

## CHAPTER THIRTEEN

### SOME SCHOOL OF THOUGHTS IN EPISTEMOLOGY

#### 13.1 Empiricism

In Philosophy, empiricism is a theory that states that knowledge comes only or primarily from sensory experience.<sup>268</sup> Empiricism emphasizes the role of empirical evidence in the formation of ideas, rather than innate ideas or traditions.<sup>269</sup> However, Empiricists may argue that traditions (or customs) arise due to relations of previous sense experiences.<sup>270</sup> Historically, empiricism was associated with the “blank slate” concept (*tabula rasa*), according to which the human mind is blank at birth and develops its thoughts only through experience.

Empiricism in the Philosophy of science emphasizes evidence, especially as discovered in experiments. It is a fundamental part of the scientific method that all hypotheses and theories must be tested against observations of the natural world rather than resting solely on *a priori* reasoning, intuition, or revelation. Empiricism, often used by natural scientists, says that knowledge is acquired from experience and that knowledge is tentative and probabilistic, subject to continued revision and falsification.<sup>271</sup> Empirical research, including experiments and validated measurement tools, guides the scientific method.

#### 13.2 Rationalism

Rationalism is the view that regards reason as the main source and test of knowledge. Holding that reality itself has an inherently logical structure, the rationalist asserts that a class of truths exists and that the intellect can grasp directly. According to the rationalists, there are certain rational principles—especially in logic and mathematics, including in ethics and metaphysics, there are so fundamental that to deny them is to fall into contradiction. The rationalists’ confidence in reason and proof tends, therefore, to detract from their respect for other ways of knowing.

Rationalism is any view appealing to intellectual and deductive reason (as opposed to sensory experience or any religious teachings) as the source of knowledge or justification. Thus, it holds that some propositions are knowable either through intuition or through being deduced through valid arguments from intuited propositions. Depending on the strength of the belief, this can result in a range of positions from the moderate view that reason has precedence over other ways of acquiring knowledge, to the radical position that reason is the only path to knowledge.

#### 13.3 Skepticism

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<sup>268</sup> H.C. Ezebuilo, “Locke, Berkeley and Hume: A Brief Survey of Empiricism,” *International Journal of Research in Education, Humanities and Commerce* 1(2), (2020), 84.

<sup>269</sup> Ibid.

<sup>270</sup> Ibid.

<sup>271</sup> Cf. H.C. Ezebuilo and I.N. Okechukwu, “A Hermeneutic Consideration of Karl Popper’s Falsification Theory,” *Nnamdi Azikiwe Journal of Philosophy*, 12(2), (2021).

Skepticism is a position that questions the possibility of human knowledge, either in particular domains or on a general level. Skepticism does not refer to any one specific school of philosophy, but is rather a thread that runs through many Epistemological debates. Ancient Greek skepticism began during the Hellenistic period in philosophy, which featured both Pyrrhonism (notably defended by Pyrrho and Sextus Empiricus) and Academic skepticism (notably defended by Arcesilaus and Carneades). Among ancient Indian Philosophers, skepticism was notably defended by the Ajñana school and in the Buddhist Madhyamika tradition. In modern Philosophy, René Descartes' famous inquiry into mind and body began as an exercise in skepticism, in which he started by trying to doubt all purported cases of knowledge in order to search for something that was known with absolute certainty.

## 12.4 Pragmatism

Pragmatism is an Empiricist Epistemology formulated by Charles Sanders Peirce, William James, and John Dewey, which understands truth as that which is practically applicable in the world. Pragmatists often treat truth as the final outcome of ideal scientific inquiry, meaning that something cannot be true unless it is potentially observable. Peirce formulates the maxim: “Consider what effects, that might conceivably have practical bearings, we conceive the object of our conception to have. Then, our conception of these effects is the whole of our conception of the object.”<sup>272</sup> This suggests that we are to analyse ideas and objects in the world for their practical value. This is in contrast to any correspondence theory of truth that holds that what is true is what corresponds to an external reality. William James suggests that through a pragmatist epistemology, theories “become instruments, not answers to enigmas in which we can rest.”<sup>273</sup>

In the late 19th and early 20th century, several forms of pragmatic Philosophy arose. The ideas of pragmatism, in its various forms, developed mainly from discussions between Charles Sanders Peirce and William James as already noted. James popularized the term “pragmatism,” giving Peirce full credit for its patrimony, but Peirce later demurred from the tangents that the movement was taking, and redubbed what he regarded as the original idea with the name of “pragmaticism.” Along with its *pragmatic theory of truth*, this perspective integrates the basic insights of empirical (experience-based) and rational (concept-based) thinking.

### 13.4.1 Charles Peirce

Charles Peirce (1839–1914) was highly influential in laying the groundwork for today’s empirical scientific method. Although Peirce severely criticized many elements of Descartes’ peculiar brand of rationalism, he did not reject rationalism outright. Indeed, he concurred with the main ideas of rationalism, most importantly the idea that rational concepts can be meaningful and the idea that rational concepts necessarily go beyond the data given by empirical observation. In later years he even emphasized the concept-driven side of the then ongoing

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<sup>272</sup> W. James, and G. Gunn, *Pragmatism and other Essays*, 32-33.

<sup>273</sup> Ibid.

debate between strict empiricism and strict rationalism, in part to counterbalance the excesses to which some of his cohorts had taken pragmatism under the “data-driven” strict-empiricist view.

Among Peirce’s major contributions was to place inductive reasoning and deductive reasoning in a complementary rather than competitive mode, the latter of which had been the primary trend among the educated since David Hume wrote a century before. To this, Peirce added the concept of abductive reasoning. The combined three forms of reasoning serve as a primary conceptual foundation for the empirically based scientific method today. Peirce’s approach presupposes that (1) the objects of knowledge are real things, (2) the characters (properties) of real things do not depend on our perceptions of them, and (3) everyone who has sufficient experience of real things will agree on the truth about them. According to Peirce’s doctrine of fallibilism, the conclusions of science are always tentative. The rationality of the scientific method does not depend on the certainty of its conclusions, but on its self-corrective character: by continued application of the method, science can detect and correct its own mistakes, and thus eventually lead to the discovery of truth.<sup>274</sup>

In his Harvard “Lectures on Pragmatism” (1903), Peirce enumerated what he called the “three cotary propositions of pragmatism” (*cotis*, whetstone), saying that they “put the edge on the maxim of pragmatism.” First among these, he listed the peripatetic-thomist observation mentioned above, but he further observed that this link between sensory perception and intellectual conception is a two-way street. That is, it can be taken to say that whatever we find in the intellect is also incipiently in the senses. Hence, if theories are theory-laden then so are the senses, and perception itself can be seen as a species of abductive inference, its difference being that it is beyond control and hence beyond critique—in a word, incorrigible. This in no way conflicts with the fallibility and revisability of scientific concepts, since it is only the immediate percept in its unique individuality or “thisness”—what the Scholastics called its *haecceity*—that stands beyond control and correction. Scientific concepts, on the other hand, are general in nature, and transient sensations do in another sense find correction within them. This notion of perception as abduction has received periodic revivals in artificial intelligence and cognitive science research, most recently for instance with the work of Irvin Rock on *indirect perception*.<sup>275</sup>

#### 13.4.2 William James

Around the beginning of the 20th century, William James (1842–1910) coined the term “radical empiricism” to describe an offshoot of his form of pragmatism, which he argued could be dealt with separately from his pragmatism—though in fact the two concepts are intertwined in James’s published lectures. James maintained that the empirically observed “directly apprehended universe needs...no extraneous trans-empirical connective support,”<sup>276</sup> by which he meant to rule out the perception that there can be any value added by seeking supernatural explanations

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<sup>274</sup> “Empiricism,” *Macmillan Encyclopedia of Philosophy*, 551.

<sup>275</sup> Irvin Rock, *Indirect Perception* (Cambridge, Massachusetts, 1997), 77-78.

<sup>276</sup> William James, *The Meaning of Truth* (1911), <https://www.communicationcache.com>.

for natural phenomena. James' "radical empiricism" is thus *not* radical in the context of the term empiricism, but is instead fairly consistent with the modern use of the term empirical.

John Dewey (1859–1952) modified James' pragmatism to form a theory known as instrumentalism. The role of sense experience in Dewey's theory is crucial, in that he saw experience as unified totality of things through which everything else is interrelated. Dewey's basic thought, in accordance with empiricism, was that reality is determined by past experience. Therefore, humans adapt their past experiences of things to perform experiments upon and test the pragmatic values of such experience. The value of such experience is measured experientially and scientifically, and the results of such tests generate ideas that serve as instruments for future experimentation, in physical sciences as in ethics.<sup>277</sup> Thus, ideas in Dewey's system retain their empiricist flavour in that they are only known *a posteriori*.

Contemporary versions of pragmatism have been most notably developed by Richard Rorty and Hilary Putnam. Rorty proposed that values were historically contingent and dependent upon their utility within a given historical period.<sup>278</sup> Contemporary philosophers working in pragmatism are called neopragmatists, and also include Nicholas Rescher, Robert Brandom, Susan Haack, and Cornel West.

### 13.5 Naturalized Epistemology

In certain respects an intellectual descendant of pragmatism, naturalized epistemology considers the evolutionary role of knowledge for agents living and evolving in the world.<sup>279</sup> It de-emphasizes the questions around justification and truth, and instead asks, empirically, how reliable beliefs are formed and the role that evolution played in the development of such processes. It suggests a more empirical approach to the subject as a whole, leaving behind philosophical definitions and consistency arguments, and instead using psychological methods to study and understand how knowledge is actually formed and is used in the natural world. As such, it does not attempt to answer the analytic questions of traditional epistemology, but rather replace them with new empirical ones.<sup>280</sup>

Naturalized epistemology was first proposed in "Epistemology Naturalized", a seminal paper by W.V.O. Quine.<sup>281</sup> A less radical view has been defended by Hilary Kornblith in *Knowledge and its Place in Nature*, in which he seeks to turn epistemology towards empirical investigation without completely abandoning traditional epistemic concepts.

### 13.6 Feminist Epistemology

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<sup>277</sup>Eric Thomas Weber, "What Experimentalism Means in Ethics," *The Journal of Speculative Philosophy*, no. 25 (2011), 99.

<sup>278</sup> R. Rorty, *Consequences of Pragmatism* (Minneapolis: University of Minnesota Press, 1982).

<sup>279</sup>Kim Jaegwon, "What Is Naturalized Epistemology?" *Philosophical Perspectives*, 2, (1988), 405.

<sup>280</sup> Ibid.

<sup>281</sup> Wilard V.O. Quine, "Epistemology Naturalized." In E. Sosa & J. Kim (eds.). *Epistemology: An Anthology* (Malden, MA: Blackwell Publishing, 2004), 292.

Feminist epistemology is a subfield of epistemology which applies feminist theory to epistemological questions. It began to emerge as a distinct subfield in the 20th century. Prominent feminist epistemologists include Miranda Fricker (who developed the concept of epistemic injustice), Donna Haraway (who first proposed the concept of situated knowledge), Sandra Harding, and Elizabeth Anderson.<sup>282</sup> Harding proposes that feminist epistemology can be broken into three distinct categories: Feminist empiricism, standpoint epistemology, and postmodern epistemology.<sup>283</sup> Feminist epistemology has also played a significant role in the development of many debates in social epistemology.

### 13.7 Relativism

Epistemic relativism is the view that what is true, rational, or justified for one person need not be true, rational, or justified for another person. Epistemic relativists therefore assert that while there are *relative* facts about truth, rationality, justification, and so on, there is no *perspective-independent* fact of the matter.<sup>284[78]</sup> Note that this is distinct from epistemic contextualism, which holds that the *meaning* of epistemic terms vary across contexts (e.g. “I know” might mean something different in everyday contexts and skeptical contexts). In contrast, epistemic relativism holds that the relevant *facts* vary, not just linguistic meaning. Relativism about truth may also be a form of ontological relativism, insofar as relativists about truth hold that facts about what *exists* vary based on perspective.

### 13.8 Constructivism

Constructivism is a view in philosophy according to which all knowledge is a compilation of human-made constructions, not the neutral discovery of an objective truth. Whereas objectivism is concerned with the object of our knowledge, constructivism emphasizes how we construct knowledge.<sup>285</sup> Constructivism proposes new definitions for knowledge and truth, which emphasize intersubjectivity rather than objectivity, and viability rather than truth. The constructivist point of view is in many ways comparable to certain forms of pragmatism.

### 13.9 Idealism

Idealism is a broad term referring to both an ontological view about the world being in some sense mind-dependent and a corresponding epistemological view that everything we know can be reduced to mental phenomena. First and foremost, idealism is a metaphysical doctrine. As an epistemological doctrine, idealism shares a great deal with both empiricism and rationalism. Some of the most famous empiricists have been classified as idealists (particularly Berkeley), and yet the subjectivism inherent to idealism also resembles that of Descartes in many respects. Many idealists believe that knowledge is primarily (at least in some areas) acquired by *a*

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<sup>282</sup>“Feminist Epistemology,” *Stanford Encyclopedia of Philosophy*. Retrieved October 31, 2021.

<sup>283</sup> *Ibid.*

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<sup>285</sup> Alan Hájek and Hanti Lin, “A Tale of Two Epistemologies?” *Res Philosophica*, 94 (2), (2017), 207.

*priori* processes, or that it is innate—for example, in the form of concepts not derived from experience. The relevant theoretical concepts may purportedly be part of the structure of the human mind (as in Kant’s theory of transcendental idealism), or they may be said to exist independently of the mind (as in Plato’s theory of Forms).

Some of the most famous forms of idealism include transcendental idealism (developed by Immanuel Kant), subjective idealism (developed by George Berkeley), and absolute idealism (developed by Georg Wilhelm Friedrich Hegel and Friedrich Schelling).

### 13.10 Bayesian Epistemology

Bayesian epistemology is a formal approach to various topics in epistemology that has its roots in Thomas Bayes’ work in the field of probability theory. One advantage of its formal method in contrast to traditional epistemology is that its concepts and theorems can be defined with a high degree of precision. It is based on the idea that beliefs can be interpreted as subjective probabilities. As such, they are subject to the laws of probability theory, which act as the norms of rationality. These norms can be divided into static constraints, governing the rationality of beliefs at any moment, and dynamic constraints, governing how rational agents should change their beliefs upon receiving new evidence.<sup>286</sup> The most characteristic Bayesian expression of these principles is found in the form of Dutch books, which illustrate irrationality in agents through a series of bets that lead to a loss for the agent no matter which of the probabilistic events occurs. Bayesians have applied these fundamental principles to various epistemological topics but Bayesianism does not cover all topics of traditional epistemology.<sup>287</sup>

### 13.11 Indian Pramana

Indian schools of philosophy, such as the Hindu Nyaya and Carvaka schools, and the Jain and Buddhist philosophical schools, developed an epistemological tradition independently of the Western philosophical tradition called pramana. Pramana can be translated as instrument of knowledge and refers to various means or sources of knowledge that Indian philosophers held to be reliable. Each school of Indian philosophy had their own theories about which pramanas were valid means to knowledge and which were unreliable (and why).<sup>288</sup> A Vedic text, Taittirīya Āraṇyaka (c. 9th–6th centuries BCE), lists four means of attaining correct knowledge: *smṛti* (tradition or scripture), *pratyakṣa* (perception), *aitihya* (communication by one who is expert, or tradition), and *anumāna* (reasoning or inference).<sup>289</sup>

In the Indian traditions, the most widely discussed pramanas are: *Pratyakṣa* (perception), *Anumāna* (inference), *Upamāna* (comparison) and

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<sup>286</sup> Stephan Hartmann and Jan Sprenger, “Bayesian Epistemology.” *The Routledge Companion to Epistemology* (London: Routledge, 2010), 609.

<sup>287</sup> Ibid.

<sup>288</sup> B.K. Matilal, *Perception: An Essay on Classical Indian Theories of Knowledge* (Oxford University Press, 1986), xiv.

<sup>289</sup> Ibid. see also Jose I. Cabezón, “Truth in Buddhist Theology,” in R. Jackson and J. Makransky, (eds.), *Buddhist Theology, Critical Reflections by Contemporary Buddhist Scholars* (London: Curzon, 2000), 139.

analogy), *Arthāpatti* (postulation, derivation from circumstances), *Anupalabdi* (non-perception, negative/cognitive proof) and *Śabda* (word, testimony of past or present reliable experts). While the Nyaya school (beginning with the Nyāya Sūtras of Gotama, between 6th-century BCE and 2nd-century BC<sup>290</sup>) were a proponent of realism and supported four pramanas (perception, inference, comparison/analogy and testimony), the Buddhist epistemologists (Dignaga and Dharmakirti) generally accepted only perception and inference. The Carvaka school of materialists only accepted the pramana of perception, and hence were among the first empiricists in the Indian traditions.<sup>291</sup> Another school, the Ajñana, included notable proponents of philosophical skepticism.

The theory of knowledge of the Buddha in the early Buddhist texts has been interpreted as a form of pragmatism as well as a form of correspondence theory.<sup>292</sup> Likewise, the Buddhist philosopher Dharmakirti has been interpreted both as holding a form of pragmatism or correspondence theory for his view that what is true is what has effective power (*arthakriya*).<sup>293</sup> The Buddhist Madhyamika school's theory of emptiness (*shunyata*) meanwhile has been interpreted as a form of philosophical skepticism.<sup>294</sup>

The main contribution to epistemology by the Jains has been their theory of “many sided-ness” or multi-perspectivism (*Anekantavada*), which says that since the world is multifaceted, any single viewpoint is limited (*naya* – a partial standpoint).<sup>295</sup> This has been interpreted as a kind of pluralism or perspectivism. According to Jain epistemology, none of the pramanas gives absolute or perfect knowledge since they are each limited points of view.

### 13.12 Social Epistemology

Social epistemology deals with questions about knowledge in contexts where our knowledge attributions cannot be explained by simply examining individuals in isolation from one another, meaning that the scope of our knowledge attributions must be widened to include broader social contexts. It also explores the ways in which interpersonal beliefs can be justified in social contexts. The most common topics discussed in contemporary social epistemology are testimony, which deals with the conditions under which a belief “x is true” which resulted from being told “x is true” constitutes knowledge; peer disagreement, which deals with when and how I should revise my beliefs in light of other people holding beliefs that contradict mine; and group epistemology, which deals with what it means to attribute knowledge to groups rather than individuals, and when group knowledge attributions are appropriate.

### 13.13 Formal Epistemology

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<sup>290</sup> Ibid.

<sup>291</sup> Ibid.

<sup>292</sup> D. Long, *Jainism: An Introduction*, 125.

<sup>293</sup> Ibid.

<sup>294</sup> Ibid.

<sup>295</sup> Ibid.

Formal epistemology uses formal tools and methods from decision theory, logic, probability theory and computability theory to model and reason about issues of epistemological interest.<sup>[102]</sup> Work in this area spans several academic fields, including philosophy, computer science, economics, and statistics. The focus of formal epistemology has tended to differ somewhat from that of traditional epistemology, with topics like uncertainty, induction, and belief revision garnering more attention than the analysis of knowledge, skepticism, and issues with justification.

### **13.14 Metaepistemology**

Metaepistemology is the metaphilosophical study of the methods, aims, and subject matter of epistemology.<sup>[103]</sup> In general, metaepistemology aims to better understand our first-order epistemological inquiry. Some goals of metaepistemology are identifying inaccurate assumptions made in epistemological debates and determining whether the questions asked in mainline epistemology are the *right* epistemological questions to be asking.

### **13.15 Realism**

Epistemological realism is a philosophical position holding that what can be known about an object exists independently of one's mind.<sup>296</sup> It is opposed to epistemological idealism. Reality as a school of thought believes that it is possible to obtain knowledge about mind-independent reality. It is the viewpoint which accords to things which are known or perceived as existence or nature which is independent of whether anyone is thinking about or perceiving them. While there are certainly significant similarities linking the variety of positions commonly described as realist, there are also important differences which obstruct any straightforward general characterization of realism.

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<sup>296</sup> John Haldane, Crispin Wright (eds.), *Reality, Representation, and Projection*, (Oxford: oxford University Press, 1993), 16.