *Synthese*, 194(12), 4781–4797.
- Kraut, R. (1990). Varieties of pragmatism. *Mind*, 99(394), 157–183.
- Lane, R. (2017). *Peirce on realism and idealism*. Cambridge: Cambridge University Press.
- Legg, C., & Giladi, P. (2018). Metaphysics—low in price, high in value: a critique of global expressivism. *Transactions of the Charles S. Peirce Society*, 54(1), 64–83.
- Misak, C. (2011). American pragmatism and indispensability arguments. *Transactions of the Charles S. Peirce Society*, 47(3), 261–273.
- Misak, C. (2016). *Cambridge pragmatism*. Oxford: Oxford University Press.
- Peirce, C. S. (1877a). The fixation of belief. In N. Houser & C. Kloesel (Eds.), *The essential Peirce* (Vol. 1, pp. 109–123). Bloomington, Indianapolis: Indiana University Press.
- Peirce, C. S. (1877b). How to make our ideas clear. In N. Houser & C. Kloesel (Eds.), *The essential Peirce* (Vol. 1, pp. 109–123). Bloomington, Indianapolis: Indiana University Press.
- Peirce, C. S. (1906). The basis of pragmatism in the normative sciences, in the Peirce Edition Project (ed.), *The essential Peirce*, Vol. 2, Bloomington and Indianapolis: Indiana University Press, 1998, pp. 371–97.
- Peirce, C. S. (1911). A sketch of logical critics, in the Peirce Edition Project (ed.), *The essential Peirce*, Vol. 2, Bloomington and Indianapolis: Indiana University Press, 1998, pp. 451–62.
- Peirce, C. S. (1931–58). *Collected papers of Charles Sanders Peirce*, Vols. 1–8. C. Hartshorne, P. Weiss and A. W. Burks, eds, Cambridge, MA: Harvard University Press.
- Popper, K. (1972). *Objective knowledge: An evolutionary approach*. Oxford: Clarendon Press. Revised edition 1979.
- Price, H. (1992). Metaphysical pluralism. *Journal of Philosophy*, 89, 387–409.
- Price, H. (2003). Truth as convenient friction. *Journal of Philosophy*, 100, 167–190.
- Price, H. (2004). Naturalism without representationalism, in M. De Caro & D. Macarthur (eds.), *Naturalism in question*. Cambridge, MA: Harvard University Press, pp. 71–88.
- Price, H. (2007). Quining naturalism. *Journal of Philosophy*, 104, 375–402.
- Price, H. (2010). One cheer for representationalism? In R. Auxier (Ed.), *The philosophy of Richard Rorty, Library of Living Philosophers XXXII* (pp. 269–289). Chicago: Open Court.
- Price, H. (2011). Expressivism for two voices. In J. Knowles & H. Rydenfelt (Eds.), *Pragmatism, science and naturalism* (pp. 87–113). Berlin and New York: Peter Lang.
- Price, H. (2013). *Expressivism, pragmatism and representationalism*. Cambridge: Cambridge University Press.
- Rorty, R. (1979). *Philosophy and the mirror of nature*. Princeton: Princeton University Press.
- Rorty, R. (1982). *Consequences of pragmatism*. Minneapolis: University of Minnesota Press.
- Rorty, R. (1991). Pragmatism, Davidson and Truth, in *Objectivity, relativism, and truth: Philosophical papers Vol. 1*, Cambridge: Cambridge University Press, 1991, pp. 126–150.
- Rorty, R. (1998). Is truth a goal of enquiry? Donald Davidson versus Crispin Wright. *Truth and progress: Philosophical papers* (Vol. 3, pp. 19–42). Cambridge: Cambridge University Press.

- 
- Rydenfelt, H. (2011a). Epistemic norms and democracy: A response to Talisse. *Metaphilosophy*, 42(5), 572–588.
- Rydenfelt, H. (2011b). Naturalism and normative science. In J. Knowles & H. Rydenfelt (Eds.), *Naturalism and normative science* (pp. 115–138). Berlin and New York: Peter Lang.
- Rydenfelt, H. (forthcoming). Democracy and moral inquiry: Problems of the Methodological Argument. *Transactions of the Charles S. Peirce Society*.
- Short, T. L. (2007). *Peirce's theory of signs*. Cambridge: Cambridge University Press.
- van Fraassen, B. (1980). *The scientific image*. Oxford: Oxford University Press.

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.