EPISTEMOLOGY AT A GLANCE

Hyginus Chibuike Ezebuilo

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In Memory of my Late Mother Mrs Christiana Oyodo Eze (Nee: Nwaezeochebe)

Buried-23rd April, 2021.

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FOREWORD

Central to answering the fundamental questions of existence is the epistemological quest to know our world. In grappling with numerous problems of human existence such as political, social, religious and scientific issues, there is also the problem of meaning. For instance, one may ask: When all the contingent problems have been resolved or seem to have been resolved, what next? What is the meaning of all these preoccupations after all? While it cannot be said that philosophers have answered these questions to the satisfaction of all, at least they have contributed adequately to understanding the various dimensions of the problems while the search continues. In coming to terms with the problems of existence, our knowledge of the world is very crucial. It is the preoccupation of epistemology to grapple with the sources, types, theories and skepticism in the domain of knowledge. Epistemology is also a traditional aspect of the philosophical enterprise.

Again, everyone knows something. In fact, everyone knows some facts about the world which are often taken for granted. But our knowledge of the world does not always give us the expected result due to certain assumptions which, wittingly or unwittingly, we have taken for granted in the knowledge process which behave contrary to expectation. It is on the basis of the above that epistemology as a branch of knowledge investigates into how knowledge is possible based on certain extant traditional, medieval, modern and contemporary theories of knowledge.

Epistemology at a Glance, by Rev. Fr. Dr. Hyginus Chibuike Ezebuilo is one salutary and inspiring attempt to contribute to the analysis, application, problem and importance of this core branch of philosophy popularly christened epistemology. In achieving his set goals, Rev. Fr. Dr. Ezebuilo in the book looks at definition of epistemology, what is knowledge? The nature of justification, philosophical skepticism, history of epistemology, rationalism and empiricism among others.

One may then ask at this juncture: what is new in Rev. Fr. Dr. Ezebuilo's attempt? Afterall, we are used to the problems which mark the regular features of books in epistemology. I want to respond to this question based on my thorough but not perfect perusal of the book that Dr. Ezebuilo examines the age long problems in epistemology with a view to discussing perennial problems in new ways that would impact the knowing process in novel ways that would impact the knowing process. We can discern again remarkable simplicity in his book. The book is also handy for pedagogical purpose. This implies that it will be a very accessible teaching text for students in universities and those who have the quest to have knowledge about knowledge for easy application to problems of existence from the theoretical and political perspectives.

I want to note unequivocally that the central ideas of this book are well discussed with appropriate methodologies. One should commend the author for doing a good work. I

recommend the book to all, especially those interested in probing into epistemology as a crucial aspect of philosophy and those who are saddled with the task of grappling with the problem of existence through the framework of knowledge.

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The Netherlands (2019).

INTRODUCTION

The subject matter of Epistemology (Theory of Knowledge) is human knowledge; its nature, origin, scope and justification. It probes into the meaning and nature of human knowledge. It reflects on issues such as truth and justification which constitute for some scholars, the criteria qualifying any belief to count as knowledge. It also examines and attempts to set out the possibility of knowledge and foundations of certainty of knowledge. Epistemology is closely related to employs data received from Metaphysics in its study of human knowledge.

Questions concerning the nature and scope of human knowledge have constituted an integral part of the discourses of almost all philosophers, right form the Classical Greek Period. In the dialogues of Plato (especially *Theaetetus, Meno* and the *Republic*) and the writings of Aristotle, critical epistemological questions were broached. The later advent of philosophical scepticism brought many more epistemological concerns (especially the possibility of human knowledge) into the philosophical enterprise. These concerns continued to attract the attention of the medieval philosophers, notably the Scholastics. Modern Philosophers from the time of Descartes till the contemporary period have without exception struggled with questions about human knowledge. In fact, the most outstanding distinction between philosophers by the reckoning of many historians of philosophy—the empiricist versus rationalist divide—is largely on epistemological grounds arising from question of whether knowledge fundamentally arises from sense experience or from the faculty of human reason. Generally, schools of thought within the field of Theory of Knowledge include Empiricism, Rationalism, Scepticism, Feminist Epistemology, Naturalized epistemology, Constructivism, Relativism, Epistemic Idealism, Epistemic Realism, Metaepistemology and so on.

Specifically, Epistemology is concerned with propositional knowledge (as against other forms of knowledge like knowledge by acquaintance and knowledge of *how* things are done). Propositional knowledge deals primarily with facts properly framed as logical statements. These statements can be *analytic* (solely on the basis of the principle of non-contradiction) or *synthetic* (based on observation of the givens of experience). In Epistemology, distinction is made between *a priori* and *a posteriori* knowledge. While the former is known independently of experience, the latter is apprehended by experience.

Additionally, concepts such as belief, truth and justification feature prominently in the epistemological discourse. Fundamentally, belief refers to the attitude held by one concerning that which one consider true. Belief has been described in many ways by different philosophers either as mental states, personal dispositions or interpretative schemes informing one's actions. On its part, truth primarily implies the characteristic of matching up with fact or reality. There are many theories of truth, some of which include the Correspondence, Coherence, Sentential, Pragmatic and Prosential theories of truth among others. Justification has to do with the *rationale* behind one's holding on to a reasonable belief. Sources of justification as held by theorists of knowledge include reason, experience and testimony of authority. Epistemologists are divided on the issue of the conditions of justification. Those who hold these conditions to be outside the mental and or psychological states of the subject are called externalists and their position is referred to as epistemic externalism. On the other hand, those who hold that these conditions lie within the mental and or psychological states of the subject are called internalists and their position is referred to as epistemic internalism.

On the nature of knowledge, there is the question of whether or not justified true belief qualifies to be referred to as knowledge and if it not, the next problem would be to determine which one has more value. This is the root of the Gettier Problem. On the nature and conditions for justification of beliefs, the *Virtue Problem* arises which culminates in the rise of Virtue Epistemology which goes beyond the knowledge facts themselves and proceeds with the evaluation of the intellectual virtues of the subjects.

The *Regress Problem* arises, considering the question of the logical foundations of human knowledge. Responses to this problem gave rise to different paradigms of thought—Coherentism, Foundationalism, Infinitism and Foundherentism. Finally, the question arises whether or not knowledge is even possible, given the difficulty in satisfying the condition of epistemic certainty which is at the heart of the definition of knowledge itself. This gave rise to the problem of *Philosophic Skepticism* which is almost as old as Philosophy itself and remains an intractable epistemological problem. Arguments raised against skepticism include the *Polar Argument* and the *Paradigm Case Argument*.

CHAPTER ONE

DEFINING EPISTEMOLOGY

1.1 Introductory Discourse

Epistemology, as a distinct field of inquiry, predates the introduction of the term into the lexicon of philosophy. John Locke, for instance, described his efforts in *Essay Concerning Human Understanding* (1689) as an inquiry "into the original, certainty, and extent of human knowledge, together with the grounds and degrees of belief, opinion, and assent."[1]

René Descartes, who is often credited as the father of modern philosophy, was often preoccupied with epistemological questions in his work. Almost every major historical philosopher has considered questions about what we know and how we know it. Among the Ancient Greek philosophers, Plato distinguished between inquiry regarding what we know and inquiry regarding what exists. A number of important epistemological concerns also appeared in the works of Aristotle.

During the subsequent Hellenistic period, philosophical schools began to appear which had a greater focus on epistemological questions, often in the form of philosophical skepticism. For instance, the Pyrrhonian skepticism of Pyrrho and Sextus Empiricus held that eudaimonia (flourishing, happiness, or "the good life") could be attained through the application of epoché (suspension of judgment) regarding all non-evident matters.[2] Pyrrhonism was particularly concerned with undermining the epistemological dogmas of Stoicism and Epicureanism. The other major school of Hellenistic skepticism was Academic skepticism, most notably defended by Carneades and Arcesilaus, which predominated in the Platonic Academy for almost two centuries.[3] They were specialized in refutation without propagating any positive doctrine of their own.

After the ancient philosophical era but before the modern philosophical era, a number of Medieval philosophers also engaged with epistemological questions at length. Most notable among the Medievals for their contributions to epistemology were Thomas Aquinas, John Duns Scotus, and William of Ockham. In the Islamic epistemology Islamic Golden Age which was booming prior to the Age of Enlightenment in Europe. One of the most prominent and influential philosophers, theologians, jurists, logicians and mystics Abu Hamid Al-Ghazali was seeking to know what we can be certain about: what is true knowledge and not just opinion? To accomplish this goal, he would first consider what kinds of things we can know. This involves a study of epistemology, the theory of knowledge.[4]

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[1] John Locke, "Introduction," An Essay Concerning Human Understanding (Oxford: Oxford University Press, 1975).
[2] Paul K. Moser, *The Oxford Handbook of Epistemology* (Oxford: oxford University Press, 2002), 101.
[3] Ibid.
[4] Ibid.,102.

Epistemology largely came to the fore in philosophy during the early modern period, which historians of philosophy traditionally divide up into a dispute between empiricists (including Francis Bacon, John Locke, David Hume, and George Berkeley) and rationalists (including René Descartes, Baruch Spinoza, and Gottfried Leibniz). The debate between them has often been framed using the question of whether knowledge comes primarily from sensory experience (empiricism), or whether a significant portion of our knowledge is derived entirely from our faculty of reason (rationalism). According to some scholars, this dispute was resolved in the late 18th century by Immanuel Kant, whose transcendental idealism famously made room for the view that "though all our knowledge begins with experience, it by no means follows that all [knowledge] arises out of experience."[5]

There are a number of different methods that contemporary scholars use when trying to understand the relationship between past epistemology and contemporary epistemology. One of the most contentious questions is this: Should we assume that the problems of epistemology are perennial, and that trying to reconstruct and evaluate Plato's or Hume's or Kant's arguments is meaningful for current debates, too?.[6] Similarly, there is also a question of whether contemporary philosophers should aim to *rationally reconstruct and evaluate* historical views in epistemology, or to *merely describe* them.[7] Barry Stroud claims that doing epistemology competently requires the historical study of past attempts to find philosophical understanding of the nature and scope of human knowledge.[8] He argues that since inquiry may progress over time, we may not realize how different the questions that contemporary epistemologists ask, are questions asked at various different points in the history of philosophy.

1.2 What is Epistemology?

The term "epistemology" comes from the Greek words *episteme* and *logos*. While episteme can be translated as knowledge, understanding or acquaintance, logos can be translated as account, argument or reason. Each of these different translations captures some facet of the meaning of these Greek terms as well as a different facet of epistemology itself.

In different parts of its history, different facets of epistemology have attracted attention.[9] Plato's epistemology is an attempt to understand what it is to know, and how knowledge (unlike mere true opinion) is attributed to the knower. Aristotle's epistemology delimits what we can know and how we can know. Similarly, John Locke's epistemology is an attempt to understand the operations of human understanding. Immanuel Kant's epistemology attempts to understand the

[5] Thomas Sturm, "Historical Epistemology or History of Epistemology? The Case of the Relation Between Perception and Judgment," *Erkenntnis* 75(3), 304.
[6] John Bengson and Marc A. Moffett (eds.), *Essays on Knowledge, Mind, and Action* (New York: Oxford University Press, 2011), 14-15.
[7] Ibid.
[8] see Mathew Benton, "Epistemology Personalized," T*he Philosophical Quarterly*. 67(269), (2011), 813.
[9] M. steup and Ram Nata, "Epistemology," *The Stanford Encyclopedia of Philosophy* (2020), Edward N. Zalta (ed.). uRL = https://plato.stanford.edu/archives/fall2020/.

conditions of the possibility of human understanding, while that of Russell is an attempt to understand how modern science could be justified by appeal to sensory experience. Much recent work in epistemology is an attempt to understanding the justification for our knowledge claims. This is sometimes affected by interest…..In any case epistemology tries to understand our cognitive success or cognitive failure.

Epistemology is the branch of philosophy concerned with knowledge. Epistemologists study the nature, origin, and scope of knowledge, epistemic justification, the rationality of belief, and various related issues. Epistemology is considered a major subfield of philosophy, along with other major subfields such as ethics, logic, and metaphysics.

Problems in epistemology are generally clustered around four core areas:

1. The philosophical analysis of the nature of knowledge and the conditions required for a belief to constitute knowledge, such as truth and justification.
2. Potential sources of knowledge and justified belief, such as perception, reason, memory, and testimony.
3. The structure of a body of knowledge or justified belief, including whether all justified beliefs must be derived from justified foundational beliefs or whether justification requires only a coherent set of beliefs.
4. Philosophical skepticism, which questions the possibility of knowledge, and related problems, such as whether skepticism poses a threat to our ordinary knowledge claims and whether it is possible to refute skeptical arguments.

In all these, epistemology aims to answer questions such as "What do we know?", "What does it mean to say that we know something?", "What makes justified beliefs justified?", and "How do we know that we know?"

1.3 Etymology

The word *epistemology* is derived from the ancient Greek *epistēmē*, meaning "knowledge", and the suffix *-logia*, meaning "logical discourse" (derived from the Greek word *logos* meaning "discourse").[10] The appearance of the word in English was predated by the German term *Wissenschaftslehre* (literally, theory of science), which was introduced by philosophers Johann Fichte and Bernard Bolzano in the late 18th century. The word "epistemology" first appeared in 1847, in a review in New York's *Eclectic Magazine*. It was first used as a translation of the word *Wissenschaftslehre* as it appears in a philosophical novel by German author Jean Paul. The title of one of the principal works of Fichte is 'Wissenschaftslehre,' which is now rendered *epistemology*.[11]

[10]"Epistemology," Oxford English Dictionary (3rd ed.) (Oxford: Oxford University Press. 2014).
[11]Anonymous, "Jean-Paul Frederich Richter," *The Eclectic Magazine of Foreign Literature, Science and Art.* 12, (1847), 317.

The word "epistemology" was properly introduced into Anglophone philosophical literature by Scottish philosopher James Frederick Ferrier in 1854, who used it in his *Institutes of Metaphysics*:

> This section of the science is properly termed the Epistemology—the doctrine or theory of knowing, just as ontology is the science of being... It answer rs the general question, 'What is knowing and the known?'—or more shortly, 'What is knowledge?'

It is important to note that the French term *épistémologie* is used with a different and far narrower meaning than the English term "epistemology", being used by French philosophers to refer solely to philosophy of science. For instance, Émile Meyerson opened his *Identity and Reality*, written in 1908, with the remark that the word is becoming current as equivalent to "the philosophy of the sciences."[12]

[12] Cf. Wal Suchting, "Epistemology," *Historical Materialism,* (2018), 331.

CHAPTER TWO

WHAT IS KNOWLEDGE?

2.1 Different Senses of Knowing

Before we can start to explore the arguments developed by different philosophers in the search for knowledge, we first need to understand what philosophers mean by 'knowledge'. Traditionally, there are three different types of knowledge: practical knowledge: knowledge that is skills-based, e.g. being able to drive or use a computer knowledge by acquaintance: knowledge that doesn't involve facts but familiarity with someone or an objects, e.g. I know my mother, I know what an apple looks like factual knowledge: knowledge based on fact, e.g. I know that the sun rises every morning – I know it is true. Philosophers are mostly interested in factual knowledge because they are trying to understand how we can achieve truth about the world.

One of the first philosophers to attempt a definition of knowledge was the Ancient Greek philosopher, Plato. One of Plato's main concerns was to distinguish knowledge from belief. He gave the example of two guides, one who knows the road to a certain destination, and the other who just uses guesswork. Both guides arrive at their destination but which one is more reliable? Most people would argue that the guide who has expertise is more reliable. This is why Plato argues that true belief gives us knowledge of the world only by coincidence. It is never really certain and could change at any time. For example, I may believe in aliens and aliens may actually exist, but if I cannot give an adequate reason for my claim. I can't really call it knowledge. Plato argues that for a factual claim to be knowledge, it has to be a belief which is true and justified. His definition of knowledge is therefore that it is must be a justified true belief.

Almost every debate in epistemology is in some way related to knowledge. Most generally, "knowledge" is a familiarity, awareness, or understanding of someone or something, which might include facts (propositional knowledge), skills (procedural or how-to knowledge), or objects (acquaintance knowledge). Philosophers tend to draw an important distinction between three different senses of knowing something: "knowing that" (knowing the truth of propositions), "knowing how" (understanding how to perform certain actions), and "knowing by acquaintance" (directly perceiving an object, being familiar with it, or otherwise coming into contact with it). Epistemology is primarily concerned with the first of these forms of knowledge, propositional knowledge.

All three senses of knowing can be seen in our ordinary use of the word. In mathematics, you can know *that* 2 + 2 = 4, but there is also knowing *how* to add two numbers, and knowing a *person* (e.g., knowing other persons, or knowing oneself), *place* (e.g., one's hometown), *thing* (e.g., cars), or *activity* (e.g., addition).[13] While these distinctions are not explicit in English, they are explicitly made in other languages, including French, Portuguese, Spanish, Romanian, German and Dutch (although some languages related to English have been

[13] "Formal Representations of Belief" *Stanford Encyclopedia of Philosophy*, Retrieved October 24, 2021.

said to retain these verbs, such as Scots). The theoretical interpretation and significance of these linguistic issues remains controversial.

In his paper book *Problems of Philosophy*, Bertrand Russell brought a great deal of attention to the distinction between "knowledge by description" and "knowledge by acquaintance."[14] Gilbert Ryle is similarly credited with bringing more attention to the distinction between knowing how and knowing that in *The Concept of Mind*.[15] In *Personal Knowledge*, Michael Polanyi argues for the epistemological relevance of knowledge how and knowledge that; using the example of the act of balance involved in riding a bicycle, he suggests that the theoretical knowledge of the physics involved in maintaining a state of balance cannot substitute for the practical knowledge of how to ride, and that it is important to understand how both are established and grounded.[16] This position is essentially Ryle's, who argued that a failure to acknowledge the distinction between "knowledge that" and "knowledge how" leads to infinite regress.[17]

2.2 *A priori* and *a posteriori* knowledge

One of the most important distinctions in epistemology is between what can be known *a priori* (independently of experience) and what can be known *a posteriori* (through experience). The terms originate from the Analytic methods of Aristotle's *Organon*, and may be roughly defined as follows:[18]

- *A priori* knowledge is knowledge that is known independently of experience (that is, it is non-empirical, or arrived at before experience, usually by reason). It will henceforth be acquired through anything that is independent from experience.
- *A posteriori* knowledge is knowledge that is known by experience (that is, it is empirical, or arrived at through experience).

Views that emphasize the importance of *a priori* knowledge are generally classified as rationalist. Views that emphasize the importance of *a posteriori* knowledge are generally classified as empiricist.

2.3 Conditions of Knowledge

The traditional definition of knowledge as handed down from Plato is: justified true belief.

2.3.1 Belief

[14] B. Russell, *Problem of Philosophy*, https://www.sparknotes.com/russell/problem-of-philosophy/
[15] Gilbert Ryle, *The Concept of Mind*, https://www.britannica.com/topic/concept-of-mind/
[16] Michael Polanyi, *Personal Knowledge.*, https://www.giffordlectures.org/personal-knowledge.
[17] Gilbert Ryle, *The Concept of Mind*.
[18] Cf. Benardete Seth, T*he Being of the Beautiful* (Chicago: The University of Chicago Press, 1984),169.

One of the core concepts in epistemology is *belief*. A belief is an attitude that a person holds regarding anything that he take, to be true.[19] For instance, to believe that snow is white is comparable to accepting the truth of the proposition "snow is white". Beliefs can be *occurrent* (example, a person actively thinking "snow is white"), or they can be *dispositional* (example, a person who if asked about the color of snow would assert "snow is white"). While there is no universal agreement about the nature of belief, most contemporary philosophers hold the view that a disposition to express belief *B* qualifies as holding the belief *B*.[20] There are various different ways that contemporary philosophers have tried to describe beliefs, including as representations of ways that the world could be, as dispositions to act as if certain things are true, as interpretive schemes for making sense of someone's actions, or as mental states that fill a particular function.[21]

Some have also attempted to offer significant revisions to our notion of belief, including eliminativists about belief who argue that there is no phenomenon in the natural world which corresponds to our folk psychological concept of belief; and formal epistemologists who aim to replace our bivalent notion of belief (either I have a belief or I don't have a belief) with the more permissive, probabilistic notion of credence (there is an entire spectrum of degrees of belief, not a simple dichotomy between belief and non-belief.[22]

While belief plays a significant role in epistemological debates surrounding knowledge and justification, it also has many other philosophical debates in its own right. Notable debates include: What is the rational way to revise one's beliefs when presented with various sorts of evidence?; Is the content of our beliefs entirely determined by our mental states, or do the relevant facts have any bearing on our beliefs (example, if I believe that I am holding a glass of water, is the non-mental fact that water is H_2O part of the content of that belief)?; and Must it be possible for a belief to be expressible in language, or are there non-linguistic beliefs?

2.3.2 Truth

Truth is the property or state of being in accordance with facts or reality.[23] On most views, truth is the correspondence of language or thought to a mind-independent world. This is called the correspondence theory of truth. Among philosophers who think that it is possible to analyze the conditions necessary for knowledge, virtually all of them accept that truth is such a condition. There is much less agreement about the extent to which a knower must know *why* something is true in order to know. On such views, something being known implies that it is true. However, this should not be confused for the more contentious view that one must know that one knows in order to know.

[19]Edmund L. Gettier, "Is Justified True Belief Knowledge?" *Analysis*, Vol. 23, (1963), 121–123.
[20] Ibid.
[21]"The Analysis of Knowledge," *Stanford Encyclopedia of Philosophy*, Retrieved October 27, 2021.
[22] Ibid.
[23] Rene Descartes, *The Philosophical Writings of Rene Descartes* Vol. I. (Cambridge University Press, 1985), 171.

Epistemologists disagree about whether belief is the only truth-bearer. Other common suggestions for things that can bear the property of being true include propositions, sentences, thoughts, utterances, and judgments. Plato argues that belief is the most commonly invoked truth-bearer. Many of the debates regarding truth are at the crossroads of epistemology and logic. Some contemporary debates regarding truth include: How do we define truth? Is it even possible to give an informative definition of truth? What things are truth-bearers and are therefore capable of being true or false? Are truth and falsity bivalent, or are there other truth values? What are the criteria of truth that allow us to identify it and to distinguish it from falsity? What role does truth play in constituting knowledge? And is truth absolute, or is it merely relative to one's perspective?

2.3.3 Justification

As the term "justification" is used in epistemology, a belief is justified if one has good reason for holding it. Loosely speaking, justification is the *reason* for which someone holds a rationally admissible belief, on the assumption that it is a *good reason* for holding it. Sources of justification might include perceptual experience (the evidence of the senses), reason, and authoritative testimony, among others. Importantly however, a belief being justified does *not* guarantee that the belief is true, since a person could be justified in forming beliefs based on very convincing evidence that was nonetheless deceiving.

In Plato's *Theaetetus*, Socrates considers a number of theories as to what knowledge is, first excluding merely true belief as an adequate account. For example, an ill person with no medical training, but with a generally optimistic attitude, might believe that he will recover from his illness quickly. Nevertheless, even if this belief turned out to be true, the patient would not have *known* that he would get well since his belief lacked justification. The last account that Plato considers is that knowledge is true belief with an account[24] that explains or defines it in some way. According to Edmund Gettier, the view that Plato is describing here is that knowledge is *justified true belief*. The truth of this view would entail that in order to know that a given proposition is true, one must not only believe the relevant true proposition, but must also have a good reason for doing so.[25] One implication of this would be that no one would gain knowledge just by believing something that happened to be true.[26]

[24] Ibid.
[25] Edmund L. Gettier, "Is Justified True Belief Knowledge?"
[26] Ibid.

CHAPTER THREE

THEORIES OF TRUTH

In this chapter, I shall briefly sketch three classical and other major kinds of theories of truth which have been proposed, and attempt to indicate how they relate to each other.

3.1 Coherence Theories of Truth

Coherence theories take truth to consist in relations of coherence among a set of beliefs. Simply put, coherence theory of truth holds that truth consists in coherence; the test of the truth of all statements derives from their relations with other statements. The test for truth consists of relations among beliefs themselves. Our search for knowledge thus requires a consistence readjustment of beliefs, the aim of which is to achieve coherence. For instance, if in a certain village inter-family marriage is not permitted, then it is not plausible to believe that A is the husband of B when it has been established that A and B are siblings. Also, such statements as "twice two is half of eight" or "what is known cannot be unknown" are true in virtue of the meanings of the words that express them. It is because the meanings of the words are internally related as they are (i.e. coherence) that these statements are true. According to the coherence theory of justification, also known as coherentism, a belief is justified, or justifiably held, only if it coheres with a set of beliefs already known to be true and justified. However, there is a refutation on this theory, which posits that, to insist that a judgment is true because of its coherence and consistency with a reality that is accepted as true, could lead to a dangerous circularity. An example is, when there are false statements, each claiming to be true for reasons of coherence. In this way, the theory does not distinguish between a coherent or consistent truth and a consistent error.

3.2 Correspondence Theories of Truth

Correspondence theories take the truth of a proposition to consist, not in its relation to other propositions, but in its relation to the world, its correspondence to reality or to the facts. During their "logical atomist" periods, both Russell and Wittgenstein offered definitions of truth as the correspondence of a proposition to facts. The question however is, how do we tell whether or not a sentence corresponds to the fact? To tackle the problem Carnap argues that statements reporting immediate perceptual experience are incorrigible, that is to say, we can directly verify that they correspond to the facts. For instance, the statement that, it is raining, can only be true if it can be verified that it is actually raining. If this is done, then one can say that the statement corresponds to the fact, and as such, the statement is true. In other words, the correspondence theory of truth states that the truth or falsity of a statement is determined only by how it relates to the world and whether it accurately describes (i.e., corresponds with) that world. There is a loophole in this theory. As we have seen above, the theory compares ideas with reality. But, can ideas be compared with reality? Since we know only our own experience, how can we get outside our ideas to get to reality as it is in itself?

3.3 The Pragmatist Theory of Truth

The pragmatist theory developed in the works of Peirce, Dewey, and James has affinities with both coherence and correspondence theories, allowing that the truth of a belief derives from its correspondence with reality, but stressing also that it is manifested by the belief's survival of test by experience, and its coherence with other beliefs. Only a truth of this kind is workable. According to the pragmatic maxim, the meaning of a concept is to be given by reference to the practical or experimental consequences of its application. As James puts it,[27] there can be no difference that makes no difference. Hence, the pragmatic approach to truth is to ask what difference it makes whether a belief is true. For instance, would it make any difference to believe that God exists? Would the application of such a belief work out for the good of the society? If the answer is yes, then the statement that God exists is true, otherwise it is false. The problem associated with this theory is that it has some relativist tendencies.

3.4 Semantic Theory of Truth

Aristotle has observed that "to say of what is that it is not, or of what is not that it is, is false, while to say of what is that it is, or of what is not that it is not, is true."[28] In proposing his semantic theory of truth, Tarski aims to explicate the sense of "true" which the above dictum captures. Truth, in Tarski's account, is defined in terms of the semantic relation of satisfaction, a relation between open sentences (e.g. x is greater than y) and non-linguistic objects (e.g. the numbers 6 and 5).

3.5 Saul Kripke's Theory of Truth

The truth theory recently proposed by Kripke (1975) is a variant of Tarski's account, modified essentially to cope in a more sophisticated way with semantic paradoxes. His theory builds on valued interpretation of language. For instance, he avers that sentences many be neither true nor false (N) as well as true (T) or false (F).[29] It is a formal theory of truth, believed to be alternative to Tarski's 'orthodox' theory, based on truth-value gaps. The theory is proposed as a fairly plausible model for natural language and as one which allows rigorous definitions to be given for various intuitive concepts, such as semantic paradoxes. A semantic paradox is a seemingly contradictory or absurd statement that expresses a possible truth; it can also mean a self-contradictory and false proposition. The liar paradox is one of the simplest yet most famous example of paradoxes out there. The statement "this statement is a lie" or "this statement is false" is a paradox because if that statement is indeed a lie, then it would be saying a truth.

3.6 Karl Popper's Theory of Truth

Popper's account of truth and his theory of verisimilitude or nearness to the truth is also based upon Tarski's theory, which Popper regards as supplying a more precise version of traditional

[27] Tarski, Alfred. "The Semantic Conception of Truth and the Foundations of Semantics." In *Philosophy and Phenomenological Research*, 4, 1944.
[28] Ibid.
[29] Kripke, Saul. Outline of a Theory of Truth. *Journal of Philosophy*, 72(1), 1975,690-716.

correspondence theories. Popper is one of the most prominent philosophers of science. But his *falsificationist* proposal differs from the *verifiability* criterion in some important ways.[30] First, Popper does not hold that non-scientific claims are meaningless. Instead, he argues that such a unfalsifiable claims can often serve important roles in both scientific and philosophical contexts, even if we are incapable of asserting their truth or falsity. Second, while Popper is a realist who holds that scientific theories aim at the truth, he does not think that empirical evidence can ever provide us grounds for believing that a theory is either true or likely to be true.[31] In this sense, Popper is a *fallibilist* who holds that while the particular unfalsified theory we have adopted might be true, we could never know this to be the case. For this same reason, Popper holds that it is impossible to provide justification for one's belief that a particular scientific theory is true. Finally, where others see science progressing by confirming the truth of various particular claims, Popper describes science as progressing on an evolutionary model, with observations selecting against unfit theories by falsifying them.

In philosophy, **verisimilitude** (or truthlikeness) is the notion that some propositions are closer to being true than other propositions. The problem of verisimilitude is the problem of articulating what it takes for one false theory to be closer to the truth than another false theory.[32] This problem was central to the philosophy of Karl Popper, largely because Popper was among the first to affirm that truth is the aim of scientific inquiry while acknowledging that most of the greatest scientific theories in the history of science are, strictly speaking, false.[33] If this long string of purportedly false theories is to constitute progress with respect to the goal of truth, then it must be at least possible for one false theory to be closer to the truth than others.

3.7 The Redundancy Theory of Truth

The redundancy theory of truth, offered by Ramsey (1927) claims that "true" is redundant, for to say that it is true that *p* is equivalent to saying that *p*. Evidently, this account has some affinities with Aristotle's dictum, and consequently with some aspects of Tarski's theory. According to this theory, asserting that a statement is true is completely equivalent to asserting the statement itself. For example, asserting the sentence "*snow is white* is true" is the same as asserting the sentence "snow is white." Frege expressed the idea this way:

> It is worthy of notice that the sentence "I smell the scent of violets" has the same content as the sentence "It is true that I smell the scent of violets." So it seems, then, that nothing

[30]H.C. Ezebuilo, "Popper's Piecemeal Engineering and Social Reform in Africa." Unpublished *Thesis Submitted to Nnamdi Azikiwe University Awka, 2017.*

[31] Ibid.

[32] "Truthlikeness," *Stanford Encyclopedia of Philosophy*. Retrieved October 22, 2022.

[33] Pavel Tichy. On Poper's Definitions of Verisimilitude. *The British Journal for the Philosophy of Science*. (Oxford University Press, 1974), 25(2):155-160.

> is added to the thought by my ascribing to it the property of truth.[34]

When we assert a proposition explicitly, such as when we say "I smell the scent of violets," then saying "It is true that I smell the scent of violets" would be redundant; it would add nothing because the two have the same meaning. In other words, the two are necessarily equivalent.

3.8 Performative Theory of Truth

Peter Strawson formulated a performative theory of truth in the 1950s. Like Ramsey, Strawson believed that there is no separate problem of truth apart from determining the semantic contents (or facts of the world) which gives the words and sentences of language the meanings that they have.[35] The performative theory of truth argues that ascribing truth to a proposition is not really characterizing the proposition itself, nor is it saying something redundant. Rather, it is telling us something about the speaker's intentions. Through the speaker's praising, accepting, conceding, agreeing with, or endorsing of the proposition, he or she is guaranteeing our adoption (our belief in) the proposition. Instead of saying, "It is true snow is white," one could substitute, "I embrace the claim that snow is white." The key idea is that saying of some proposition, P, that it is true is to say in a disguised fashion, "I commend P to you," or "I endorse P," or something of the sort. In this case, you are performing the action of giving your listener license or guarantee to belief the proposition (and to act upon the belief).

3.9 Prosentential Theory of Truth

The prosentential theory of truth suggests that the grammatical predicate "is true" does not function semantically or logically as predicate. All uses of "is true" are pro-sentential uses. When someone asserts "it is true that it is raining," the person is asking the hearer to consider the sentence "it is raining" and is saying that "that, is true" where the remark "that, is true" is taken holistically as a prosentence, in analogy to a pronoun. A pronoun such as "she" is a substitute for the name of the person being referred to. Similarly, "that is true" is a substitute for the proposition being considered. Likewise, for the expression "it is true." According to the pro-sentential theory, all uses of "true" can be reduced to uses either of "that is true" or "it is true" or variants of these with other tenses.[36]

3.10 From Truth to Knowledge

For generations, discussions of truth have been bedeviled by the question, "how could a proposition be true unless we know it to be true?" Aristotle's famous worry was that contingent propositions about the future, such as "there will be a sea battle tomorrow," couldn't be true now, for fear that this would deny free will to the sailors involved. Advocates of the Correspondence Theory and the Semantic Theory have argued that a proposition need not be

[34] Bradley, Raymond and Norman Swartz. *Possible World: an Introduction to Logic and Its Philosophy*. London: Hacket Publishing Company, 1979.
[35] Ibid.
[36] Davidson, Donald. *Inquiries into Truth and Interpretation*. Oxford: Oxford University Press, 1984.

known in order to be true. Truth, they say, arises out of a relationship between a proposition and the way the world is. No one need know that that relationship holds, nor – for that matter – need there even be any conscious or language-using creature for that relationship to obtain. In short, truth is an objective feature of a proposition, not a subjective one. For a true proposition to be known, it must (at least) be a justified belief.

CHAPTER FOUR

IS JUSTIFIED TRUE BELIEF KNOWLEDGE

4.1 The Gettier Problem

Edmund Gettier's famous 1963 paper, "Is Justified True Belief Knowledge?", popularized the claim that the definition of knowledge as justified true belief had been widely accepted throughout the history of philosophy.[37] The extent to which this is true is highly contentious, since Plato himself disavowed the "justified true belief" view at the end of the *Theaetetus*.[38] Regardless of the accuracy of the claim, Gettier's paper produced major widespread discussion which completely reoriented epistemology in the second half of the 20th century, with a newfound focus on trying to provide an airtight definition of knowledge by adjusting or replacing the "justified true belief" view.

If someone (S) knows some fact (p), several conditions must obtain. A proposition that S does not even believe cannot be a fact that S knows. Therefore, knowledge requires belief. False propositions cannot be facts, and so cannot be known. Therefore, knowledge requires truth. Finally, S's being correct in believing that p, might merely be a luck or matter of fact. For instance, if you believe that your mother who is in a different location from you, is sick, and you have no reason for believing this except on the ground that the thought keep flashing in your mind. If it turns out that you are right, and your mother is truly ill, your being right about this is merely accidental. It is a matter of chance or luck (bad luck, in this case).[39] Therefore, knowledge requires a third component, one that excludes the aforementioned chance. This third condition is called justification.

Now, if we take these three conditions of knowledge to be not merely necessary but also sufficient, the, then: S knows that p if and only if p is true and S justifiably believes that p. According to this account, the three conditions, namely truth, belief, and justification, are individually necessary and collectively sufficient for knowledge of facts.[40]

Recall that the justification condition is introduced to ensure that S's belief is not true merely because of luck. But what must justification be, if it can ensure that? It may be thought that S's belief that p is true not merely because of luck when it is reasonable or rational, from S's own point of view, to take p to be true. Or, it may be thought that S's belief is true not merely because of luck if that belief has a high objective probability of truth, i.e. if it is formed or sustained by

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[37] D.M. Armstrong, Belief, Truth, and Knowledge (Cambridge: Cambridge University Press), 152.

[38] Alvin Goldman, "Reliabilism: What Is Justified Belief?". In Pappas, G.S. (ed.). *Justification and Knowledge* (Dordrecht, Holland: Reidel, 1979), 11.

[39] For an argument that true belief alone suffices for knowledge, see C. Sartwell, "Why Knowledge Is Merely True Belief", *The Journal of Philosophy*, 89(4), (1992), 167–168.

[40] M. Steup, *An Introduction to Contemporary Epistemology* (Upper Saddle River, NJ: Prentice Hall, 1996), 112.

reliable cognitive processes of faculties. But on the contrary, if justification is understood in either of three ways, it cannot ensure against luck.

This was precisely what Edmund Gettier demonstrated in showing that there are cases of JTB that are not cases of knowledge. It follows, therefore, that JTB is not sufficient for knowledge. Cases like that, known as Gettier's cases arise because neither the possession of adequate evidence, nor origination in reliable faculties, nor the conjunction of these conditions, is sufficient for ensuring that a belief is not true merely because of luck. Goldman presents a well known case:

Henry drives through a rural area in which what appear to be barns are mere barn façades (imagery), with the exception of just one. From the road he is driving on, these barns look exactly like real barns. But Henry happens to be looking at only one barn, and that is the only real barn there. Looking at this barn, he believes that there is a barn over there. Now, Henry's belief is true, and his visual experience makes it reasonable for him to hold that belief. Furthermore, his belief originates in a reliable cognitive process, namely normal vision of ordinary, recognizable objects in good lighting. Notwithstanding all these, Henry's belief is true in this case merely because of luck. If he had noticed one of the barn-facades instead, his belief may have been false. There is, therefore, broad agreement among epistemologists that Henry's belief does not qualify for knowledge.[41]

If JTB is, thus, not sufficient for knowledge, what further condition must be added to it? This is known as the Gettier problem. Some philosophers attempt to solve the Gettier problem by adding a fourth condition to the three conditions mentioned above, while others attempt to solve it by either replacing or refining the three justification conditions, and refining it depends, of course, on how we understand the justification condition itself. Some philosophers reject the Gettier problem altogether. They reject the aspiration to understand knowledge by trying to add something else to JTB. Some of these philosophers try to explain knowledge in terms of virtue. They say that to know a fact is for the truth of one's belief to manifest epistemic virtue.[42] Some of them also try to explain knowledge by identifying it as a genus of many familiar species. They say that knowledge is the most general factive mental state operator.[43] Still other such philosophers try to explain knowledge by explaining its distinctive role in some other activity. Accordingly, to know a fact is for that fact to be a reason for which one can do or think something.[44] In the view of others, to know a fact is to be entitled to assert that fact.[45] Still,

[41] A.I. Goldman, "Discrimination and Perceptual Knowledge", *The Journal of Philosophy*, 73(20), (1976), 773–791.
[42] L.T. Zagzebski, *Virtues of the Mind: An Inquiry into the Nature of Virtue and the Ethical Foundations of Knowledge* (Cambridge: Cambridge University Press, 1996), 11;L.T. Zagzebski, "Reflective Knowledge in the Best Circles", *The Journal of Philosophy*, 94(8), (1997), 411.
[43] T. Williamson, *Knowledge and Its Limits* (Oxford: Oxford University Press, 2002), 11.
[44] J. Hyman, "How Knowledge Works", *The Philosophical Quarterly*, 49(197), (1999), 433.
[45] T. Williamson, *Knowledge and Its Limits*, 12.

according to others, to know a fact is to a trustworthy informant concerning whether than fact obtains.

Finally, there are those who think that the question "what is it to know a fact?" is misconceived. For them, the verb "to know" does not do the work of denoting anything, but does a different kind of work altogether, for instance, the work of assuring one's listeners concerning some fact or other, or the work of indicating to one's audience that a particular person is a trustworthy informant concerning some matter.[46]

To summarize, Edmund Gettier called into question the common conception of knowledge as justified true belief. In just two and a half pages, Gettier argued that there are situations in which one's belief may be justified and true, yet fail to count as knowledge. That is, Gettier contended that while justified belief in a true proposition is necessary for that proposition to be known, it is not sufficient.

According to Gettier, there are certain circumstances in which one does not have knowledge, even when all of the above conditions are met. Gettier proposed two thought experiments, which have become known as *Gettier cases*, as counterexamples to the classical account of knowledge.[47] One of the cases involves two men, Smith and Jones, who are awaiting the results of their applications for the same job. Each man has ten coins in his pocket. Smith has excellent reasons to believe that Jones will get the job (the head of the company told him); and furthermore, Smith knows that Jones has ten coins in his pocket (he recently counted them). From this Smith infers: "The man who will get the job has ten coins in his pocket." However, Smith is unaware that he *also* has ten coins in his own pocket. Furthermore, it turns out that Smith, not Jones, is going to get the job. While Smith has strong evidence to believe that Jones will get the job, he is wrong. Smith therefore has a justified true belief that the man who will get the job has ten coins in his pocket; however, according to Gettier, Smith does not *know* that the man who will get the job has ten coins in his pocket, because Smith's belief is "...true by virtue of the number of coins in *Jones's* pocket, while Smith does not know how many coins are in Smith's pocket, and bases his belief... on a count of the coins in Jones's pocket, whom he falsely believes to be the man who will get the job."[48] These cases fail to be knowledge because the subject's belief is justified, but only happens to be true by virtue of luck. In other words, he made the correct choice (believing that the man who will get the job has ten coins in his pocket) for the wrong reasons. Gettier then goes on to offer a second similar case, providing the means by which the specifics of his examples can be generalized into a broader problem for defining knowledge in terms of justified true belief.

[46] E. Craig, *Knowledge and the State of Nature*,66.
[47] Alvin Goldman, "Reliabilism: What Is Justified Belief?", 11.
[48]"Certainty," *Stanford Encyclopedia of Philosophy*. Retrieved 28 October, 2021.

4.2 Responses to Gettier's Problem

There have been various notable responses to the Gettier problem. Typically, they have involved substantial attempts to provide a new definition of knowledge that is not susceptible to Gettier-style objections, either by providing an additional fourth condition that justified true beliefs must meet to constitute knowledge, or proposing a completely new set of necessary and sufficient conditions for knowledge. While there have been far too many published responses for all of them to be mentioned, some of the most notable responses are discussed below.

4.2.1 No False Premises Response

One of the earliest suggested replies to Gettier, and perhaps the most intuitive ways to respond to the Gettier problem, is the "no false premises" response, sometimes also called the "no false lemmas" response. Most notably, this reply was defended by David Malet Armstrong in his 1973 book, *Belief, Truth, and Knowledge*.[49] The basic form of the response is to assert that the person who holds the justified true belief (for instance, Smith in Gettier's first case) made the mistake of inferring a true belief (e.g. The person who will get the job has ten coins in his pocket) from a false belief (e.g. Jones will get the job). Proponents of this response therefore propose that we add a fourth necessary and sufficient condition for knowledge, namely, the justified true belief must not have been inferred from a false belief.

This reply to the Gettier problem is simple, direct, and appears to isolate what goes wrong in forming the relevant beliefs in Gettier cases. However, the general consensus is that it fails.[50] This is because while the original formulation by Gettier includes a person who infers a true belief from a false belief, there are many alternate formulations in which this is not the case. Take, for instance, a case where an observer sees what appears to be a dog walking through a park and forms the belief: "There is a dog in the park". In fact, it turns out that the observer is not looking at a dog at all, but rather a very lifelike robotic facsimile of a dog. However, unknown to the observer, there *is* in fact a dog in the park, albeit one standing behind the robotic facsimile of a dog. Since the belief "There is a dog in the park" does not involve a faulty inference, but is instead formed as the result of misleading perceptual information, there is no inference made from a false premise. It therefore seems that while the observer does in fact have a true belief that her perceptual experience provides justification for holding, she does not actually *know* that there is a dog in the park. Instead, she just seems to have formed a lucky justified true belief.[51]

4.2.2 Reliabilist Response

Reliabilism has been a significant line of response to the Gettier problem among philosophers, originating with work by Alvin Goldman in the 1960s. According to reliabilism, a belief is

[49]Bimal Krishna Matilal, *Perception: An essay on Classical Indian Theories of Knowledge* (Oxford: India, 2002). The Gettier problem is dealt with in Chapter 4, Knowledge as a mental episode. The thread continues in the next chapter Knowing that one knows.

[50] Alvin Goldman, "Reliabilism: What Is Justified Belief?"

[51] Ibid.

justified (or otherwise supported in such a way as to count towards knowledge) only if it is produced by processes that typically yield a sufficiently high ratio of true to false beliefs. In other words, this theory states that a true belief counts as knowledge only if it is produced by a reliable belief-forming process. Examples of reliable processes include standard perceptual processes, remembering, good reasoning, and introspection.[52]

One commonly discussed challenge for reliabilism is the case of Henry and the barn façades.[53] In this thought experiment, a man, Henry, is driving along and sees a number of buildings that resemble barns. Based on his perception of one of these, he concludes that he is looking at a barn. While he is indeed looking at a barn, it turns out that all of the other barn-like buildings he saw were façades. According to the challenge, Henry does not *know* that he has seen a barn, despite his belief being true, and despite his belief having been formed on the basis of a reliable process (i.e. his vision), since he only acquired his reliably formed true belief by accident.[54] In other words, since he could have just as easily been looking at a barn façade and formed a false belief, the reliability of perception in general does not mean that his belief was not merely formed luckily, and this luck seems to preclude him from knowledge.

4.2.3 Infallibilist Response

One less common response to the Gettier problem is defended by Richard Kirkham, who has argued that the only definition of knowledge that could ever be immune to all counterexamples is the infallibilist definition.[55] To qualify as an item of knowledge, goes the theory, a belief must not only be true and justified, the justification of the belief must *necessitate* its truth. In other words, the justification for the belief must be infallible.

While infallibilism is indeed an internally coherent response to the Gettier problem, it is incompatible with our everyday knowledge ascriptions. For instance, as the Cartesian skeptic will point out, all of my perceptual experiences are compatible with a skeptical scenario in which I am completely deceived about the existence of the external world, in which case most (if not all) of my beliefs would be false.[56] The typical conclusion to draw from this is that it is possible to doubt most (if not all) of my everyday beliefs, meaning that if I am indeed justified in holding those beliefs, that justification is *not* infallible. For the justification to be infallible, my reasons for holding my everyday beliefs would need to completely exclude the possibility that those beliefs were false. Consequently, if a belief must be infallibly justified in order to constitute knowledge, then it must be the case that we are mistaken in most (if not all) instances in which we claim to have knowledge in everyday situations.[57] While it is indeed possible to bite the bullet and accept this conclusion, most philosophers find it implausible to suggest that we

[52]Robert Nozick, *Philosophical Explanations* (Harvard University Press, 1981), 172.
[53] Alvin Goldman, "Reliabilism: What Is Justified Belief?"
[54]D.M. Armstrong, *Belief, Truth and Knowledge* (Cambridge University Press, 1973).
[55] Simon Blackburn, *Think: A Compelling Introduction to Philosophy* (Oxford University Press), 43.
[56] Cf. Jennifer Nagel, "Knowledge as a Mental State", *Oxford Studies in Epistemology* Volume 4, (Oxford: Oxford University Press, 2013), 274,
[57] Anthony Brueckner, "Williamson on the primeness of knowing". *Analysis*. 62(275), (2002),197.

know nothing or almost nothing, and therefore reject the infallibilist response as collapsing into radical skepticism.[58]

4.2.4 Indefeasibility Condition

Another possible candidate for the fourth condition of knowledge is *indefeasibility*. Defeasibility theory maintains that there should be no overriding or defeating truths for the reasons that justify one's belief. For example, suppose that person *S* believes he saw Tom steal a book from the library and uses this to justify the claim that Tom stole a book from the library. A possible defeater or overriding proposition for such a claim could be a true proposition like, "Tom's identical twin Sam is currently in the same town as Tom." When no defeaters of one's justification exist, a subject would be epistemologically justified.

In a similar vein, the Indian philosopher B.K. Matilal drew on the Navya-Nyāya fallibilist tradition to respond to the Gettier problem. Nyaya theory distinguishes between *know p* and *know that one knows p*—these are different events, with different causal conditions. The second level is a sort of implicit inference that usually follows immediately the episode of knowing p (knowledge *simpliciter*). The Gettier case is examined by referring to a view of Gangesha Upadhyaya (late 12th century), who takes any true belief to be knowledge; thus a true belief acquired through a wrong route may just be regarded as knowledge simpliciter on this view. The question of justification arises only at the second level, when one considers the knowledge-hood of the acquired belief. Initially, there is lack of uncertainty, so it becomes a true belief. But at the very next moment, when the hearer is about to embark upon the venture of *knowing whether he knows p*, doubts may arise. "If, in some Gettier-like cases, I am wrong in my inference about the knowledge-hood of the given occurrent belief (for the evidence may be pseudo-evidence), then I am mistaken about the truth of my belief—and this is in accordance with Nyaya fallibilism: not all knowledge-claims can be sustained."[59]

4.2.5 Tracking Condition

Robert Nozick has offered a definition of knowledge according to which *S* knows that *P* if and only if:

- *P* is true;
- *S* believes that *P*;
- if *P* were false, *S* would not believe that *P*;
- if *P* were true, *S* would believe that *P*.[60]

Nozick argues that the third of these conditions serves to address cases of the sort described by Gettier. He further claims this condition addresses a case of the sort described by D.M.

[58] Cf. Jennifer Nagel, "Knowledge as a Mental State", 293.
[59] Hilary Kornblith, *Knowledge and its Place in Nature* (Oxford: Oxford University Press, 2002).
[60] Robert Nozick, *Philosophical Explanations*, 177.

Armstrong:[61] A father believes his daughter is innocent of committing a particular crime, both because of faith in his baby girl and (now) because he has seen presented in the courtroom a conclusive demonstration of his daughter's innocence. His belief via the method of the courtroom satisfies the four subjunctive conditions, but his faith-based belief does not. If his daughter were guilty, he would still believe her innocence, on the basis of faith in his daughter; this would violate the third condition.

The British philosopher Simon Blackburn has criticized this formulation by suggesting that we do not want to accept as knowledge beliefs which, while they track the truth (as Nozick's account requires), are not held for appropriate reasons. He says that "we do not want to award the title of knowing something to someone who is only meeting the conditions through a defect, flaw, or failure, compared with someone else who is not meeting the conditions."[62] In addition to this, externalist accounts of knowledge, such as Nozick's, are often forced to reject closure in cases where it is intuitively valid.

An account similar to Nozick's has also been offered by Fred Dretske, although his view focuses more on relevant alternatives that might have obtained if things had turned out differently. Views of both the Nozick variety and the Dretske variety have faced serious problems suggested by Saul Kripke.[63]

4.2.6 Knowledge-First Response

Timothy Williamson has advanced a theory of knowledge according to which knowledge is not justified true belief plus some extra conditions, but primary. In his book *Knowledge and its Limits*, Williamson argues that the concept of knowledge cannot be broken down into a set of other concepts through analysis—instead, it is *sui generis*. Thus, according to Williamson, justification, truth, and belief are necessary but not sufficient for knowledge. Williamson is also known for being one of the only philosophers who take knowledge to be a mental state;[64] most epistemologists assert that belief (as opposed to knowledge) is a mental state. As such, Williamson's claim has been seen to be highly counterintuitive.

Today there is still little consensus about whether any set of conditions succeeds in providing a set of necessary and sufficient conditions for knowledge, and many contemporary epistemologists have come to the conclusion that no such exception-free definition is possible.[65] However, even if justification fails as a condition for knowledge as some philosophers claim, the question of whether or not a person has good reasons for holding a particular belief in a particular set of circumstances remains a topic of interest to contemporary epistemology and is unavoidably linked to questions about rationality.

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[61] Duncan Pritchard, John Turri, *Stanford Encyclopedia of Philosophy*. Retrieved 28 October, 2021.
[62] Duncan Pritchard, "Recent Work on Epistemic Value," *American Philosophical Quarterly*, 44 (2), (2007), 85–110.
[63] Cf. Alvin Goldman, "Reliabilism: What Is Justified Belief?"
[64] Cf. Jonathan L. Kvanvig, *The Value of Knowledge and the Pursuit of Understanding* (Cambridge University Press, 2003).
[65] Ibid.

CHAPTER FIVE

THE NATURE OF JUSTIFICATION

5.1 Internalism and Externalism

A central debate about the nature of justification is a debate between epistemological externalists on the one hand and epistemological internalists on the other. While epistemic externalism first arose in attempts to overcome the Gettier problem, it has flourished in the time since as an alternative way of conceiving of epistemic justification. The initial development of epistemic externalism is often attributed to Alvin Goldman, although numerous other philosophers have worked on the topic in the time since.[66]

Externalists hold that factors deemed external meaning outside of the psychological states of those who gain knowledge, can be conditions of justification. For example, an externalist response to the Gettier problem is to say that for a justified true belief to count as knowledge, there must be a link or dependency between the belief and the state of the external world. Usually, this is understood to be a causal link. Such causation, to the extent that it is outside the mind, would count as an external, knowledge-yielding condition. Internalists, on the other hand, assert that all knowledge-yielding conditions are within the psychological states of those who gain knowledge.

Though unfamiliar with the internalist/externalist debate himself, many point to René Descartes as an early example of the internalist path to justification. He wrote that because the only method by which we perceive the external world is through our senses, and that, because the senses are not infallible, we should not consider our concept of knowledge infallible. The only way to find anything that could be described as "indubitably true", he advocates, would be to see things "clearly and distinctly."[67] He argued that if there is an omnipotent, good being who made the world, then it's reasonable to believe that people are made with the ability to know. However, this does not mean that man's ability to know is perfect. God gave man the ability to know but not with omniscience. Descartes said that man must use his capacities for knowledge correctly and carefully through methodological doubt.[68]

The dictum "Cogito ergo sum" (I think, therefore I am) is also commonly associated with Descartes' theory. In his own methodological doubt—doubting everything he previously knew so he could start from a blank slate—the first thing that he could not logically bring himself to doubt was his own existence: "I do not exist" would be a contradiction in terms. The act of saying that one does not exist assumes that someone must be making the statement in the first place. Descartes could doubt his senses, his body, and the world around him—but he could not deny his own existence, because he was able to doubt and must exist to manifest that doubt. Even if some "evil genius" were deceiving him, he would have to exist to be deceived. This one

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[66] Ibid.

[67] Alan H. Goldman, "Appearing as Irreducible in Perception." *Philosophy and Phenomenological Research*, 37(2), 147.

[68] Richard L. Kirkham, *Mind*, 93 (372), (1984), 503.

sure point provided him with what he called his Archimedean point, in order to further develop his foundation for knowledge. Simply put, Descartes' epistemological justification depended on his indubitable belief in his own existence and his clear and distinct knowledge of God.[69]

5.2 Causal theory and naturalized epistemology

In an earlier paper that predates his development of reliabilism, Alvin Goldman writes in his "Causal Theory of Knowing" that knowledge requires a causal link between the truth of a proposition and the belief in that proposition.[70] A similar view has also been defended by Hilary Kornblith in *Knowledge and its Place in Nature*, although his view is meant to capture an empirical scientific conception of knowledge, not an analysis of the everyday concept "knowledge."[71] Kornblith, in turn, takes himself to be elaborating on the naturalized epistemology framework first suggested by W.V.O. Quine.

5.3 The Value Problem (Knowledge v Belief)

We generally assume that knowledge is more valuable than mere true belief. If so, what is the explanation? A formulation of the value problem in epistemology first occurs in Plato's *Meno*. Socrates points out to Meno that a man who knew the way to Larissa could lead others there correctly. But so, too, could a man who had true beliefs about how to get there, even if he had not gone there or had any knowledge of Larissa. Socrates says that it seems that both knowledge and true opinion can guide action. Meno then wonders why knowledge is valued more than true belief and why knowledge and true belief are different. Socrates responds that knowledge is more valuable than mere true belief because it is tethered or justified. Justification, or working out the reason for a true belief, locks down true belief.[72]

The problem is to identify what (if anything) makes knowledge more valuable than mere true belief, or that makes knowledge more valuable than a mere minimal conjunction of its components, such as justification, safety, sensitivity, statistical likelihood, and anti-Gettier conditions, on a particular analysis of knowledge that conceives of knowledge as divided into components (to which knowledge-first epistemological theories, which posit knowledge as fundamental, are notable exceptions).[73] The value problem re-emerged in the philosophical literature on epistemology in the twenty-first century following the rise of virtue epistemology in the 1980s, partly because of the obvious link to the concept of value in ethics.[74]

5.4 Virtue Epistemology: A Solution to the Value Problem

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[69]"Epistemic Contextualism," *Stanford Encyclopedia of Philosophy*. Retrieved 20 October 2021.

[70] Alvin I. Goldman & E.J. Olsson, E.J. "Reliabilism and the Value of Knowledge." In Haddock, A., Millar, A. & Pritchard, D. (eds.). E*pistemic Valu*e (Oxford University Press, 2009), 24.

[71] Ibid.

[72] Jonathan Kvanvig, *The Value of Knowledge and the Pursuit of Understanding* (Cambridge; New York: Cambridge University Press, 2003), 5.

[73] Ibid.

[74] See Laurence Bonjour, *The Structure of Empirical Knowledge*, (Cambridge, MA: Harvard University Press, 1985).

In contemporary philosophy, epistemologists have defended virtue epistemology as a solution to the value problem. They argue that epistemology should also evaluate the "properties" of people as epistemic agents (i.e. intellectual virtues), rather than merely the properties of propositions and propositional mental attitudes.

The value problem has been presented as an argument against epistemic reliabilism. Zagzebski, for instance, analogizes the value of knowledge to the value of espresso produced by an espresso maker: "The liquid in this cup is not improved by the fact that it comes from a reliable espresso maker. If the espresso tastes good, it makes no difference if it comes from an unreliable machine."[75] For Zagzebski, the value of knowledge deflates to the value of mere true belief. She assumes that reliability in itself has no value or disvalue, but Goldman and Olsson disagree. They point out that Zagzebski's conclusion rests on the assumption of veritism: all that matters is the acquisition of true belief.[76] To the contrary, they argue that a reliable process for acquiring a true belief adds value to the mere true belief by making it more likely that future beliefs of a similar kind will be true. By analogy, having a reliable espresso maker that produced a good cup of espresso would be more valuable than having an unreliable one that luckily produced a good cup because the reliable one would more likely produce good future cups compared to the unreliable one.

The value problem is important to assessing the adequacy of theories of knowledge that conceive of knowledge as consisting of true belief and other components. According to Kvanvig, an adequate account of knowledge should resist counterexamples and allow an explanation of the value of knowledge over mere true belief. Should a theory of knowledge fail to do so, it would prove inadequate.[77]

One of the more influential responses to the problem is that knowledge is not particularly valuable and is not what ought to be the main focus of epistemology. Instead, epistemologists ought to focus on other mental states, such as understanding.[78] Advocates of virtue epistemology have argued that the value of knowledge comes from an internal relationship between the knower and the mental state of believing.[79]

5.5 Cognitive Success vis a vis Epistemic Harms

The question, therefore, arises, what makes it the case that something counts as a form of cognitive success? For instance, why think that knowing the school vice chancellor is a cognitive success, rather than any other cognitive state? Not ever cognitive state enjoys cognitive success. Knowing, understanding, mastering, etc, are all cognitive successes. But confidence in a

[75]"The Analytic/Synthetic Distinction," *Stanford Encyclopedia of Philosophy*, Retrieved October 29, 2021.
[76] Cf. G. Russell, *Truth in Virtue of Meaning: A Defence of the Analytic/Synthetic Distinction* (Oxford: Oxford University Press, 2008).
[77] Jonathan L. Kvanvig, *The Value of Knowledge and the Pursuit of Understanding*.
[78] Edward N. Zalta (ed.). "Foundational Theories of Epistemic Justification," *Stanford Encyclopedia of Philosophy*. Accessed October, 29, 2021.
[79] Jonathan L. Kvanvig, *The Value of Knowledge and the Pursuit of Understanding*.

proposition, for instance, is not a cognitive success in and of itself. Inasmuch as an agent can hold confidence in the right circumstances and for the right reasons (in which case, it is partly constitutive of an agent's cognitive success), it is also possible that then agent can hold confidence in the wrong circumstance and for the wrong reasons. One can even be confident that what is not, is. What makes the difference?

The idea of cognitive success can be explained in three ways, namely contractualism, consequentialism, or constitutivism. The contractualists say that a particular cognitive state counts as a kind of success because counting it as such severs certain widely held practical interest. For instance, we describe a person as 'knowing' something as a way of showing that his testimony with respect to that thing is to be trusted.[80] The consequentialist says that a particular cognitive state counts as a success because it tends to constitute or to promote some important benefit. According to some consequentialists, the benefit in question is that of having true beliefs and lacking false beliefs.[81] According to others, it is the benefit of having a comprehensive understanding of reality. For others still, it is a benefit that I not narrowly epistemic, like living a good life. Lastly, the constitutivists would say that a particular cognitive state counts as a success if it is the constitutive aim of some feature of our lives to achieve that aim.[82] For instance, the constitutivist might say that knowledge is a kind of cognitive success by virtue of being the constitutive aim of all human activity.

The above three answers will depict three different kinds of cognitive success. Each of the answer is correct for a particular kind of success. Consider, for example, the difference between the kind of success involved in having a state that is fitting (like holding a belief knowledgeable), and the kind of success involved in having a state that is valuable (like holding a belief the holding of which is beneficial). An example of the former would be: the capital of Nigeria is Abuja, while that of the later would be: God exists. Perhaps the constitutivist can explain the former kind of success better than the consequentialist can, but the consequentialist can explain the latter kind of success better than the constitutivist can. Of course, if and when the demands of these different kinds of success conflict, the agent will face the question of how to proceed. Much recent work in epistemology has attempted to dress the question.[83]

Now, these different ways of understanding cognitive success each gives rise to a different understanding of the diverse ways in which cognitive success can be obstructed, and so a different understanding of the ways in which an agent may be harmed by such obstructions. Obstructing an agent's cognitive success constitutes an epistemic harm. In a situation in which

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[80] E. Craig, *Knowledge and the State of Nature : An Essay in Conceptual Synthesis* (Oxford: Clarendon Press, 1990), 64-65.

[81] L. BonJour, *The Structure of Empirical Knowledge* (Cambridge, MA: Harvard University Press, 1985). R. Audi, *The Structure of Justification*, (Cambridge: Cambridge University Press, 1993).

[82] C. Korsgaard, *Self-Constitution: Agency, Identity, and Integrity* (Oxford: Oxford University Press, 2009), 7.

[83] M. McCormick, *Believing Against the Evidence: Agency and the Ethics of Belief*, New York: Routledge, 2015), and S. Rinard, "No Exception for Belief," *Philosophy and Phenomenological Research*, 94(1) (2017a), 121.

false testimony would be an epistemic harm, dishonest testimony would be an epistemic wrong. Insinuation, inattention, and false indoctrination can all constitute epistemic harms as each of them can obstruct, and sometimes wrongly obstruct an agent's cognitive success.

For example, one can mislead you into drawing false conclusions, even if what one says is true. For instance, when I say, "the victims were killed by a herdsman," even if what I say is literally true, it can mislead the hearer into thinking that the killer's being a herdsman is a relevant explanation to his crime. Similarly, one can harm you by getting you to think poorly of your own capacity to understand a subject by refusing to pay attention to what you think or say. Also, one can harm you by indoctrinating you in a view so strong that you lose the ability to consider alternative views.

The epistemic harms we just mentioned occur frequently in the course of daily life, and they are typically constituted by some particular acts that we perform, such as lending greater credence to the word of a man over that of a woman, or using rhetorical devices to insinuate things that one does not know to be true. Recent work in feminist epistemology has helped us to gain an appreciation of how widespread this phenomenon is.[84]

Sometimes the harm might even be built into our practice of epistemic appraisal perhaps even a tendency that is somehow constitutive of that very practice. Suppose, for instance, that it is constitutive of our practice of epistemic appraisal to count someone as knowing a fact or being knowledgeable only if he possesses a doctorate degree from a recognized academic institution. Whatever may be said in favour of our practice's having such a feature, one of its effects is clear: those individuals who are most excellently knowledgeable with regard to certain facts will find that the deliverance of their unique cognitive sensitivities is not counted as knowledge. And so, these same individuals will not be granted the same authority or credibility as the doctorate degree holders, even when these latter are less knowledgeable and less cognitively sensitive to the range of facts in question.

5.6 Opinion and Knowledge

In all senses of knowledge and opinion, a belief justifiably known to be true in knowledge while a belief not known to be true is opinion. In this case, all knowledge is true but not all opinions are true. Every proposition known to be true (knowledge) is believed to be true; but not every proposition believed to be true (opinion) is known to be true. Each of a person's beliefs, whether knowledge or opinion, is the end result of a particular thought process, with a conclusive act – judgment that something is the case.

Platonic epistemology holds that knowledge of ideas is innate, so that learning is the development of ideas buried deep in the soul, often under the midwife-like guidance of an interrogator. In several dialogues by Plato, the character Socrates presents the view that each soul

[84] see M. Fricker, *Epistemic Injustice: Power and the Ethics of Knowing* (Oxford: Oxford University Press, 2007); K. Dotson, "Conceptualizing Epistemic Oppression", *Social Epistemology*, 28(2), (2014), 115.

existed before birth with the Form of the Good and a perfect knowledge of ideas. Thus, when an idea is "learned" it is actually just "recalled."[85]

Plato wished to know the difference between knowledge and opinion. His idea is that something needs to be added to opinion to get knowledge. That something else is "truth," "justification," "reliability," etc. Plato, thus, drew a sharp distinction between knowledge, which is certain, and mere true opinion, which is not certain. According to him, opinions derive from the shifting world of sensation; knowledge derives from the world of timeless Forms or essences. In the republic, these concepts were illustrated using the metaphor of the sun, the analogy of the divided line, and the allegory of the cave.

5.6.1 Metaphor of the Sun

In the Republic (507b-509c) Plato's Socrates uses the sun as a metaphor for the source of "intellectual illumination," which he held to be *The Form of the Good*. It starts with the eye, which Socrates says is unusual among the sense organs in that it needs a medium, namely light, in order to operate. The strongest and best source of light is the sun; with it, we can discern objects clearly. Analogously for intelligible objects, *The Form of the Good*, is necessary in order to understand any particular thing. Thus, if we attempt to understand why things are as they are, and what general categories can be used to understand various particulars around us, without reference to any forms (universals) we will fail completely. By contrast, the domain where truth and reality shine resplendent is none other than Plato's world of forms – illustrated by the highest of the forms, that of the good. It is only here that knowledge (and not opinion) consists.

5.6.2 The Divided Line

In Plato's republic, Book VI, the divided line has two parts that represent the intelligible world and the smaller visible world. Each of those two parts is divided, the segments within the intelligible world represent higher and lower forms and the segments within the visible world represent ordinary visible objects and their shadows, reflections, and other representations. The line segments are unequal and their lengths represent their comparative clearness and obscurity and their comparative reality and truth, as well as whether we have knowledge or instead mere opinion of the object

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CHAPTER SIX

THEORIES OF JUSTIFICATION

6.1 Introductory Discourse

What precisely is involved in knowing a fact? Whatever it is, it is widely recognized that some of our cognitive successes fall short of knowledge. An agent may, for example, conduct himself in a way that is intellectually infallible, and yet still end up believing a false proposition. You have every reason to believe that your birthday is December 1: it says so on your birth certificate and all of your medical records, and everyone in your family insists that it is December 1. Nevertheless, if all of this evidence is the result of a time-keeping mistake made at the time of our birth, your belief about your birthday is false, despite being well justified. Debates concerning the nature of justification can be understood as debates concerning the nature of such non-knowledge-guaranteeing cognitive successes as the one given above.

6.2 Deontological and Non-Deontological Justification

How is the term 'justification' used in ordinary language? Here is an example: I asked you a question (say, how much does our father have in his account), and you told me a lie (say, I don't know – whereas you know). Were you justified in lying? Demola thinks you were, because my question was an inappropriate one, the answer to which was none of my business. What might Demola mean when he thinks that you were justified in responding with a lie? She means that you were under no obligation to refrain from lying. Due to the inappropriateness of my question, it was not your duty to tell the truth. This understanding of justification is commonly labeled deontological justification.

6.3 Deontological Justification

S is justified in doing x if and only if S is not obliged to refrain from doing x. More appropriately:

> S is justified in believing that p if and only S is not obliged to refrain from believing that p.

The key term here is obligation or duty. What kind of obligations are relevant when we wish to ask whether or not a belief (rather than an action) is justified or unjustified? The answer is this: when we evaluate an action, we are interested in assessing the action from either a moral or a prudential point of view, whereas when it comes to beliefs, we are interested in the pursuit of truth, or of understanding, or of knowledge.

Philosophers differ in their response about what we must do in the pursuit of such distinctively epistemic aim. According to one answer, the one favoured by evidentialists, we ought to believe

in accordance with our evidence[86] For this answer to be helpful, we need an account of what "evidence" consists in, and what it mean to believe in accordance with it. The deontological understanding of the concept of justification is common to the way philosophers such as Descartes, Locke, Moore and Chisholm have thought about justification.

Recently, however, two main objections have been raised against conceiving of justification deontologically. First, it has been argued that deontological justification presupposes that we can have a sufficiently high degree of control over our beliefs. This objection claims that beliefs are akin not to actions but to things. The idea is that beliefs simply arise in or happen to us. Therefore, it is not suitable for deontological evaluation.[87] To this objection, some advocates of deontological justification have replied that lack of control over our beliefs is no obstacle to thinking of justification as a deontological status.[88] Other advocates of deontological justification argue that we enjoy no less control over our beliefs than we do over our intentional actions.[89]

The other objection to deontological justification purports that deontological justification cannot suffice for an agent to have a justified belief. This claim is typically supported by describing cases involving either a benighted, culturally isolated society or subjects who are cognitively deficient. Such cases involve subjects whose cognitive limitations make it the case that they are under no obligation to refrain from believing as they do, but whose limitations nevertheless render them incapable of forming justifiable beliefs.[90]

It is evident from the ongoing that those who reject deontological justification think of justification not deontologically, but rather as a property that a belief has when it is, in some sense, sufficiently likely to be true. Alston writes: "I agree that 'justification' is the wrong word for a non-deontological concept, but we seem to be stuck with it in contemporary theory of knowledge."[91] Hence, we may call this sufficient likelihood of justification. Let us define it as follows:

6.4 Sufficient Likelihood of Justification

S is justified in believing that p if and only if S believes that p in a way that makes it sufficiently likely that her belief is true.

If we wish to pin down exactly what the likelihood at issue amounts to, we will have to deal with a variety of issues. Indeed, a belief can be very likely to be true in a way that is completely

[86] T. Kelly, "The Rationality of Belief and Some Other Propositional Attitudes", *Philosophical Studies*, 110(2), (2002), 163.
[87] M. Chrisman, "Ought to Believe":, *Journal of Philosophy*, 105(7), (2008), 348.
[88] R. Feldman, "Epistemic Obligations", *Philosophical Perspectives*, 2 (1988), 235.
[89] M. Steup, "Believing Intentionally", *Synthese*, 194(8), (2017), 2673; S. Rinard, Susanna,, 2019b, "Equal Treatment for Belief", *Philosophical Studies*, 176(7) (2019b), 1923–1950.
[90] For a response to this objection, see M. Steup, "A Defense of Internalism", in *The Theory of Knowledge: Classical and Contemporary Readings*, Louis P. Pojman (ed.), (Belmont, CA: Wadsworth, 1999), pp. 373–384.
[91] W.P. Alston, "Varieties of Privileged Access", *American Philosophical Quarterly*, 8(3), (1989), 7ff.

irrelevant to the beliefs being, or not being, an instance of knowledge. In that case, it would not be sufficiently likely to be true in a way that is relevant to any question of justification. For example, suppose you believe that Buhari will win the election (*p*). Suppose also that our belief originates solely in wishful thinking. Finally, suppose that Buhari's winning the election is objectively probable because it is a fact that over 80% of the electorates will vote in his favour. It follows that your belief that *p* is likely to be true. As such, it is very likely that your belief is true. However, since your belief is the result of wishful thinking, it would not be justified nor be an instance of knowledge. What we need is likelihood of truth that arises not by virtue of what the subject beliefs, but rather by the virtue of the way in which the subject holds, or comes to hold, the belief. But then we must find, in a systematic and principled way, a way of specifying the relevant ways of holding, or coming to hold, a belief. This endeavor raises what has been called the "the generality problem."[92]

For now, let us just focus on the main point. Those who prefer "sufficient likelihood justification" to deontological justification would say that sufficient likelihood of truth and deontological justification can diverge: it is possible for a belief to be deontologically justified without being sufficiently likely to be true. This is just what cases involving benighted cultures or cognitively deficient subjects are designed to show.

6.5 How is Belief Justified?

What makes a belief that p justified, when it is? Whether a belief is justified or unjustified, there is something that makes it so. Let us call the things that make a belief justified or unjustified J-factors. But which features of a belief are J-factors?

6.5.1 Evidentialism

According to "evidentialists," it is the believer's possession of evidence for p. What is it, though, to possess evidence for p? Some evidentialists would say it is to be in an experience that presents p as being true. According to this view, if the tea in your cup tastes sweet to you, then you have evidence that the tea is sweet. If you feel a troubling pain in your head, you have evidence that you have a headache. If you have a memory of having a cup of tea for breakfast, then you have evidence about what you had for breakfast. And when you clearly see or intuit that a proposition (say, if Hyginus has more than four cars, then Hyginus has more than three cars) is true, then you have evidence for that proposition.

On this view, evidence consists in perception, introspection, memory and intuition, and to possess evidence is to have such experiences. Therefore, according to this experientialist version of evidentialism, what makes you justified in believing that p is your having an experience that

[92] See R. Feldman, *Epistemology* (Upper Saddle River, NJ: Prentice Hall, 2003), 19.

represents p as being true.[93] Other versions of evidentialism might identify other factors as your evidence, but would still insist that those factors are the J-factors.

6.5.2 Reliabilism

Evidentialism is often contrasted with reliabilism, which is the view that a belief is justified if it results from a reliable source, where a source is reliable if it results from already established true beliefs. Reliabilists can also grant that the experiences mentioned in our previous discussion can be important to the justification of beliefs. However, they deny that justification is essentially a matter of having suitable experiences. Instead, they say that those experiences matter to the justification of beliefs not merely by virtue of being evidence in support of those beliefs, but more fundamentally, by virtue of being part of the reliable source of those beliefs.

Different versions of reliabilism have been defended. Some philosophers claim that what justifies a belief is that it is produced by a process that is reliable.[94] Others claim that what justifies a belief is that it is responsive to grounds that reliably co-vary with the truth of that belief. Still others claim that what justifies a belief is that it is formed by the virtuous exercise of a capacity, and so on. To understand our discussion of evidentialism and reliabilism better, we shall look briefly into internalism and eternalism.

6.6 Internal vs. External

6.7 Internalism

Consider a science fiction scenario concerning a human brain that is removed from its skull, kept alive in a vat of nutrient fluid, and electrochemically stimulated to have precisely the same total series of experiences that you have had. Let us call such a brain BIV. A BIB would believe everything that you believe, and would (it is often thought) be justified in believing those things to precisely the same extent that you are justified in believing them. Thus, justification is determined solely by those internal factors that you and your fictitious brain share. This view is what has come to be called *internalism* about justification.[95]

6.7.1 Approaches to Internalism

There is no unanimity on how to understand the notion of internality among those who think that justification is internal, that is, what it is about the factors that you share with your BIV that makes those factors relevant to justification. We can distinguish between two approaches. According to the first, justification is internal because we enjoy a special kind of access to J-factor: they are always recognizable on reflection. Hence, assuming certain further premises (which will be mentioned momentarily), justification itself is always recognizable on

[93] R. Feldman, *Epistemology*, 21.
[94] A. I. Goldman, *Epistemology and Cognition* (Cambridge, MA: Harvard University Press, 1986), ix.
[95] L. BonJour, *The Structure of Empirical Knowledge*

reflection.[96] Let us call this approach accessibility internalism. According to the second approach, justification is internal because J-factors are always mental states.[97] Let us call this mentalist internalism.

6.8 Externalism

On the other hand, externalism is simply the denial of internalism. Externalists say that what we want from justification is the kind of likelihood of truth needed for knowledge, and the internal conditions that you share with your BIV do not generate such likelihood of truth. Hence, justification involves external conditions.

Evidentialism is typically associated with internalism and reliabilsm with externalism. Let u see why. Evidentialism says at least two things:[98]

E1: What makes one justified in believing p is nothing over and above the evidence that one possesses.

E2: What evidence one possesses is fixed by one's mental states.

By virtue of E2, evidentialism is an instance of mentalist internalism. Whether it is also an instance of accessibility internalism is a more complicated issue. The conjunction of E1 and E2 by itself implies nothing about the accessibility of justification. But mentalist internalists who endorse the first principle below will also be committed to accessibility internalism, and evidentialists who also endorse the second principle below will be committed to the accessibility of justification.

6.8.1 Luminosity: One's own mind is cognitively luminous whenever one:[99]

- is in a particular mental state
- can always recognize on reflection what mental states one is in
- can always recognize on reflection what evidence one possesses.

6.8.2 Necessity: The principle that determines what is evidence for what are *a priori* recognizable. Relying on *a priori* insight, one can therefore always recognize on reflection whether, or the extent, to which a particular body of evidence is evidence for p.

Although E1 and E2 by themselves do not imply access internalism, their conjunction with Luminosity and Necessity may imply access internalism.

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[96] R.M. Chisholm, *Theory of Knowledge*, (3rd ed.), (Englewood Cliffs, NJ: Prentice-Hall, 1989), 17.
[97] R. Feldman, 2001b, "Skeptical Problems, Contextualist Solutions", *Philosophical Studies*, 103(1), (2001b), 61.
[98] M. Steup and E. Sosa (eds.), *Contemporary Debates in Epistemology* (Malden, MA: Blackwell, 2005), 78.
[99] Steup and sosa…… T. Williamson, *Knowledge and Its Limits*, (Oxford: Oxford University Press, 2002), ch.4. He rejects the claim that mental states are luminous.

Now, let us consider why reliabilsm is an externalist theory. Reliabilsm says that the justification of one's belief is a function of the reliability of one's belief sources such as memorial, perceptual and introspective states and processes. Even if the operations of the sources are mental states, their reliability is not itself a mental state. Therefore, reliabilists reject mentalist internalism. Moreover, insofar as the reliability of one's belief sources is not itself recognizable by means of reflection, how could reflection enable us to recognize when such justification obtains? Reliabists who think there is no good answer to this question also reject access internalism.[100]

[100] For works on the internalism-externalism issues, see S.C. Goldberg, "What Is the Subject-Matter of the Theory of Epistemic Justification?", in *Epistemic Evaluation: Purposeful Epistemology*, David K. Henderson and John Greco (eds.), (Oxford: Oxford University Press, 2015), 204–205., among others.

CHAPTER SEVEN

THE STRUCTURE OF JUSTIFICATION

7.1 Introductory Discourse

Epistemologists believe that there is no isolated knowledge. Knowing something requires knowing other things. Anyone who knows anything knows other things, for our knowledge forms a body – and that body has a structure. But what is this structure? Epistemologists generally tend to regard the structure of our knowledge as deriving from that of our justification. This conclusion can only become clearer as we examine some epistemological accounts of justification.

7.2 Foundationalism

According to this theory, our justified beliefs are structured like a building: they are divided into a foundation and a superstructure, the later resting upon the former. Beliefs belonging to the foundation are *nonbasic* and receive justification from the justified beliefs in the foundation. Before we evaluate this foundationalist account of justification, let us first try to spell it out more precisely.

What is it for a justified belief to be basic? According to one account, what makes a justified belief basic is that it does not receive its justification from any other beliefs. The following definition captures this thought.

7.2.1 Doxastic Basicality (DB)

S's justified belief that p is basic if and only if S's belief that p is justified without owing its justification to any of Ss other beliefs.

Let us consider what would qualify as an example of a basic belief according to this definition. Suppose you notice someone's cap and you also notice that that cap looks blue to you. So you believe:

*(B) It appears to me that that cap is blue.

The above (B) is an example of a justified belief. Doxastic basicality tells us that (B) is basic if and only if it does not owe its justification to any other beliefs of yours. Therefore, if (B) is indeed basic, there must be some item or other to which (B) owes its justification, but that item will not be another belief of yours. We call this kind of basicality "doxastic" because it makes basicality a function of how our doxastic system (our belief system) is structured.

7.2.2 Kinds of Foundationalism

Let us now turn to the question of where the justification that attaches to (B) might come from, if we think of basicality, as defined by doxastic basicality. Note that doxastic basicality merely tells us that (B) is justified. It does not tell us how precisely (B) is justified. So it does not answer that question. What we need in addition to it, is an account of what it is that justifies a belief such as (B).

7.2.3 Privilege Foundationalism

According to one strand of foundationalist thought (which we call privilege foundationalism), (B) is justified because it cannot be false, doubted, or corrected by others. On such a view, (B) is justified because it carries with itself an *epistemic privilege* such as infallibility, indubitability and incorrigibility (cf. Alston, 1989). Note that (B) is a belief about how the cap appears to you. So (B) is a belief about a perceptual experience of yours. According to this strand of foundationalism, the basic beliefs of a subject are introspective beliefs about his/her own mental states, of which perceptual experiences make up one subset. Other mental states about which a subject can have basic beliefs may include such things as having a headache, being tired, feeling happy, etc. Beliefs about external objects cannot qualify as basic, according to this kind of foundationalism, because it is impossible for such beliefs to enjoy the kind of epistemic privileges necessary for being basic.

7.2.4 Experiential Foundationalism

According to a different strand of foundationalism (which we call experiential foundationalism), (B) is justified by some further mental state of yours, but not by a further belief of yours. Indeed, (B) is justified by the very perceptual experience that (B) itself is about, namely the cap's looking blue to you. Let (E) represent that experience. According to this alternative view, (B) and (E) are distinct mental states. The idea is that what justifies (B) is (E). Since (E) is an experience, not a belief of yours, (B) can, according to doxastic basicality, still be basic.

7.2.5 Privilege vs. Experiential

Privilege foundationalism is generally thought to restrict basic beliefs so that beliefs about contingent, mid-independent facts cannot be basic, since beliefs about such facts are generally thought to lack the privilege that attends our introspective beliefs about our own present mental states, or our beliefs *a priori* necessities. Experiential foundationalism is not restrictive in the same way. Suppose instead of (B), you belief (H):

(H) That cap is blue.

Unlike B, (H) is about the cap itself, and not the way the cap appears to you. Such a belief is not one about which we are infallible or otherwise epistemicall privileged. Privilege foundationalism would, therefore, classify (H) as nonbasic. However, it is quite plausible to think that E justifies not only (B) but (H) as well. If (E) indeed is what justifies (H), and (H) does not receive any

additional justification from further beliefs of yours, the (H) qualifies, according to doxastic basicality, as basic.

Experiential foundationalism, thus, combines two crucial ideas:

(i) when a justified belief is basic, its justification is not owed to any other belief;
(ii) what in fact justifies basic beliefs are experiences.

Under normal circumstances, perceptual beliefs such as (H) are not based on any further beliefs about one's own perceptual experience. It is not clear, therefore, how privilege foundationalism can account for the justification of ordinary perceptual beliefs like (H).[101]

Experiential foundationalism, on the other hand, has no difficulty explaining how ordinary perceptual beliefs are justified. According to this theory, they are justified by the perceptual experiences that give rise to them. This could be the reason why more preference has been given to experiential foundationalism by some philosophers. So far, we have articulated one conception of basicality, namely doxastic basicality. Below is an alternative conception.

7.2.6 Epistemic Basicality (EB)

S's justified belief that p is basic if and only if S's justification for believing that p does not depend on any justification S possesses for believing a further proposition, q.[102]

From this, it is clear that epistemic basicality makes it more difficult for a belief to be basic that doxastic basicality does. To throw more light, we turn to the main question (let us call it the J-question) that advocates of experiential foundationalism.

7.2.7 The J-Question: EB vs. DB

Why are perceptual experiences a source of justification?

One way of answering the J-question is as follows: perceptual experiences are a source of justification only when, and only because, we have justification for taking them to be reliable.[103] Note that your having justification for believing that p does not entail that you actually believe p. thus, your having justification for attributing reliability to your perceptual experiences does not entail that you actually believe them to be reliable.

What then might give us justification for thinking that our perceptual experiences are reliable? That is a complicated issue. For the purpose of this book, let us consider the following answer:

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[101] See R.A. Fumerton, *Metaepistemology and Skepticism* (Lanham, MD: Rowman & Littlefield, 1995), for an effort to clarify this

[102] Cf. M. Huemer, *Skepticism and the Veil of Perception* (Lanham, MD: Rowman & Littlefield Publishers, 2001), 33-34.

[103] See S. Cohen, "Basic Knowledge and the Problem of Easy Knowledge", *Philosophy and Phenomenological Research*, 65(2), (2002), 309–329, for an article advocating compromise positions

we remember that they have served us well in the past. We are supposing, then, that justification for attributing reliability to your perceptual experiences consists of memories of perceptual success. On this view, a perceptual experience (E) justifies a perceptual belief only when, and only because, you have suitable track-record memories that give you justification for considering (E) reliable. Of course this raises the question why those memories give you justification, but there are many different approaches to this question, as we will see more fully.

If the above view is correct, then it is clear how doxastic basicality and epistemic basicality differ. Your having justification for (H) depends on your having justification for believing something else in addition to (H), namely that your visual experiences are reliable. As a result, (H) is not basic in the sense defined by epistemic basicality. However, (H) might still be basic in the sense defined b doxastic basicality. If you are justified in believing (H) and your justification is owed solely to (E) and (say, M), neither of which includes any beliefs, then your belief is doxastical, though not epistemically, basic

7.2.8 Other Possible answers

We have considered one possibility of answering the J-question, and considered how epistemic basicality and doxastic basicality differ, if that answer is correct. But there are other possible answers to the J-question. Another answer is that perceptual experiences are a source of justification when, and because, they are of types that reliably produce true belief. Another answer is that perceptual experiences are a source of justification when, and because, they are of types that reliably indicate the truth of their content. Yet another answer is that perceptual experiences are a source of justification when, and because, they have a certain phenomenology, namely that of presenting their content as true. It follows from this internalist answer that your perceptual experiences are a source of justification for you even if they are systematically unreliable concerning the truth of their content.

7.3 Transfer of Justification

Finally, let us briefly consider how justification is supposed to be transferred from basic to non-basic beliefs. There are two options: the justificatory relation between basic and non-basic beliefs could be deductive or non-deductive. If we take the relation to be deductive, each of one's non-basic beliefs would have to be such that it can be deduced from one's basic belief. But if we consider a random selection of typical beliefs we hold, it is difficult to see from which basic belief they could be deduced.

Foundationalists, therefore, typically conceive of the link between the foundation and the superstructure in non-deductive terms. They would say that, for a given set of basic beliefs, B, to justify a nonbaasic belief, B^*, it is not necessary that B entails B^*. Instead, it is sufficient that, the inference from B to B^* is a rational one – however such rationality is to be understood.

7.4 Coherentism

Foundationalism says that knowledge and justification are structured like a building, consisting of a superstructure that rests upon a foundation. According to coherentism, this simile gets things wrong. Knowledge and justification are structured like a web where the strength of any given area depends on the strength of the surrounding areas. Coherentists, then, deny that there are any basic beliefs. As we have already seen, there are two different ways of conceiving of basicality. Consequently, there are two corresponding ways of constructing coherentism: as the denial of doxastic basicality or as the denial of epistemic basicality. Let us first consider coherentism as the denial of doxastic basicality.

7.4.1 Doxastic Coherentism

Every justified belief receives its justification from other beliefs in its epistemic neighborhood.

Let us apply this thought to the cap example we considered above. Suppose again you notice someone's cap and believe:

(H) That hat is blue.

Let us suppose that (H) is justified. According to coherentism, (H) receives its justification from other beliefs in the epistemic vicinity of (H). They constitute your evidence or your reason for taking (H) to be true. Which beliefs might make up this set of neighborhood beliefs? We will consider two approaches to answering this question. The first is known as *inference to the best explanation*. Such inferences generate what is called explanatory coherence.[104] According to this approach, we must suppose that you form a belief about the way the cap appears to you in your perceptual experiences, and a second belief to the effect that your perceptual experience, the cap's looking blue to you, is best explained by the hypothesis that (H) is true. Hence, the relevant set of beliefs is the following:

(1) I am having a visual experience (E): the cap looks blue to me.
(2) My having (E) is best explained by assuming that (H) is true.

There are of course alternative explanations of why you have (E). Perhaps you are hallucinating that the cap is blue. Perhaps an evil demon makes that cap look blue to you when in fact it is red. Perhaps you are the sort of person to whom caps always look blue. An explanatory coherentist would say that, compared with these, the cap's actual blueness is a superior explanation. That is why you are justified in believing (H). Note that an explanatory coherentist can also explain the lack of justification. Suppose that you remember that you just took a hallucinatory drug that makes things blue to you. That would prevent you from being justified in believing (H). The explanatory coherentist can account for this by pointing out that, in the case under consideration, the truth of (H) would not be the best explanation of why you are having experience (E). Rather,

[104] G. Harman, *Change in View: Principles of Reasoning* (Cambridge, MA: MIT Press, 1986), 2.

your having taking the hallucinatory drug would explain your have (E) at least as the hypothesis (H) would explain it. That is why, according to the explanatory coherentist, you are not justified in believing (H).

One challenge for explanatory coherentist is to explain what makes one explanation better than another. Let us use the evil demon hypothesis to illustrate this challenge. What we need is an explanation of why you are having (E). According to the evil demon hypothesis, you are having (E) because the evil demon is causing you to have it, in order to trick you. The explanatory coherentist would say that, if the bulk of our beliefs about the mind-independent world are justified, then this "evil demon" hypothesis is a bad explanation of why you are having (E). But why is it bad? What we need to answer in this question is a general and principled account of what makes one explanation better than another. Suppose we appeal to the fact that you are not *justified* in believing in the existence of evil demons. The general idea would be this: If there are two competing explanations, E1 and E2, and E1 consists of or includes a proposition that you are not justified in believing whereas E2 does not, then E2 is better than E1. The problem with this idea is that it puts the cart before the horse.

Explanatory coherentism is supposed to help us understand what it is for beliefs to be justified. It does not do that if it accounts for the difference between better and worse explanations by making use of the difference between justified and unjustified belief. If explanatory coherentism were to proceed in this way, it would be a circular, and thus uninformative, account of justification. So the challenge that explanatory coherentism must meet is to give an account, without using the concept of justification, of what makes one explanation better than another.

7.4.2 Reliability Coherentism: Let us move on to the second way in which the coherentist approach might be carried out. Recall what a subject's justification for believing *p* is all about: *possessing a link between the belief that p and the truth of p*. Suppose the subject knows that the origin of her belief that *p* is reliable. So she knows that beliefs coming from this source tend to be true. Such knowledge would give her an excellent link between the belief and its truth. So we might say that the neighborhood beliefs which confer justification on (H) are the following:

- (1) I am having a visual experience (E): the cap looks blue to me.
- (3) Experiences like (E) are reliable.

Call coherentism of this kind *reliability coherentism*. If you believe (1) and (3), you are in possession of a good reason for thinking that the cap is indeed blue. So you are in possession of a good reason for thinking that the belief in question, (H), is true. That's why, according to reliability coherentism, you are justified in believing (H).

Like explanatory coherentism, this view faces a circularity problem. If (H) receives its justification in part because you also believe (3), then, (3) itself must be justified. But where would your justification for (3) come from? One answer would be: from your memory of perceptual success in the past. You remember that your visual experiences have had a good track

record. They have rarely led you astray. The problem is that you cannot justifiably attribute a good track record to your perceptual faculties without using your perceptual faculties. So, if reliability coherentism is going to work, it would have to be legitimate to use a faculty for the very purpose of establishing the reliability of that faculty itself. But it is not clear that this is legitimate.

Thus Richard Fumerton says the following, in the context of employing circular reasoning for the purpose of rebutting skepticism:

> You cannot use perception to justify the reliability of perception! You cannot use memory to justify the reliability of memory! You cannot use induction to justify the reliability of induction! Such attempts to respond to skeptic's concerns involve blatant, indeed pathetic, circularity.[105]

We have seen that explanatory coherentism and reliability coherentism each face its own distinctive circularity problem. Since both are versions of *doxastic* coherentism, they both face a further difficulty: Do people, under normal circumstances, really form beliefs like (1), (2), and (3)? It would seem they do not. It could be objected, therefore, that these two versions of coherentism make excessive intellectual demands of ordinary subjects who are unlikely to have the background beliefs that, according to these versions of coherentism, are needed for justification. This objection could be avoided by stripping coherentism of its doxastic element. The result would be the following version of coherentism, which results from the rejection of epistemic basicality (the epistemic conception of basicality).

7.4.3 Dependence Coherentism: Whenever one is justified in believing a proposition p_1, one's justification for believing p_1 depends on justification one has for believing some further propositions, p_1, p_2, … p_n.

An explanatory coherentist might say that, for you to be justified in believing (H), it is not necessary that you actually *believe* (1) and (2). However, it is necessary that you have *justification* for believing (1) and (2). It is your having justification for (1) and (2) that gives you justification for believing (H). A reliability coherentist might make an analogous point. He might say that, to be justified in believing (H), you need not believe anything about the reliability of the origin of your belief. You must, however, have justification for believing that the origin of your belief is reliable; that is, you must have justification for (1) and (3). Both versions of dependence coherentism, then, rest on the supposition that it is possible to have justification for a proposition without actually believing that proposition.

Dependence coherentism is a significant departure from the way coherentism has typically been construed by its advocates. According to the typical construal of coherentism, a belief is

[105] R.A. Fumerton, *Metaepistemology and Skepticism*, 177.

justified, only if the subject has certain further *beliefs* that constitute reasons for the given belief. Dependence coherentism rejects this. According to it, justification need not come in the form of beliefs. It can come in the form of introspective and memorial experience, so long as such experience gives a subject justification for beliefs about either reliability or explanatory coherence. In fact, dependence coherentism allows for the possibility that a belief is justified, not by receiving *any* of its justification from other beliefs, but solely by suitable perceptual experiences and memory experience.[106]

Next, let us examine some of the reasons provided in the debate over foundationalism and coherentism.

7.5 Why Foundationalism?

7.5.1 The Regress Argument

The regress problem (also known as Agrippa's Trilemma) is the problem of providing a complete logical foundation for human knowledge. The traditional way of supporting a rational argument is to appeal to other rational arguments, typically using chains of reason and rules of logic. A classic example that goes back to Aristotle is deducing that *Socrates is mortal*. We have a logical rule that says *All humans are mortal* and an assertion that *Socrates is human* and we deduce that *Socrates is mortal*. In this example how do we know that Socrates is human? Presumably we apply other rules such as: *All born from human females are human*. Which then leaves open the question how do we know that all born from humans are human? This is the regress problem: how can we eventually terminate a logical argument with some statements that do not require further justification but can still be considered rational and justified? As John Pollock stated:

> ...to justify a belief one must appeal to a further justified belief. This means that one of two things can be the case. Either there are some beliefs that we can be justified for holding, without being able to justify them on the basis of any other belief, or else for each justified belief there is an infinite regress of (potential) justification [the nebula theory]. On this theory there is no rock bottom of justification. Justification just meanders in and out through our network of beliefs, stopping nowhere.[107]

The apparent impossibility of completing an infinite chain of reasoning is thought by some to support skepticism. It is also the impetus for Descartes' famous dictum: *I think, therefore I am.*

[106] Cf. S. Haack, *Evidence and Inquiry: Towards Reconstruction in Epistemology* (Oxford: Blackwell, 1993), 21.
[107] Cf. Peter Klein, "Skepticism," in Zalta, Edward N. (ed.), *The Stanford Encyclopedia of Philosophy* (2015). Retrieved 30 October, 2021.

Descartes was looking for some logical statement that could be true without appeal to other statements.

Now, the main argument for foundationalism is called the *regress argument*. It is an argument from elimination. With regard to every justified belief, B_1, the question arises where does the justification of B_1 comes from. If B_1 is not basic, it would have to come from another belief, B_2. But B_2 can justify B_1 only if B_2 is justified itself. If B_2 is basic, the justificatory chain would end with B_2. But if B_2 is not basic, we need a further belief, B_3. If B_3 is not basic, we need a fourth belief, and so forth. Unless the ensuing regress terminates in a basic belief, we get two possibilities: the regress will either return *back* to B_1 or continue *ad infinitum*. According to the regress argument, both of these possibilities are unacceptable. Therefore, if there are justified beliefs, there must be basic beliefs.

Steup noted that this argument suffers from various weaknesses.[108] First, we may wonder whether the alternatives to foundationalism are really unacceptable. In the recent literature on this subject, we actually find an elaborate defense of the position that infinitism is the correct solution to the regress problem. Nor should circularity be dismissed too quickly. The issue is not whether a simple argument of the form *p therefore p* can justify the belief that *p*. Of course it cannot. Rather, the issue is ultimately whether, in the attempt to show that trust in our faculties is reasonable, we may make use of the input our faculties deliver. Whether such circularity is as unacceptable as a *p-therefore-p* inference is an open question.[109]

Moreover, the avoidance of circularity does not come cheap. Experiential foundationalists claim that perception is a source of justification. Hence they need to answer the J-question: *Why* is perception a source of justification? As we saw above, if we wish to answer this question without committing ourselves to the kind of circularity dependence coherentism involves, we must choose between externalism and an appeal to brute necessity.

The second weakness of the regress argument is that its conclusion merely says this: If there are justified beliefs, there must be justified beliefs that do not receive their justification from other beliefs. Its conclusion does not say that, if there are justified beliefs, there must be beliefs whose justification is independent of any justification for further beliefs. So the regress argument, if it were sound, would merely show that there must be *doxastic* basicality. Dependence coherentism, however, allows for doxastic basicality. So the regress argument merely defends experiential foundationalism against doxastic coherentism. It does not tell us why we should prefer experiential foundationalism to dependence coherentism.

Experiential foundationalism can be supported by citing cases like the blue cap example. Such examples make it plausible to assume that perceptual experiences are a source of justification. But they do not arbitrate between dependence coherentism and experiential foundationalism,

[108] M. steup and Ram Nata, "Epistemology."
[109] Ibid.

since both of those views appeal to perceptual experiences to explain why perceptual beliefs are justified.

Lastly, foundationalism can be supported by advancing objections to coherentism. One prominent objection is that coherentism somehow fails to ensure that a justified belief system is in contact with reality. This objection derives its force from the fact that fiction can be perfectly coherent. Why think, therefore, that the coherence of a belief system is a reason for thinking that the beliefs in that system tend to be true? Coherentists could respond to this objection by saying that, if a belief system contains beliefs such as "Many of my beliefs have their origin in perceptual experiences" and "My perceptual experiences are reliable", it is reasonable for the subject to think that his belief system brings her into contact with external reality.

This looks like an effective response to the no-contact-with-reality objection. Moreover, it is not easy to see why foundationalism itself should be better positioned than coherentism when contact with reality is the issue. What is meant by "ensuring" contact with reality? If foundationalists expect a *logical guarantee* of such contact, basic beliefs must be infallible. That would make contact with reality a rather expensive commodity. Given its price, foundationalists might want to lower their expectations. According to an alternative construal, we expect merely the *likelihood* of contact with reality. But if coherentists account for the epistemic value of perception in any way, then they can meet that expectation as well as foundationalists can.

Since coherentism can be construed in different ways, it is unlikely that there is one single objection that succeeds in refuting all possible versions of coherentism. Doxastic coherentism, however, seems particularly vulnerable to criticism coming from the foundationalist camp. We have already considered one of these: It would seem that doxastic coherentism makes excessive intellectual demands on believers. When dealing with the mundane tasks of everyday life, we do not normally bother to form beliefs about the explanatory coherence of our beliefs or the reliability of our belief sources.

According to a second objection, doxastic coherentism fails by being insensitive to the epistemic relevance of perceptual experiences. Foundationalists could argue as follows. Suppose you are observing a chameleon that rapidly changes its colors. A moment ago it was blue, now it is purple. You still believe it is blue. Your belief is now unjustified because you believe the chameleon is blue even though it *looks* purple to you. Then the chameleon changes its color back to blue. Now your belief that the chameleon is blue is justified again because the chameleon once again *looks* blue to you. The point would be that what is responsible for the changing justificatory status of your belief is solely the way the chameleon looks to you. Since doxastic coherentism does not attribute epistemic relevance to perceptual experiences by themselves, it cannot explain why your belief is first justified, then unjustified, and eventually justified again.

Doxastic coherentism might reply that, when the chameleon changes its color to purple, you form the belief that the chameleon looks purple to you. Because of this belief, you will not be justified in still believing that the chameleon is blue. Therefore, doxastic coherentism can explain

after all why your belief (the chameleon is blue) is unjustified after the chameleon changed its color to purple. The problem with this reply is that foundationalists are free to describe the example in whatever way they want (as long as it remains conceivable).[110] And obviously, they would want to describe it by stipulating that you do not form any beliefs about how the chameleon appears to you. In response to that, doxastic coherentists could say that your failing to form beliefs about how the chameleon appears to you is inconceivable. That claim, however, does not recommend itself as a plausible one.

7.5.2 Infinitism

An alternative resolution to the regress problem is known as infinitism. Infinitists take the infinite series to be merely potential, in the sense that an individual may have indefinitely many reasons available to them, without having consciously thought through all of these reasons when the need arises. This position is motivated in part by the desire to avoid what is seen as the arbitrariness and circularity of its chief competitors, foundationalism and coherentism. The most prominent defense of infinitism has been given by Peter Klein.[111]

7.6 Why Coherentism?

Coherentism is typically defended by attacking foundationalism as a viable alternative. To argue against privilege foundationalism, coherentists pick an epistemic privilege they think is essential to foundationalism, and then argue that either no beliefs, or too few beliefs, enjoy such a privilege. Against experiential foundationalism, different objections have been advanced. One line of criticism is that perceptual experiences do not have propositional content. Therefore, the relation between a perceptual belief and the perceptual experience that gives rise to it can only be causal. But it is not clear that this is correct. When you see the cap and it looks blue to you, does your visual experience—its looking blue to you—not have the propositional content *that the cap is blue*? If it does, then why not allow that your perceptual experience can play a justificatory role?

Another line of thought is that, if perceptual experiences have propositional content, they cannot stop the justificatory regress because they would then be in need of justification themselves. That, however, is a strange thought. In our actual epistemic practice, we never demand of others to justify the way things appear to them in their perceptual experiences. Indeed, such a demand would seem absurd. Suppose I ask you: "Why do you think that the cap is blue?" You answer: "Because it looks blue to me". There are sensible further questions I might ask at that point. For instance, I might ask: "Why do you think its looking blue to you gives you a reason for believing it is blue?" Or I might ask: "Could you not be mistaken in believing it looks blue to you?" But now suppose I ask you: "Why do you suppose the perceptual experience in which the cap looks blue to you is justified?" In response to that question, you should accuse me of misusing the

[110] Ibid.

[111] Peter D. Klein and John Turri, "Infinitism in Epistemology," *Internet Encyclopedia of Philosophy.* Retrieved 30 October, 2021.

word "justification". I might as well ask you what it is that justifies your headache when you have one, or what justifies the itch in your nose when you have one. The latter questions, you should reply, would be as absurd as my request for stating a justifying reason for your perceptual experience. [112]

Experiential foundationalism, then, is not easily dislodged. On what grounds could coherentists object to it? To raise problems for experiential foundationalism, coherentists could press the J-question: Why are perceptual experiences a source of justification? If foundationalists answer the J-question appealing to evidence that warrants the attribution of reliability to perceptual experiences, experiential foundationalism morphs into dependence coherentism. To avoid this outcome, foundationalists would have to give an alternative answer. One way of doing this would be to adopt the epistemic conception of basicality, and view it as a matter of necessity that perception is a source of justification. It remains to be seen whether such a view is sustainable.

7.7 Foundherentism

An intermediate position, known as foundherentism, is advanced by Susan Haack. Foundherentism is meant to unify foundationalism and coherentism. Haack explains the view by using a crossword puzzle as an analogy. Whereas, for example, infinitists regard the regress of reasons as taking the form of a single line that continues indefinitely, Haack has argued that chains of properly justified beliefs look more like a crossword puzzle, with various different lines mutually supporting each other.[113] Thus, Haack's view leaves room for both chains of beliefs that are vertical (terminating in foundational beliefs) and chains that are horizontal (deriving their justification from coherence with beliefs that are also members of foundationalist chains of belief).

[112] Ibid.

[113] Nigel Warburton, *Thinking from A to Z*, 44.

CHAPTER EIGHT

SOURCES OF KNOWLEDGE AND JUSTIFICATION

8.1 Introductory Discourse

Beliefs arise in people for a wide variety of causes. Among them are psychological factors such as desires, emotional needs, prejudice, and biases of various kinds. Obviously, when beliefs originate in sources like these, they do not qualify as knowledge even if true. For true beliefs to count as knowledge, it is necessary that they originate in sources we have good reason to consider reliable. These are perception, introspection, memory, reason, and testimony. Let us briefly consider each of these.

8.2 Perception

Our perceptual faculties include at least our five senses: sight, touch, hearing, smelling, and tasting. We must distinguish between an experience that can be classified as *perceiving* that *p* (for example, seeing that there is tea in the cup and tasting that it is sweet), which entails that *p* is true, and a perceptual experience in which it seems to us as though *p*, but where *p* might be false. Let us refer to this latter kind of experience as *perceptual seemings*. The reason for making this distinction lies in the fact that perceptual experience is fallible. The world is not always as it appears to us in our perceptual experiences. We need, therefore, a way of referring to perceptual experiences in which *p* seems to be the case that allows for the possibility of *p* being false. That is the role assigned to perceptual seemings. So some perceptual seemings that *p* are cases of perceiving that *p*, others are not. When it looks to you as though there is a cup of tea on the table and in fact there is, the two states coincide. If, however, you hallucinate that there is a cup on the table, you have a perceptual seeming that *p* without perceiving that *p*.

One family of epistemological issues about perception arises when we concern ourselves with the psychological nature of the perceptual processes through which we acquire knowledge of external objects. According to *direct realism*, we can acquire such knowledge because we can directly perceive such objects. For example, when you see a tomato on the table, *what you perceive* is the tomato itself. According to *indirect realism*, we acquire knowledge of external objects by virtue of perceiving something else, namely appearances or sense-data. An indirect realist would say that, when you see and thus know that there is a tomato on the table, what you really see is not the tomato itself but a tomato-like sense-datum or some such entity.

Direct and indirect realists hold different views about the structure of perceptual knowledge. Indirect realists would say that we acquire perceptual knowledge of external objects by virtue of perceiving sense data that represent external objects. Sense data enjoy a special status: we know directly what they are like. Hence, indirect realists think that, when perceptual knowledge is foundational, it is knowledge of sense data and other mental states. Knowledge of external objects is indirect: derived from our knowledge of sense data. The basic idea is that we have indirect knowledge of the external world because we can have foundational knowledge of our

own mind. Direct realists, in contrast, say that perceptual experiences can give you direct, foundational knowledge of external objects.

We take our perceptual faculties to be reliable. But how can we know that they are reliable? For externalists, this might not be much of a challenge. If the use of reliable faculties is sufficient for knowledge, and if by using reliable faculties we acquire the belief that our faculties are reliable, then we come to know that our faculties are reliable. But even externalists might wonder how they can, via argument, *show* that our perceptual faculties are reliable. The problem is this: it would seem the only way of acquiring knowledge about the reliability of our perceptual faculties is through memory, through remembering whether they served us well in the past. But should I trust my memory, and should I think that the episodes of perceptual success that I seem to recall were in fact episodes of perceptual success? If I am entitled to answer these questions with "yes", then I need to have, to begin with, reason to view my memory and my perceptual experiences as reliable. It would seem, therefore, that there is no non-circular way of arguing for the reliability of one's perceptual faculties.[114]

8.3 Introspection

Introspection is the capacity to inspect the present contents of one's own mind. Through introspection, one knows what mental states one is currently in: whether one is thirsty, tired, excited, or depressed. Compared with perception, introspection appears to have a special status. It is easy to see how a perceptual seeming can go wrong: what looks like a cup of tea on the table might be just be a clever hologram that is visually indistinguishable from an actual cup of tea. But can it introspectively seem to me that I have a headache when in fact I do not? It is not easy to see how it could be. Thus introspection is widely thought to enjoy a special kind of immunity to error. But what does this amount to?

First, it could be argued that, when it comes to introspection, there is no difference between appearance and reality; therefore, introspective seemings infallibly constitute their own success. Alternatively, one could view introspection as a source of certainty. Here the idea is that an introspective experience of *p* eliminates any possible reason for doubt as to whether *p* is true. Finally, one could attempt to explain the specialness of introspection by examining the way we respond to first-person reports: typically, a special authority is attributed a special authority to such reports. According to this approach, introspection is incorrigible: its deliverances cannot be corrected by any other source.

However, we construe the special kind of immunity to error that introspection enjoys, such immunity is not enjoyed by perception. Some foundationalists have therefore thought that the foundations of our empirical knowledge can be furnished by introspection of our own perceptual experiences, rather than perception of mind-independent things around us.

[114] W.P. Alston, "Varieties of Privileged Access", 7ff.

Is it really true, however, that, compared with perception, introspection is in some way special? Critics of foundationalism have argued that introspection is not infallible. Might one not confuse an unpleasant itch for a pain? Might I not think that the shape before me appears circular to me when in fact it appears slightly elliptical to me? If it is indeed possible for introspection to mislead, then it is not clear in what sense introspection can constitute its own success, provide certainty, or even incorrigibility. Yet it is also not easy to see either how, if one clearly and distinctly feels a throbbing headache, one could be mistaken about that. Introspection, then, turns out to be a mysterious faculty. On the one hand, it does not seem to be an infallible faculty; on the other hand, it is not easy to see how error is possible in many specific cases of introspection.

The definition of introspection as the capacity to know the present contents of one's own mind leaves open the question of how similar the different exercises of this capacity may be from one another. According to some epistemologists, when we exercise this capacity with respect to our sensations, we are doing something very different from what we do when we exercise this capacity with respect to our own conscious beliefs, intentions, or other rationally evaluable states of mind: our exercises of this capacity with respect to our own conscious, rationally evaluable states of mind is, they claim, partly *constitutive* of our being in those very states. In support of this claim, they point out that we sometimes address questions of the form "do you believe that *p*?" by considering whether it is true that *p*, and reporting our belief concerning *p* not by inspecting our mind, but rather by making up our mind.[115]

8.4 Memory

Memory is the capacity to retain knowledge acquired in the past. What one remembers, though, need not be a past event. It may be a present fact, such as one's telephone number, or a future event, such as the date of the next elections. Memory is, of course, fallible. Not every experience as of remembering that *p* is an instance of correctly remembering that *p*. We should distinguish, therefore, between remembering that *p* (which entails the truth of *p*) and *seeming* to remember that *p* (which does not entail the truth of *p*).

What makes memorial seemings a source of justification? Is it a necessary truth that, if one has a memorial seeming that *p*, one has thereby prima facie justification for *p*? Or is memory a source of justification only if, as coherentists might say, one has reason to think that one's memory is reliable? Or is memory a source of justification only if, as externalists would say, it is in fact reliable? Also, how can we respond to skepticism about knowledge of the past? Memorial seemings of the past do not guarantee that the past is what we take it to be. We think that we are older than twenty years, but it is very possible that we are not. This applies to our dispositions to have memorial seemings of a more distant past and items, such as apparent fossils that suggest a past going back millions of years. Our seeming to remember these things does not entail,

[115] R. Moran, *Authority and Estrangement: An Essay on Self-Knowledge* (Princeton, NJ: Princeton University Press, 2002), 94.

therefore, that it really is. Why, then, should we think that memory is a source of knowledge about the past?

8.5 Reason

Some beliefs are (thought to be) justified independently of experience. Justification of that kind is said to be *a priori*. A standard way of defining *a priori* justification is as follows:

8.5.1 A Priori Justification

S is justified *a priori* in believing that *p* if and only if *S*'s justification for believing that *p* does not depend on any experience.

When they are knowledgeably held, beliefs justified in this way are instances of *a priori* knowledge.

What exactly counts as experience? If by "experience" we mean just *perceptual* experiences, justification deriving from introspective or memorial experiences would count as *a priori*. For example, I could then know *a priori* that I am thirsty, or what I ate for breakfast this morning. While the term "*a priori*" is sometimes used in this way, the strict use of the term restricts *a priori* justification to justification derived *solely* from the use of reason. According to this usage, the word "experiences" in the definition above includes perceptual, introspective, and memorial experiences alike. On this narrower understanding, paragons of what I can know *a priori* are conceptual truths (such as "All bachelors are unmarried"), and truths of mathematics, geometry and logic.

Justification and knowledge that is not *a priori* is called "*a posteriori*" or "empirical". For example, in the narrow sense of "*a priori*", whether I am thirsty or not is something I know empirically (on the basis of introspective experiences), whereas I know *a priori* that 12 divided by 3 is 4.

Several important issues arise about *a priori* knowledge. First, does it exist at all? Skeptics about apriority deny its existence. They do not mean to say that we have no knowledge of mathematics, geometry, logic, and conceptual truths. Rather, what they claim is that all such knowledge is empirical.[116]

Second, if *a priori* justification is possible, exactly what does it involve? What *makes* a belief such as "All bachelors are unmarried" justified? Is it an unmediated grasp of the truth of this proposition? Or does it consist of grasping that the proposition is *necessarily* true? Or is it the purely intellectual state of "seeing" (with the "eye of reason") or "intuiting" that this proposition

[116] Ibid.

is true (or necessarily true)?[117] Or is it, as externalists would suggest, the reliability of the cognitive process by which we come to recognize the truth of such a proposition?

Third, if *a priori* knowledge exists, what is its extent? *Empiricists* have argued that *a priori* knowledge is limited to the realm of the *analytic*, consisting of propositions true solely by virtue of our concepts, and so do not convey any information about the world. Propositions that convey genuine information about world are called *synthetic*. *A priori* knowledge of synthetic propositions, empiricists would say, is not possible. *Rationalists* deny this. They might appeal to a proposition such as "If a ball is green all over, then it does not have black spots" as an example of a proposition that is both synthetic and yet knowable *a priori*.[118]

8.6 Testimony

Testimony differs from the sources we considered above because it is not distinguished by having its own cognitive faculty. Rather, to acquire knowledge of *p* through testimony is to come to know that *p* on the basis of someone's saying that *p*. "Saying that *p*" must be understood broadly, as including ordinary utterances in daily life, postings by bloggers on their blogs, articles by journalists, books and writings by authors, sermons from preachers, lectures from our teachers, delivery of information on television, radio, tapes, books, and other media. So, when you ask the person next to you what time it is, and she tells you, and you thereby come to know what time it is, that is an example of coming to know something on the basis of testimony.

The epistemological puzzle testimony raises is this: Why is testimony a source of knowledge? An externalist might say that testimony is a source of knowledge if, and because, it comes from a reliable source. But here, even more so than in the case of our faculties, internalists will not find that answer satisfactory. Suppose you hear someone saying "*p*". Suppose, further, that person is in fact utterly reliable with regard to the question of whether *p* is the case or not. Finally, suppose you have no clue whatever as to that person's reliability. Would it not be plausible to conclude that, since that person's reliability is unknown to you, that person's saying "*p*" does not put you in a position to know that *p*? But if the reliability of a testimonial source is not sufficient for making it a source of knowledge, what else is needed?

Thomas Reid suggested that, by our very nature, we accept testimonial sources as reliable and tend to attribute credibility to them unless we encounter special contrary reasons.[119] But that is merely a statement of the attitude we in fact take toward testimony. What is it that makes that attitude reasonable? It could be argued that, in one's own personal experiences with testimonial sources, one has accumulated a long track record that can be taken as a sign of reliability.

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[117] J. Bengson, "The Intellectual Given", *Mind*, 124(495), (2015), 707.

[118] B. Ichikawa, and Benjamin Jarvis, "Thought-Experiment Intuitions and Truth in Fiction", *Philosophical Studies*, 142(2), (2009), 221.

[119] Derek R, Brookes (ed.), *Thomas Reids' An Inquiry into the Human Mind on the Principles of Common Sense* (Pennsylvania: Pennsylvania State University Press, 1997.

However, when we think of the sheer breadth of the knowledge we derive from testimony, one wonders whether one's personal experiences constitute an evidence base rich enough to justify the attribution of reliability to the totality of the testimonial sources one tends to trust.[120] An alternative to the track record approach would be to declare it a necessary truth that trust in testimonial sources is at least prima facie justified. While this view has been prominently defended, it requires an explanation of what makes such trust necessarily prima facie justified. Such explanations have proven to be controversial.[121]

[120] E. Fricker, "Against Gullibility", in *Knowing from Words: Western and Indian Philosophical Analysis of Understanding and Testimony*, Bimal Krishna Matilal and Arindam Chakrabarti (eds.), (Dordrecht: Springer Netherlands, 1994), 126–127; M. Fricker, *Epistemic Injustice: Power and the Ethics of Knowing* (Oxford: Oxford University Press, 2002).

[121] Cf. J. Lackey, *Learning from Words: Testimony as a Source of Knowledge* (Oxford: Oxford University Press, 2008), 119.

CHAPTER NINE

PHILOSOPHICAL SKEPTICISM

9.1 Introductory Discourse

Epistemic skepticism questions whether knowledge is possible at all. Generally speaking, skeptics argue that knowledge requires certainty, and that most or all of our beliefs are fallible (meaning that our grounds for holding them always, or almost always, fall short of certainty), which would together entail that knowledge is always or almost always impossible for us. Characterizing knowledge as strong or weak is dependent on a person's viewpoint and their characterization of knowledge. Much of modern epistemology is derived from attempts to better understand and address philosophical skepticism.

9.2 Ancient Skepticism

There were at least two kinds of ancient skepticism: academic skepticism and Pyrrhonism. The first, Academic Skepticism, arose in the Academy (the school founded by Plato) in the 3rd century BCE and was propounded by the Greek philosopher Arcesilaus (*c.* 315–*c.* 240 BCE), about whom Cicero (106–43 BCE), Sextus Empiricus (flourished 3rd century CE), and Diogenes Laërtius (flourished 3rd century CE) provide information.[122] The Academic Skeptics, who are sometimes called "dogmatic" Skeptics, argued that nothing could be known with certainty. That form of Skepticism seems susceptible to the objection, raised by the Stoic Antipater (flourished *c.* 135 BCE) and others, that the view is self-contradictory.[123] To know that knowledge is impossible is to know something. Hence, dogmatic Skepticism must be false.

Carneades (*c.* 213–129 BCE), also a member of the Academy, developed a subtle reply to the charge. Academic Skepticism, he insisted, is not a theory about knowledge or the world but rather a kind of argumentative strategy. According to the strategy, the Skeptic does not try to prove that he knows nothing. Instead, he simply assumes that he knows nothing and defends that assumption against attack.[124] The burden of proof, in other words, is on those who believe that knowledge is possible.

Carneades' interpretation of Academic Skepticism renders it very similar to the other major kind, Pyrrhonism, which takes its name from Pyrrhon of Elis (*c.* 365–275 BCE). Pyrrhonists, while not asserting or denying anything, attempted to show that one ought to suspend judgment and avoid making any knowledge claims at all, even the negative claim that nothing is known.[125] The Pyrrhonist's strategy was to show that for every proposition supported by some evidence, there is an opposite proposition supported by evidence that is equally good. Such arguments, which are designed to refute both sides of an issue, are known as "tropes." The judgment that a tower is round when seen at a distance, for example, is contradicted by the judgment that the

[122] A.H. Armstrong. *An Introduction to Ancient Philosophy* (Methuen: London University, 1965), 32-33.
[123] Ibid.
[124] Ibid.
[125] Ibid.

tower is square when seen up close. The judgment that Providence cares for all things, which is supported by the orderliness of the heavenly bodies, is contradicted by the judgment that many good people suffer misery and many bad people enjoy happiness. The judgment that apples have many properties—shape, colour, taste, and aroma—each of which affects a sense organ, is contradicted by the equally good possibility that apples have only one property that affects each sense organ differently.

What is at stake in such arguments is "the problem of the criterion" – that is, the problem of determining a justifiable standard against which to measure the worth or validity of judgments, or claims to knowledge. According to the Pyrrhonists, every possible criterion is either groundless or inconclusive. Thus, suppose that something is offered as a criterion. The Pyrrhonist will ask what justification there is for it. If no justification is offered, then the criterion is groundless. If, on the other hand, a justification is produced, then the justification itself is either justified or it is not. If it is not justified, then again the criterion is groundless. If it is justified, then there must be some criterion that justifies it. But this is just what the dogmatist was supposed to have provided in the first place.

If the Pyrrhonist needed to make judgments in order to survive, he would be in trouble. In fact, however, there is a way of living that bypasses judgment. One can live quite nicely, according to Sextus, by following custom and accepting things as they appear. In doing so, one does not judge the correctness of anything but merely accepts appearances for what they are.[126]

Ancient Pyrrhonism is not strictly an epistemology, since it has no theory of knowledge and is content to undermine the dogmatic epistemologies of others, especially Stoicism and Epicureanism. Pyrrho himself was said to have had ethical motives for attacking dogmatists: being reconciled to not knowing anything, Pyrrho thought, induced serenity (*ataraxia*).[127]

9.3 Kinds of Skepticism

Much of modern epistemology aims to address one or another kind of skepticism. Skepticism is a challenge to our pre-philosophical conception of ourselves as cognitively successful or epistemic beings. Such challenges come in many varieties. One way in which these varieties differ, concerns the different kinds of cognitive success that they target: skepticism can challenge our claims to know, or our claims to believe justifiably, or our claims to have justification for believing, or our claims to have any good reasons for belief whatsoever. But another way in which these varieties differ is in whether the skepticism in question is fully general—targeting the possibility of enjoying any instance of the relevant cognitive success—or is selective—targeting the possibility of enjoying the relevant cognitive success concerning a particular subject

[126] Ibid.
[127] Ibid.

matter (e.g., the past, the minds of others, the world beyond our own consciousness), or concerning beliefs formed by a particular method (e.g., perception, memory, reasoning, etc.).

9.3.1 Extreme/Mild Skepticism

Epistemological skepticism can be classified as either mitigated/extreme or unmitigated/mild skepticism. Mitigated skepticism rejects strong or strict knowledge claims but does approve weaker ones, which can be considered virtual knowledge, but only with regard to justified beliefs. Unmitigated skepticism rejects claims of both virtual and strong knowledge.[128] Characterizing knowledge as strong, weak, virtual or genuine can be determined differently depending on a person's viewpoint as well as their characterization of knowledge.[129]

9.3.2 Pyrrhonism

One of the oldest forms of epistemic skepticism can be found in Agrippa's trilemma (named after the Pyrrhonist philosopher Agrippa the Skeptic) which demonstrates that certainty cannot be achieved with regard to beliefs.[130] Pyrrhonism dates back to Pyrrho of Elis from the 4th century BCE, although most of what we know about Pyrrhonism today is from the surviving works of Sextus Empiricus.[131] Pyrrhonists claim that for any argument for a non-evident proposition, an equally convincing argument for a contradictory proposition can be produced. Pyrrhonists do not dogmatically deny the possibility of knowledge, but instead point out that beliefs about non-evident matters cannot be substantiated.

9.3.3 Cartesian Skepticism

The Cartesian evil demon problem, first raised by René Descartes, supposes that our sensory impressions may be controlled by some external power rather than the result of ordinary veridical perception. In such a scenario, nothing we sense would actually exist, but would instead be mere illusion. As a result, we would never be able to know anything about the world, since we would be systematically deceived about everything. The conclusion often drawn from evil demon skepticism is that even if we are not completely deceived, all of the information provided by our senses is still *compatible* with skeptical scenarios in which we are completely deceived, and that we must therefore either be able to exclude the possibility of deception or else must deny the possibility of *infallible* knowledge (that is, knowledge which is completely certain) beyond our immediate sensory impressions.[132] While the view that no beliefs are beyond doubt other than our immediate sensory impressions is often ascribed to Descartes, he in fact thought that we *can* exclude the possibility that we are systematically deceived, although his reasons for

[128] Stathis Psillos and Martin Curd, The Routledge companion to philosophy of science (London: Routledge, 2010), 133.
[129] Ibid.
[130] Cf. Richard Popkin, "Skepticism," In Edwards, Paul (ed.), *Encyclopedia of Philosophy Volume 7* (London: Macmillan, 1972), 449.
[131] Ibid.
[132] W. James, and G. Gunn, *Pragmatism and other Essays*, (New York: Penguin Books, 2000), 14.

thinking this are based on a highly contentious ontological argument for the existence of a benevolent God who would not allow such deception to occur.[133]

9.3.4 General Skepticism

General skepticism is motivated by reasoning from some apparently conflicting features of the kind of cognitive success in question. For instance, a general skeptic might claim that justification requires a regress of justifiers, but then argue that this regress of justifiers cannot be contained in any finite mind—and thus, the skeptic might conclude, no finite being can be justified in believing anything. Alternatively a general skeptic might claim that knowledge requires certainty, and that nobody can be certain of something unless there is nothing of which he could be even more certain—thus, the skeptic might conclude, we can know virtually nothing.[134]

9.3.5 Selective Skepticism

Selective skepticism, in contrast, is typically motivated by appeal to one or another skeptical hypothesis. A skeptical hypothesis is a hypothesis according to which the facts that you claim to know (whether these facts concern the past, or the mind of others, or the mind-independent world, or what have you) may, for all you can tell, be radically different from how they appear to you to be. Thus, a skeptical hypothesis is a hypothesis that distinguishes between the way things appear to you, on the one hand, and the way they really are, on the other; and this distinction is deployed in such a way as to pose a challenge to your cognitive success concerning the latter. Here are some examples of skeptical hypotheses:[135]

i. All the other humans around me are automata who simply act exactly as if they have thoughts and feelings.

ii. The whole universe was created no more than 5 minutes ago, replete with fake memories and other misleading evidence concerning a distant past.

iii. I am lying in my bed dreaming everything that I am aware of right now.

iv. I am a mere brain-in-a-vat (a BIV, for short) being electrochemically stimulated to have all these states of mind that I am now having.

Skeptics can make use of such hypotheses in constructing various arguments that challenge our pre-philosophical picture of ourselves as cognitively successful. Consider, for instance, the BIV hypothesis, and some ways in which this hypothesis can be employed in a skeptical argument.

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[133] Ibid.

[134] P. Unger, *Ignorance: A Case for Scepticism* (Oxford: Oxford University Press, 1975), 100.

[135] M. Steup, Ernest Sosa (eds.), *Contemporary Debates in Epistemology* (Malden, MA: Blackwell, 2005), 117.

Here is one way of doing so. According to the BIV hypothesis, the experiences you would have as a BIV and the experiences you have as a normal person are perfectly alike, indistinguishable, so to speak, "from the inside". Thus, although it appears to you as if you are a normally embodied human being, everything would appear exactly the same way to a BIV. Thus, the way things appear to you cannot provide you with knowledge that you are not a BIV. But if the way things appear to you cannot provide you with such knowledge, then nothing can give you such knowledge, and so you cannot know that you are not a BIV. Of course, you already know this much: if you are a BIV, then you do not have any hands. If you do not know that you are not a BIV, then you do not know that you are not in a situation in which you do not have any hands. But if you do not know that you are not in a situation in which you do not have any hands, then you do not know that you are not handless. And to not know that you are not handless is simply to not know that you have hands.[136] We can summarize this skeptical argument as follows:

9.4 The BIV-Knowledge Closure Argument

- (C1) I don't know that I'm not a BIV.
- (C2) If I don't know that I'm not a BIV, then I don't know that I have hands.
- Therefore: (C3) I don't know that I have hands.

As we have just seen, (C1) and (C2) are very plausible premises. It would seem, therefore, that the argument is sound. If it is, we must conclude we don't know we have hands. But surely that conclusion cannot be right: if it turns out that I don't know that I have hands, that must be because of something very peculiar about my cognitive relation to the issue of whether I have hands—*not* because of the completely anodyne considerations mentioned in the above argument. So we are confronted with a difficult challenge: The conclusion of the above argument seems plainly false, but on what grounds can we reject it?

Here are some other ways of using the BIV-knowledge closure argument hypothesis to generate a skeptical argument.

9.5 Responses to the Closure Argument

Next, we will examine various responses to this argument. According to the first, we can see that (C2) is false if we distinguish between relevant and irrelevant alternatives. An alternative to a proposition *p* is any proposition that is incompatible with *p*. Your having hands and your being a BIV are alternatives: if the former is true, the latter is false, and *vice versa*. According to the thought that motivates the second premise of the BIV argument, you know that you have hands only if you can discriminate between your actually having hands and the alternative of being a (handless) BIV. But, by hypothesis, you cannot discriminate between these. That is why you don't know that you have hands.

[136] Ibid.

In response to such reasoning, a relevant alternatives theorist would say that your inability to discriminate between these two is not an obstacle to your knowing that you have hands, and that is because your being a BIV is *not* a *relevant* alternative to your having hands. What would be a relevant alternative? This, for example: your arms ending in stumps rather than hands, or your having hooks instead of hands, or your having prosthetic hands. But these alternatives do not prevent you from knowing that you have hands—not because they are irrelevant, but rather because you can discriminate between these alternatives and your having hands. The relevant alternative theorist holds, therefore, that you do know that you have hands: you know it because you can discriminate it from relevant alternatives, like your having stumps rather than hands.

Thus, according to Relevant Alternatives theorists, you know that you have hands even though you don't know that you are not a BIV. There are two chief problems for this approach. The first is that denouncing the BIV alternative as irrelevant is *ad hoc* unless it is supplemented with a principled account of what makes one alternative relevant and another irrelevant. The second is that premise 2 is highly plausible. To deny it is to allow that the following conjunction can be true:

9.5.1 Abominable Conjunction: I know that I have hands but I do not know that I am not a (handless) BIV.

Many epistemologists would agree that this conjunction is indeed abominable because it blatantly violates the basic and extremely plausible intuition that you cannot know you have hands without knowing that you are not a BIV.

Next, let us consider a response to this "Closure Argument" according to which it is not the second but the first premise that must be rejected. G. E. Moore has pointed out that an argument succeeds only to the extent that its premises are more plausible than the conclusion.[137] So if we encounter an argument whose conclusion we find much more implausible than the denial of the premises, then we can turn the argument on its head. According to this approach, we can respond to the BIV argument as follows:

9.6 Counter BIV

- (~C3) I know that I have hands.
- (C2) If I don't know that I'm not a BIV, then I don't know that I have hands.
- Therefore: (~C1) I know that I am not a BIV.

Unless we are skeptics or opponents of closure, we would have to concede that this argument is sound. It is valid, and its premises are true. Yet few philosophers would agree that Counter BIV amounts to a satisfying response to the BIV argument. It fails to explain *how* one can know that one is not a BIV. The observation that the premises of the BIV argument are less plausible than the denial of its conclusion does not help us understand how such knowledge is possible. That is

[137] G.E. Moore, "Proof of an External World", *Proceedings of the British Academy*, (1959), 126.

why the Moorean response, unsupplemented with an account of how one can know that one is not a BIV, is widely thought to be an unsuccessful rebuttal of the Closure Argument.[138]

We have looked at two responses to BIV-Knowledge Closure Argument. The relevant alternatives response implausibly denies the second premise. The Moorean response denies the first premise without explaining how we could possibly have the knowledge that the first premise claims we don't have. Another prominent response, contextualism, avoids both of these objections.

According to the contextualist, the precise contribution that the verb "to know" makes to the truth-conditions of the sentences in which it occurs varies from one context to another: in contexts in which the BIV hypothesis is under discussion, an agent counts as "knowing" a fact only if he can satisfy some extremely high (typically unachievable) epistemic feat, and this is why (1) is true. But in contexts in which the BIV hypothesis is not under discussion, an agent can count as "knowing" a fact even if his epistemic position vis-à-vis that fact is much more modest, and this is why (3), taken in isolation, appears false.

The contextualist literature has grown vastly over the past two decades: different contextualists have different accounts of how features of context affect the meaning of some occurrence of the verb "to know", and each proposal has encountered specific challenges concerning the semantic mechanisms that it posits, and the extent to which it explains the whole range of facts about which epistemic claims are plausible under which conditions.[139]

9.7 The BIV-Justification Under-determination Argument

- (U1) The way things appear to me could be equally well explained by the BIV-knowledge closure argument hypothesis as by my ordinary beliefs that things appear to me the way they do because I perceive mind-independent objects.
- (U2) If the way things appear to me could be equally well explained by either of two hypotheses, then I am not justified in believing one of those hypotheses rather than the other.
- Therefore: (U3) I am not justified in believing that I perceive mind-independent objects.

9.8 Responses to the Underdetermination Argument

Both the contextualist and the Moorean responses, as discussed in the previous section, leave out one important detail. Both say that one can know that one is not a BIV (though contextualists grant this point only for the sense of "know" operational in low-standards contexts), but neither view explains *how* one can know such a thing. If, by hypothesis, a BIV has all the same states of mind that I have—including all the same perceptual experiences—then how can I be justified in

[138] Ibid.

[139] Cf. S. Cohen, "Basic Knowledge and the Problem of Easy Knowledge", 310.

believing that I am not a BIV? And if I cannot be justified in believing that I am not a BIV, then how can I know that I am not?

Of course, the question about how I can be justified in believing that I am not a BIV is not especially hard for externalists to answer. From the point of view of an externalist, the fact that you and the BIV have the very same states of mind need not be at all relevant to the issue of whether you are justified in believing that you are not a BIV, since such justification is not fully determined by those mental states anyway.

The philosophers who have had to do considerable work to answer the question how I can be justified in believing that I am not a BIV have typically done this work in reply to Underdetermination Argument.

What might justify your belief that you are not a BIV? According to some philosophers, you are justified in believing that you are not a BIV because, for instance, you know perfectly well that current technology does not enable anyone to create a BIV. The proponent of the BIV hypothesis might regard this answer as no better than the Moorean response in the previous section: if you are allowed to appeal to (what you regard as your) knowledge of current technology to justify your belief that you are not a BIV, then why can't the Moorean equally well rely on his knowledge that he has hands to justify his belief that he's not a BIV?

Philosophers who accept this objection, but who do not want to ground your justification for believing that you are not a BIV in purely externalistic factors, may instead claim that your belief is justified by the fact that your own beliefs about the external world provide a better explanation of your sense experiences than does the BIV hypothesis.[140]

9.9 The BIV-Knowledge Defeasibility Argument

- (D1) If I know that I have hands, then I know that any evidence indicating that I don't have hands is misleading evidence.
- (D2) If I know that some evidence is misleading, then I know that I should disregard that evidence.
- Therefore: (D3) If I know that I have hands, then I know that I should disregard any evidence to the contrary.
- (D4) I do not know that I should disregard any evidence to the contrary.
- Therefore: (D5) I do not know that I have hands.

9.10 Responses to the Defeasibility Argument

The most influential reply to this argument is to say that, when I acquire evidence that I don't have hands, such evidence makes me cease to know that I have hands. On this view, when I acquire such evidence, the argument above is sound. But prior to my acquiring such evidence,

[140] B. Russell, *The Problems of Philosophy* (London: Williams & Norgate).

(4) is false, and so the argument above is not sound. Thus, the truth of (4), and consequently the soundness of this argument, depends on whether or not I have evidence that I don't have hands. If I do have such evidence, then the argument is sound, but of course it has no general skeptical implications: all it shows is that I cannot know some fact whenever I have evidence that the fact does not obtain.[141]

Plausible as this reply has seemed to most philosophers, it has been effectively challenged by Lasonen-Aarnio (2014b).[142] Her argument is this: presumably, it is possible to have *more than enough* evidence to know some fact. But if it is possible to have more than enough evidence to know some fact, it follows that one might still know that fact even if one acquires some slight evidence against it. And yet, it would be wrong to leave one's confidence entirely unaffected by the slight evidence that one acquires against that fact: though the evidence might be too slight to destroy one's knowledge, it cannot be too slight to diminish one's confidence even slightly. So long as one could continue to know a fact while rationally diminishing one's confidence in it in response to new evidence, the most popular reply to the defeasibility argument fails.

Other replies to the defeasibility argument include the denial of premise (2),[143] the denial of (4),[144] and the claim that the context-sensitivity of "knows" means that (4) is true only relative to contexts in which the possibility of future defeaters is relevant.[145] But neither of these replies has yet received widespread assent.

9.11 The BIV-Epistemic Possibility Argument

- P1) It is at least possible that I am a BIV.
- (P2) If it is possible that I am a BIV, then it is possible that I don't have hands.
- (P3) If it is possible that I don't have hands, then I don't know that I have hands.
- Therefore: (P4) I don't know that I have hands.

Obviously, this list of skeptical arguments could be extended by varying either (a) the skeptical hypothesis employed, or (b) the kind of cognitive success being challenged, or (c) the epistemological principles that link the hypothesis in (a) and the challenge in (b). Some of the resulting skeptical arguments are more plausible than others, and some are historically more prominent than others, but we cannot undertake a comprehensive survey here.

9.12 Responses to the Epistemic Possibility Argument

The most common reply to this argument is either to deny premise (1), or to deny that we are justified in believing that premise (1) is true. Most writers would deny premise (1), and would do

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[141] G. Harman, *Change in View*, 3.
[142] M. Lasonen-Aarnio, "Higher-Order Evidence and the Limits of Defeat", *Philosophy and Phenomenological Research*, 88(2), (2014a), 317.
[143] Ibid
[144] Ibid.
[145] R. Neta, "S Knows That P", *Noûs*, 36(4), (2002), 663.

so on whatever grounds they have for thinking that I can know that I am not a BIV: knowing that something is not the case excludes that thing's being epistemically possible for you.[146]

But a couple of influential writers—most notably Rogers Albritton and Thompson Clarke[147] — do not claim that premise (1) is false. Rather, they deny that we are justified in believing that premise (1) is true. According to these writers, what normally justifies us in believing that something or other is epistemically possible is that we can conceive of *discovering* that it is true. For instance, what justifies me in believing, say, that it is possible that Mohammad Buhari has resigned is that *I can clearly conceive of discovering* that he has resigned. But if I attempt to conceive of discovering that I am a BIV, it is not clear that I can succeed in this attempt. I may conceive of coming upon some evidence that I am a BIV—but, insofar as this evidence tells in favor of the hypothesis that I am a BIV, does it not also undermine its own credibility?

In such a case, is there anything at all that would count as "my evidence"? Without being able to answer this question in the affirmative, it is not clear that I can conceive of anything that would amount to discovering that I am a BIV. Of course, from the fact that I cannot conceive of anything that would amount to discovering that I am a BIV, it does not follow that I am not a BIV—and so it does not even follow that it is not possible that I am a BIV. But, whether or not it *is* possible that I am a BIV, I cannot be justified in thinking that it is. And that is to say that I cannot be justified in accepting premise (1) of this argument.

[146] See K. DeRose, "Epistemic Possibilities", *The Philosophical Review*, 100(4), (1991), 581–605, for an influential account of epistemic possibility that entails this view.

[147] R. Albritton, "On a Form of Skeptical Argument from Possibility", *Philosophical Issues*, (2011), 21; and T. Clarke, "The Legacy of Skepticism", *The Journal of Philosophy*, 69(20), (1972), 754–769.

CHAPTER TEN

THE HISTORY OF EPISTEMOLOGY: ANCIENT AND MEDIEVAL PHILOSOPHIES

10.1 Ancient Philosophy

The central focus of ancient Greek philosophy was the problem of motion. Many pre-Socratic philosophers thought that no logically coherent account of motion and change could be given. Although the problem was primarily a concern of metaphysics, not epistemology, it had the consequence that all major Greek philosophers held that knowledge must not itself change or be changeable in any respect. That requirement motivated Parmenides (flourished 5th century BCE), for example, to hold that thinking is identical with "being" (i.e., all objects of thought exist and are unchanging) and that it is impossible to think of "nonbeing" or "becoming" in any way.

10.1.1 Plato

Plato accepted the Parmenidean constraint that knowledge must be unchanging. One consequence of that view, as Plato pointed out in the *Theaetetus*, is that sense experience cannot be a source of knowledge, because the objects apprehended through it are subject to change.[148] To the extent that humans have knowledge, they attain it by transcending sense experience in order to discover unchanging objects through the exercise of reason.

The Platonic theory of knowledge thus contains two parts: first, an investigation into the nature of unchanging objects and, second, a discussion of how those objects can be known through reason. Of the many literary devices Plato used to illustrate his theory, the best known is the allegory of the cave, which appears in Book VII of the *Republic*. The allegory depicts people living in a cave, which represents the world of sense-experience. In the cave, people see only unreal objects, shadows, or images. Through a painful intellectual process, which involves the rejection and overcoming of the familiar sensible world, they begin an ascent out of the cave into reality. That process is the analogue of the exercise of reason, which allows one to apprehend unchanging objects and thus to acquire knowledge. The upward journey, which few people are able to complete, culminates in the direct vision of the Sun, which represents the source of knowledge.

Plato's investigation of unchanging objects begins with the observation that every faculty of the mind apprehends a unique set of objects: hearing apprehends sounds, sight apprehends visual images, and smell apprehends odours, and so on. Knowing also is a mental faculty, according to Plato, and therefore there must be a unique set of objects that it apprehends. Roughly speaking, those objects are the entities denoted by terms that can be used as predicates—e.g., "good,"

[148] J.M. Cooper & D.S. Hutchinson, *Plato's Complete Works* (London: Routledge, 1997).

"white," and "triangle."[149] To say "This is a triangle," for example, is to attribute a certain property, that of being a triangle, to a certain spatiotemporal object, such as a figure drawn in the sand. Plato is here distinguishing between specific triangles that are drawn, sketched, or painted and the common property they share, that of being triangular. Objects of the former kind, which he calls "particulars," are always located somewhere in space and time—i.e., in the world of appearance. The property they share is a "form" or "idea" (though the latter term is not used in any psychological sense). Unlike particulars, forms do not exist in space and time; moreover, they do not change. They are thus the objects that one apprehends when one has knowledge.

Reason is used to discover unchanging forms through the method of dialectic, which Plato inherited from his teacher Socrates. The method involves a process of question and answer designed to elicit a "real definition." By a real definition Plato means a set of necessary and sufficient conditions that exactly determine the entities to which a given concept applies. The entities to which the concept "being a brother" applies, for example, are determined by the concepts "being male" and "being a sibling": it is both necessary and sufficient for a person to be a brother that he be male and a sibling. Anyone who grasps these conditions understands precisely what being a brother is.

In the *Republic*, Plato applies the dialectical method to the concept of justice. In response to a proposal by Cephalus that "justice" means the same as "honesty in word and deed," Socrates points out that, under some conditions, it is just not to tell the truth or to repay debts.[150] Suppose one borrows a weapon from a person who later loses his sanity. If the person then demands his weapon back in order to kill someone who is innocent, it would be just to lie to him, stating that one no longer had the weapon. Therefore, "justice" cannot mean the same as "honesty in word and deed." By the technique of proposing one definition after another and subjecting each to possible counterexamples, Socrates attempts to discover a definition that cannot be refuted. In doing so he apprehends the form of justice, the common feature that all just things share.

Plato's search for definitions and, thereby, forms is a search for knowledge. But how should knowledge in general be defined? In the *Theaetetus* Plato argues that, at a minimum, knowledge involves true belief. No one can know what is false. People may believe that they know something that is in fact false. But in that case they do not really know; they only think they know. Knowledge is more than simply true belief. Suppose that someone has a dream in April that there will be an earthquake in September and, on the basis of that dream, forms the belief that there will be an earthquake in September. Suppose also that in fact there is an earthquake in September. The person has a true belief about the earthquake but not knowledge of it. What the person lacks is a good reason to support that true belief. In a word, the person lacks justification. Using such arguments, Plato contends that knowledge is justified true belief.

[149] Ibid.
[150] Ibid.

Although there has been much disagreement about the nature of justification, the Platonic definition of knowledge was widely accepted until the mid-20th century, when the American philosopher Edmund L. Gettier produced a startling counterexample.[151] Suppose that Kathy knows Oscar very well. Kathy is walking across the mall, and Oscar is walking behind her, out of sight. In front of her, Kathy sees someone walking toward her who looks exactly like Oscar. Unbeknownst to her, however, it is Oscar's twin brother. Kathy forms the belief that Oscar is walking across the mall. Her belief is true, because Oscar is in fact walking across the mall (though she does not see him doing it). And her true belief seems to be justified, because the evidence she has for it is the same as the evidence she would have had if the person she had seen were really Oscar and not Oscar's twin. In other words, if her belief that Oscar is walking across the mall is justified when the person she sees is Oscar, then it also must be justified when the person she sees is Oscar's twin, because in both cases the evidence—the sight of an Oscar-like figure walking across the mall—is the same. Nonetheless, Kathy does not know that Oscar is walking across the mall. According to Gettier, the problem is that Kathy's belief is not causally connected to its object (Oscar) in the right way.

10.1.2 Aristotle

In the *Posterior Analytics*, Aristotle (384–322 BCE) claims that each science consists of a set of first principles, which are necessarily true and knowable directly, and a set of truths, which are both logically derivable from and causally explained by the first principles.[152] The demonstration of a scientific truth is accomplished by means of a series of syllogisms—a form of argument invented by Aristotle—in which the premises of each syllogism in the series are justified as the conclusions of earlier syllogisms. In each syllogism, the premises not only logically necessitate the conclusion (that is., the truth of the premises makes it logically impossible for the conclusion to be false) but causally explain it as well. Thus, in the syllogism: All stars are distant objects. All distant objects twinkle; Therefore, all stars twinkle, the fact that stars twinkle is explained by the fact that all distant objects twinkle and the fact that stars are distant objects. The premises of the first syllogism in the series are first principles, which do not require demonstration, and the conclusion of the final syllogism is the scientific truth in question.

In an enigmatic passage, Aristotle claims that "actual knowledge is identical with its object."[153] By that he seems to mean something like the following. When people learn something, they "acquire" it in some sense. What they acquire must be either different from the thing they know or identical with it. If it is different, then there is a discrepancy between what they have in mind and the object of their knowledge. But such a discrepancy seems to be incompatible with the

[151]Edmund Gettier, "Is Justified True Belief Knowledge?" *Analysis, 23(6)*, 1963.
[152] https://www.britannica.com/topic/posterior-analytics
[153] Ibid.

existence of knowledge, for knowledge, which must be true and accurate, cannot deviate from its object in any way. One cannot know that blue is a colour, for example, if the object of that knowledge is something other than that blue is a colour. That idea, that knowledge is identical with its object, is dimly reflected in the modern formula for expressing one of the necessary conditions of knowledge: S knows that *p* only if it is true that *p*.

To assert that knowledge and its object must be identical raises a question: In what way is knowledge "in" a person? Suppose that Smith knows what dogs are, that is, he knows what it is to be a dog. Then, in some sense, dogs, or being a dog, must be in the mind of Smith. But how can that be? Aristotle derives his answer from his general theory of reality.[154] According to him, all (terrestrial) substances are composed of two principles: form and matter. All dogs, for example, consist of a form—the form of being a dog—and matter, which is the stuff out of which they are made. The form of an object makes it the kind of thing it is. Matter, on the other hand, is literally unintelligible. Consequently, what is in the knower when he knows what dogs are is just the form of being a dog.

In his sketchy account of the process of thinking in *De anima* (*On the Soul*), Aristotle says that the intellect, like everything else, must have two parts: something analogous to matter and something analogous to form.[155] The first is the passive intellect, the second the active intellect, of which Aristotle speaks tersely. "Intellect in this sense is separable, impassible, unmixed, since it is in its essential nature activity. When intellect is set free from its present conditions, it appears as just what it is and nothing more: it alone is immortal and eternal, and without it nothing thinks."[156]

The foregoing part of Aristotle's views about knowledge is an extension of what he says about sensation. According to him, sensation occurs when the sense organ is stimulated by the sense object, typically through some medium, such as light for vision and air for hearing. That stimulation causes a "sensible species" to be generated in the sense organ itself. The "species" is some sort of representation of the object sensed. As Aristotle describes the process, the sense organ receives "the form of sensible objects without the matter, just as the wax receives the impression of the signet-ring without the iron or the gold."[157] After the death of Aristotle, the next major thing in the history of epistemology was the rise of skepticism, of which we have already devoted a chapter.

10.1.3 St. Augustine

[154] Ibid.
[155] https://www.britannica.com/topic/on-the-soul-by-aristotle/
[156] Ibid.
[157] Ibid.

St. Augustine of Hippo (354–430) claimed that human knowledge would be impossible if God did not "illumine" the human mind and thereby allow it to see, grasp, or understand ideas.[158] Ideas as Augustine construed them are—like Plato's—timeless, immutable, and accessible only to the mind. They are indeed in some mysterious way a part of God and seen in God. Illumination, the other element of the theory, was for Augustine and his many followers, at least through the 14th century, a technical notion, built upon a visual metaphor. According to that view, the human mind is like an eye that can see when and only when God, the source of light, illumines it. Varying his metaphor, Augustine sometimes says that the human mind "participates" in God and even, that Christ illumines the mind by dwelling in it.[159] It is important to emphasize that Augustine's theory of illumination concerns all knowledge, not specifically mystical or spiritual knowledge.

Before he articulated the theory in his mature years, soon after his conversion to Christianity, Augustine was concerned to refute the Skepticism of the Academy. In *Against the Academicians* (386) he claimed that, if nothing else, humans know disjunctive tautologies such as "Either there is one world or there is not one world" and "Either the world is finite or it is infinite." Humans also know many propositions that begin with the phrase "It appears to me that," such as "It appears to me that what I perceive is made up of earth and sky, or what appears to be earth and sky." Furthermore, humans know logical (or what Augustine calls "dialectical") propositions—for example, "If there are four elements in the world, there are not five," "If there is one sun, there are not two," "One and the same soul cannot die and still be immortal," and "Man cannot at the same time be happy and unhappy."[160]

Many other refutations of Skepticism occur in Augustine's later works, notably *On the Free Choice of the Will* (389–395), *On the Trinity* (399/400–416/421), and *The City of God* (413–426/427). In the last, Augustine proposes other examples of things about which people can be absolutely certain. Again in explicit refutation of the Skeptics of the Academy, he argues that if a person is deceived, then it is certain that he exists. Expressing the point in the first person, as René Descartes (1596–1650) did some 1,200 years later, Augustine says, "If I am deceived, then I exist" (*Si fallor*, *sum*).[161] A variation on that line of reasoning appears in *On the Trinity*, in which he argues that if he is deceived, he is at least certain that he is alive.

Augustine also points out that since he knows, he knows that he knows, and he notes that this can be reiterated an infinite number of times: if I know that I know that I am alive, then I know that I know that I know that I am alive. In 20th-century epistemic logic, that thesis was codified as the

[158] https://www.britannica.com/topic/biography/saint-augustine/
[159] Ibid.
[160] Augustine, *Against the Academicians*, Denis J. Kavanachi (tran.), (New York: Image Books, 1943), bk.1, c.20, no.43.
[161] St. Augustine, *D Civitat Dei*, bk.xi.

axiom "If A knows that *p*, then A knows that A knows that *p*." In *The City of God*, Augustine claims that he knows that he loves: "For neither am I deceived in this, that I love, since in those things which I love I am not deceived."[162] With Skepticism thus refuted, Augustine simply denies that he has ever been able to doubt what he has learned through his sensations or even through the testimony of most people.

One thousand years passed before Skepticism recovered from Augustine's criticisms, but then it arose like the phoenix of Egyptian mythology. Meanwhile, Augustine's Platonic epistemology dominated the Middle Ages until the mid-13th century, when St. Albertus Magnus (1200–80) and his student St. Thomas Aquinas (1224/25–1274) developed an alternative to Augustinian illuminationism.

10.2 Medieval philosophy

10.2.1 St. Anselm of Canterbury

The phrase that St. Anselm of Canterbury (*c.* 1033–1109) used to describe his philosophy—namely, "faith seeking reason" (*fides quaerens intellectum*)—well characterizes medieval philosophy as a whole. All the great medieval philosophers—Christian, Jewish, and Islamic alike—were also theologians. Virtually every object of interest was related to their belief in God, and virtually every solution to every problem, including the problem of knowledge, contained God as an essential part. Indeed, Anselm himself equated truth and intelligibility with God. As he noted at the beginning of his *Proslogion* (1077–78), however, there is a tension between the view that God is truth and intelligibility and the fact that humans have no perception of God. How can there be knowledge of God, he asks, when all knowledge comes through the senses and God, being immaterial, cannot be sensed? His answer is to distinguish between knowing something by being acquainted with it through sensation and knowing something through a description. Knowledge by description is possible using concepts formed on the basis of sensation. Thus, all knowledge of God depends upon the description that he is "the thing than which a greater cannot be conceived."[163] From that premise Anselm infers, in his ontological argument for the existence of God, that humans can know that there exists a God that is all-powerful, all-knowing, all-just, all-merciful, and immaterial. Eight hundred years later the British philosopher Bertrand Russell would develop an epistemological theory based on a similar distinction between knowledge by acquaintance and knowledge by description,[164] though he would have vigorously denied that the distinction could be used to show that God exists.

[162] Ibid., bk.xiii.
[163] Ibid.
[164] https://www.britannica.com/biography/betrand-russell/

10.2.2 St. Thomas Aquinas

With the translation into Latin of Aristotle's *On the Soul* in the early 13th century, the Platonic and Augustinian epistemology that dominated the early Middle Ages was gradually displaced. Following Aristotle, Aquinas recognized different kinds of knowledge. Sensory knowledge arises from sensing particular things. Because it has individual things as its object and is shared with brute animals, however, sensory knowledge is a lower form of awareness than scientific knowledge, which is characterized by generality.[165] To say that scientific knowledge is characteristically general is not to diminish the importance of specificity: scientific knowledge also should be rich in detail, and God's knowledge is the most detailed of all. The detail, however, must be essential to the kind of thing being studied and not peculiar to certain instances of it. Aquinas thought that, though the highest knowledge humans can possess is knowledge of God, knowledge of physical objects is better suited to human capabilities.[166] Only that kind of knowledge will be considered here.

Aquinas's discussion of knowledge in the *Summa theologiae* is an elaboration on the thought of Aristotle. Aquinas claims that knowledge is obtained when the active intellect abstracts a concept from an image received from the senses. In one account of that process, abstraction is the act of isolating from an image of a particular object the elements that are essential to its being an object of that kind. From the image of a dog, for example, the intellect abstracts the ideas of being alive, being capable of reproduction and movement, and whatever else might be essential to being a dog. Those ideas are distinguished from ideas of properties that are peculiar to particular dogs, such as the property of being owned by Smith or the property of weighing 20 pounds.

As stated earlier, Aristotle typically spoke of the form of an object as being in the mind or intellect of the knower and the matter as being outside it. Although it was necessary for Aristotle to say something like that in order to escape the absurdity of holding that material objects exist in the mind exactly as they do in the physical world, there is something unsatisfying about it. Physical things contain matter as an essential element, and, if their matter is no part of what is known, then it seems that human knowledge is incomplete. In order to counter that worry, Aquinas revised Aristotle's theory to say that not only the form but also the "species" of an object is in the intellect.[167] A species is a combination of form and something like a general idea of matter, which Aquinas called "common matter." Common matter is contrasted with "individuated matter," which is the stuff that constitutes the physical bulk of an object.

[165] https://www.britannica.com/biography/saint-thomas-aquinas/
[166] Ibid.
[167] Ibid.

One objection to the theory is that it seems to follow from it that the objects of human knowledge are ideas rather than things. That is, if knowing a thing consists of having its form and species in one's intellect, then it appears that the form and species, not the thing, is what is known. It might seem, then, that Aquinas's view is a type of idealism.

Aquinas anticipated that kind of criticism in a number of ways. Because it includes the idea of matter, the species of an object seems more like the object itself than does an immaterial Aristotelian form. Moreover, for Aquinas science does not aim at knowing any particular object but rather at knowing what is common to all objects of a certain kind.[168] In that respect, Aquinas's views are similar to those of modern scientists. For example, the particular billiard ball that Smith drops from his window is of no direct concern to physics. What physicists are interested in are the laws that govern the behaviour of any falling object.
As assuaging as such considerations might be, they do not blunt the main force of the objection. In order to meet it, Aquinas introduced a distinction between what is known and that by which what is known is known. To specify what is known—say, an individual dog—is to specify the object of knowledge. To specify that by which what is known is known—say, the image or the species of a dog—is to specify the apparatus of knowledge. Thus, the species of a thing that is known is not itself an object of knowledge, though it can become an object of knowledge by being reflected upon.

10.2.3 John Duns Scotus

Although he accepted some aspects of Aristotelian abstractionism, John Duns Scotus (*c.* 1266–1308) did not base his account of human knowledge on that alone. According to him, there are four classes of things that can be known with certainty.[169] First, there are things that are knowable *simpliciter*, including true identity statements such as "Cicero is Tully" and propositions, later called analytic, such as "Man is rational." Duns Scotus claimed that such truths "coincide" with that which makes them true. One consequence of his view is that the negation of a simple truth is always inconsistent, even if it is not explicitly contradictory. The negation of "The whole is greater than any proper part," for example, is not explicitly contradictory, as is "Snow is white and snow is not white." Nevertheless, it is inconsistent, because there is no possible situation in which it is true.

The second class consists of things that are known through experience, where "experience" is understood in an Aristotelian sense that implies numerous encounters. The knowledge afforded by experience is inductive, grounded in the principle that "whatever occurs in a great many

[168] Ibid.
[169] https://www.britannica.com/biography/blessed-john-duns-scotus/

instances by a cause that is not free is the natural effect of that cause." It is important to note that Duns Scotus's confidence in induction did not survive the Middle Ages. Nicholas of Autrecourt (1300–50), whose views anticipated the radical skepticism of the Scottish Enlightenment philosopher David Hume, argued at length that no amount of observed correlation between two types of events is sufficient to establish a necessary causal connection between them and, thus, that inferences based on causal assumptions are never rationally justified.

The third class consists of things that directly concern one's own actions. Humans who are awake, for example, know immediately and with certainty—and not through any inference—that they are awake. Similarly, they know with certainty that they think and that they see and hear and have other sense experiences. Even if a sense experience is caused by a defective sense organ, it remains true that one is directly aware of the content of the sensation. When one has the sensation of seeing a round object, for example, one is directly aware of the roundness even if the thing one is seeing is not really round.
Finally, the fourth class contains things that are knowable through the human senses. Apparently unconcerned by the threat of skepticism, Duns Scotus maintained that sensation affords knowledge of the heavens, the earth, the sea, and all the things that are in them.

Duns Scotus's most important contribution to epistemology is his distinction between "intuitive" and "abstractive" cognition.[170] Intuitive cognition is the immediate and indubitable awareness of the existence of a thing. It is knowledge "precisely of a present object [known] as being present and of an existent object [known] as being existent." If a person sees Socrates before him, then, according to Duns Scotus, he has intuitive knowledge of the proposition that Socrates exists and of the proposition that Socrates is the cause of that knowledge. Abstractive cognition, in contrast, is knowledge about a thing that is abstracted from, or logically independent of, that thing's actual existence or nonexistence.

10.2.4 William of Ockham

Several parts of Duns Scotus's account are vulnerable to skeptical challenges, for instance, his endorsement of the certainty of knowledge based on sensation and his claim that intuitive knowledge of an object guarantees its existence. William of Ockham (*c.* 1285–1349?) radically revised Duns Scotus's theory of intuitive knowledge. Unlike Duns Scotus, Ockham did not require the object of intuitive knowledge to exist; nor did he hold that intuitive knowledge must be caused by its object. To the question "What is the distinction between intuitive and abstractive knowledge?," Ockham answered that they are simply different.[171] His answer notwithstanding, it is characteristic of intuitive knowledge, according to Ockham, that it is unmediated. There is no gap between the knower and the known that might undermine certainty: "I say that the thing

[170] Ibid.
[171] A.H. Armsstrong. *An Introduction to Ancient Philosophy* (Methuen: London University, 1965), 33.

itself is known immediately without any medium between itself and the act by which it is seen or apprehended."[172]

According to Ockham, there are two kinds of intuitive knowledge: natural and supernatural.[173] In cases of natural intuitive knowledge, the object exists, the knower judges that the object exists, and the object causes the knowledge. In cases of supernatural intuitive knowledge, the object does not exist, the knower judges that the object does not exist, and God is the cause of the knowledge.
Ockham recognized that God might cause one to think that one has intuitive knowledge of an existent object when in fact there is no such object, but this would be a case of false belief, he contends, not intuitive knowledge. Unfortunately, by acknowledging that there is no way to distinguish between genuine intuitive knowledge and divine counterfeits, Ockham effectively conceded the issue to the skeptics.[174]

Later medieval philosophy followed a fairly straight path toward skepticism. John of Mirecourt (flourished 14th century) was censured by the University of Paris in 1347 for maintaining, among other things, that external reality cannot be known with certainty because God can cause illusions to seem real.[175] A year earlier Nicholas of Autrecourt was condemned by Pope Clement VI for holding that one can have certain knowledge only of the logical principles of identity and contradiction and the immediate reports of sensation.[176] As noted above, he denied that causal relations exist; he also denied the reality of substance. He credited those errors, along with many others, to Aristotle, about whom he said, "In all his natural philosophy and metaphysics, Aristotle had hardly reached two evidently certain conclusions, perhaps not even a single one."[177] By that time the link between skepticism and criticism of Aristotle had become fairly strong. In *On My Ignorance and That of Many Others* (1367), for example, the Italian poet Petrarch (1304–74) cited Aristotle as "the most famous" of those who do not have knowledge.[178]

[172] Ibid.
[173] Ibid, 34.
[174] Ibid.51-56.
[175] https://www.britannica.com/biography/john-of-mirecourt/
[176]A.H. Armsstrong. *An Introduction to Ancient Philosophy*, op.cit.
[177] Ibid.
[178] https://www.britannica.com/biography/petrarch/

CHAPTER ELEVEN
THE HISTORY OF EPISTEMOLOGY: MODERN PHILOSOPHY

11.1 The Rise of Modern Epistemology

For most of the middle Ages there was no distinction between theology and science (*scientia*). Science was knowledge that was deduced from self-evident principles, and theology was knowledge that received its principles from God, the source of all principles. By the 14th century, however, scientific and theological thinking began to diverge. Roughly speaking, theologians began to argue that human knowledge was narrowly circumscribed. The omnipotence of God was often invoked in order to undercut the pretensions of human reason, and in place of rationalism in theology they promoted a kind of fideism (i.e., a philosophy based entirely on faith).[179]

The Italian theologian Gregory of Rimini (died 1358) exemplified the development. Inspired by Ockham, Gregory argued that, whereas science concerns what is accessible to humans through natural means, that is, through sensation and intelligence, theology deals with what is accessible only in a supernatural way.[180] Thus, theology is not scientific. The role of theology is to explain the meaning of the Bible and the articles of faith and to deduce conclusions from them. Since the credibility of the Bible rests upon belief in divine revelation, theology lacks a rational foundation. Furthermore, since there is neither self-evident knowledge of God nor any natural experience of him, humans can have only an abstract understanding of what he is.

Ockham and Gregory did not intend their views to undermine theology. To the contrary, for them theology is in a sense more certain than science, because it is built upon principles that are guaranteed to be true by God, whereas the principles of science must be as fallible as their human creators. Unfortunately for theology, however, the prestige of science increased in the 16th century and skyrocketed in the 17th and 18th centuries. Modern thinkers preferred to reach their own conclusions by using reason and experience even if ultimately those conclusions did not have the authority of God to support them. As theologians lost confidence in reason, other thinkers, who had little or no commitment to Aristotelian thought, became its champions, thus furthering the development of modern science.

11.2 Faith and reason

Although modern philosophers as a group are usually thought to be purely secular thinkers, in fact nothing could be further from the truth. From the early 17th century until the middle of the 18th century, all the great philosophers incorporated substantial religious elements into their

[179] https://www.britannica.com/topic/philosophy/
[180] https://www.britannica.com/biography/gregory-of-rimini/

work. In his *Meditations* (1641), for example, René Descartes offered two distinct proofs of the existence of God and asserted that no one who does not have a rationally well-founded belief in God can have knowledge in the proper sense of the term.[181] Benedict de Spinoza (1632–77) began his *Ethics* (1677) with a proof of God's existence and then discussed at length its implications for understanding all reality. And George Berkeley (1685–1753) explained the apparent stability of the sensible world by appealing to God's constant thought of it.

Among the reasons modern philosophers are mistakenly thought to be primarily secular thinkers is that many of their epistemological principles, including some that were designed to defend religion, were later interpreted as subverting the rationality of religious belief. The views of Thomas Hobbes (1588–1679) might briefly be considered in that connection. In contrast to the standard view of the Middle Ages that propositions of faith are rational, Hobbes argued that such propositions belong not to the intellect but to the will. The significance of religious propositions, in other words, lies not in what they say but in how they are used. To profess a religious proposition is not to assert a factual claim about the world, which may then be supported or refuted with reasons, but merely to give praise and honour to God and to obey the commands of lawful religious authorities. Indeed, one does not even need to understand the meanings of the words in the proposition in order for this function to be fulfilled; simply mouthing them would be sufficient.[182]

In *An Essay Concerning Human Understanding* (1690), John Locke further eroded the intellectual status of religious propositions by making them subordinate to reason in several respects.[183] First, reason can restrict the possible content of propositions allegedly revealed by God; in particular, no proposition of faith can be a contradiction. Furthermore, because no revelation can contain an idea not derived from sense experience, one should not believe St. Paul when he speaks of experiencing things as "eye has not seen, nor ear heard, nor has it entered into the heart of man to conceive." Another respect in which reason takes precedence over faith is that knowledge based on immediate sense experience (what Locke called "intuitive knowledge") is always more certain than any alleged revelation. Thus, people who see that someone is dead cannot have it revealed to them that that person is at that moment alive. Rational proofs in mathematics and science also cannot be controverted by divine revelation. The interior angles of a rectangle equal 360°, and no alleged revelation to the contrary is credible. In short, wrote Locke, "Nothing that is contrary to, and inconsistent with, the clear and self-evident dictates of reason, has a right to be urged or assented to as a matter of faith."[184]

[181] A.H. Armsstrong. *An Introduction to Ancient Philosophy*, op.cit.
[182] Ibid.
[183] Ibid.
[184] Ibid.

What space, then, does faith occupy in the mansion of human beliefs? According to Locke, it shares a room with probable truths, which are propositions of which reason cannot be certain.[185] There are two types of probable truth: that which concerns observable matters of fact and that which goes "beyond the discovery of our sense."[186] Religious propositions can belong to either category, as can empirical and scientific propositions. Thus, the propositions "Caesar crossed the Rubicon" and "Jesus walked on water" belong to the first category, because they make claims about events that would be observable if they occurred. On the other hand, propositions like "Heat is caused by the friction of imperceptibly small bodies" and "Angels exist" belong to the second category, because they concern entities that by definition cannot be objects of sense experience.

Although it might seem that Locke's mixing of religious and scientific claims helped to secure a place for the former, in fact it did not, for Locke also held that "reason must judge" whether or not something is a revelation and, more generally, that "*reason must be our last judge and guide in everything.*"[187] Although that maxim was intended to reconcile reason and revelation—indeed, Locke called reason "natural revelation" and revelation "*natural reason enlarged* by a new set of discoveries communicated by God"[188]—over the course of the subsequent 200 years, reason repeatedly judged that alleged revelations had no scientific or intellectual standing.

Despite the strong religious elements in the thought of modern philosophers, especially those writing before the middle of the 18th century, the vast majority of contemporary epistemologists have been interested only in the purely secular aspects of their work. Accordingly, those aspects will predominate in the following discussion.

11.3 Epistemology and modern science

The Polish astronomer Nicolaus Copernicus (1473–1543) argued in *On the Revolutions of the Celestial Spheres* (1543) that Earth revolves around the Sun.[189] His theory was epistemologically shocking for at least two reasons. First, it directly contravened the way in which humans experienced their relation to the Sun, and in doing so it made ordinary nonscientific reasoning about the world seem unreliable—indeed, like a kind of superstition. Second, it contradicted the account presented in several books of the Bible, most importantly the story in Genesis of the structure of the cosmos, according to which Earth is at the centre of

[185] Ibid.
[186] Ibid.
[187] https://www.britannica.com/biography/john-locke/
[188] Ibid.
[189] Nicolaus Copernicus, *On the Revolution of the Celestial Spheres* (1943), https://www.environmentandsociety.org.

creation.[190]If Copernicus were right, then the Bible could no longer be treated as a reliable source of scientific knowledge.
Many of the discoveries of the Italian astronomer Galileo Galilei (1564–1642) were equally unsettling.[191] His telescope seemed to reveal that unaided human vision gives false, or at least seriously incomplete, information about the nature of celestial bodies. In addition, his mathematical descriptions of physical phenomena indicated that much of sense experience of these phenomena contributes nothing to knowledge of them.

Another counterintuitive theory of Galileo was his distinction between the "primary" and the "secondary" qualities of an object. Whereas primary qualities—such as figure, quantity, and motion—are genuine properties of things and are knowable by mathematics, secondary qualities—such as colour, odour, taste, and sound—exist only in human consciousness and are not part of the objects to which they are normally attributed.[192]

11.4 René Descartes

Both the rise of modern science and the rediscovery of skepticism were important influences on René Descartes. Although he believed that certain knowledge was possible and that modern science would one day enable humans to become the masters of nature, he also thought that skepticism presented a legitimate challenge that needed an answer, one that only he could provide.

The challenge of skepticism, as Descartes saw it, is vividly described in his *Meditations* (1641). He considered the possibility that an "evil genius" with extraordinary powers has deceived him to such an extent that all his beliefs are false. But it is not possible, Descartes contended, that all his beliefs are false, for if he has false beliefs, he is thinking, and if he is thinking, then he exists. Therefore, his belief that he exists cannot be false, as long as he is thinking. This line of argument is summarized in the formula *cogito, ergo sum* ("I think, therefore I am").[193]

Descartes distinguished two sources of knowledge: intuition and deduction.[194] Intuition is an unmediated mental "seeing," or direct apprehension. Descartes's intuition of his own thinking guarantees that his belief that he is thinking is true. Although his formula might suggest that his belief that he exists is guaranteed by deduction rather than intuition (because it contains the term *therefore*), in the *Objections and Replies* (1642) he stated explicitly that the certainty of this belief also is based upon intuition.

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[190]B.P. Beckwith,*Religion, Philosophy and Science: An Introduction to Logical Positivism* (New York: Philosophical library, 1957).
[191]https://www.britannica.com/biography/john-locke/galileo-galilei/
[192] Ibid.
[193]https://www.britannica.com/biography/ree-descartes/
[194] Ibid.

If one could know only that one thinks and that one exists, human knowledge would be depressingly meager. Accordingly, Descartes attempted to broaden the limits of knowledge by proving to his own satisfaction that God exists, that the standard for knowing something is having a "clear and distinct" idea of it. That mind is more easily known than body, that the essence of matter is extension, and, finally, that most of his former beliefs are true.

Unfortunately for Descartes, few people were convinced by these arguments. One major problem with them has come to be known as the "Cartesian circle."[195] Descartes's argument to show that his knowledge extends beyond his own existence depends upon the claim that whatever he perceives "clearly and distinctly" is true. That claim in turn is supported by his proof of the existence of God, together with the assertion that God, because he is not a deceiver, would not cause Descartes to be deceived in what he clearly and distinctly perceives. But because the criterion of clear and distinct perception presupposes the existence of God, Descartes cannot rely upon it in order to guarantee that he has not been deceived (i.e., that he did not make a mistake) in the course of proving that God exists. Therefore, he does not know that his proof is cogent. But if he does not know that, then he cannot use the criterion of clear and distinct perception to show that he knows more than that he exists.

11.5 John Locke

Whereas rationalist philosophers such as Descartes held that the ultimate source of human knowledge is reason, empiricists such as John Locke argued that the source is experience (*see* Rationalism and empiricism).[196] Rationalist accounts of knowledge also typically involved the claim that at least some kinds of ideas are "innate," or present in the mind at (or even before) birth. For philosophers such as Descartes and Gottfried Wilhelm Leibniz (1646–1716), the hypothesis of innateness is required in order to explain how humans come to have ideas of certain kinds.[197] Such ideas include not only mathematical concepts such as numbers, which appear not to be derived from sense experience, but also, according to some thinkers, certain general metaphysical principles, such as "every event has a cause."

Locke claimed that that line of argument has no force. He held that all ideas (except those that are "trifling") can be explained in terms of experience.[198] Instead of attacking the doctrine of innate ideas directly, however, his strategy was to refute it by showing that it is explanatorily otiose and hence dispensable.

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[195]https://www.britannica.com/topic/cartesian-circle/

[196]https://www.britannica.com/topic/epistemology/

[197] H.C. Ezebuilo, Descartes, Leibniz and Spinoza: A Brief Survey of Rationalism, *AMAMIHE: Journal of Applied Philosophy*, 18(6), (2020, 106-110.

[198] H.C. Ezebuilo, Locke, Berkeley and Hume: A Brief Survey of Empiricism, *International Journal of Research in Education, Humanities and Commerce*, 1(2), (2020), 88.

There are two kinds of experience, according to Locke: observation of external objects—i.e., sensation—and observation of the internal operations of the mind.[199] Locke called the latter kind of experience, for which there is no natural word in English, "reflection." Some examples of reflection are perceiving, thinking, doubting, believing, reasoning, knowing, and willing.

As Locke used the term, a "simple idea" is anything that is an "immediate object of perception" (i.e., an object as it is perceived by the mind) or anything that the mind "perceives *in itself*" through reflection.[200] Simple ideas, whether they are ideas of perception or ideas of reflection, may be combined or repeated to produce "compound ideas," as when the compound idea of an apple is produced by bringing together simple ideas of a certain colour, texture, odour, and figure. Abstract ideas are created when "ideas taken from particular beings become general representatives of all of the same kind."

The "qualities" of an object are its powers to cause ideas in the mind. One consequence of that usage is that, in Locke's epistemology, words designating the sensible properties of objects are systematically ambiguous. The word *red*, for example, can mean either the idea of red in the mind or the quality in an object that causes that idea. Locke distinguished between primary and secondary qualities, as Galileo did. According to Locke, primary qualities, but not secondary qualities, are represented in the mind as they exist in the object itself.[201] The primary qualities of an object, in other words, resemble the ideas they cause in the mind. Examples of primary qualities include "solidity, extension, figure, motion, or rest, and number." Secondary qualities are configurations or arrangements of primary qualities that cause sensible ideas such as sounds, colours, odours, and tastes.[202] Thus, according to Locke's view, the phenomenal redness of a fire engine is not in the fire engine itself, but its phenomenal solidity is. Similarly, the phenomenal sweet odour of a rose is not in the rose itself, but its phenomenal extension is.

In Book IV of *An Essay Concerning Human Understanding* (1689), Locke defined knowledge as "the perception of the connexion of and agreement, or disagreement and repugnancy of any of our ideas."[203] Knowledge so defined admits of three degrees, according to Locke.[204] The first is what he called "intuitive knowledge," in which the mind "perceives the agreement or disagreement of two ideas immediately by themselves, without the intervention of any other." Although Locke's first examples of intuitive knowledge are analytic propositions such as "white is not black," "a circle is not a triangle," and "three are more than two," later he said that "the knowledge of our own being we have by intuition." Relying on the metaphor of light as Augustine and others had, Locke said of this knowledge that "the mind is presently filled with

[199] https://www.britannica.com/biography/john-locke/
[200] H.C. Ezebuilo, Locke, Berkeley and Hume, 87-91.
[201] Ibid.
[202] Ibid.
[203] https://www.britannica.com/topic/essay-concerning-human-understanding/
[204] Ibid.

the clear light of it. It is on this intuition that depends all the certainty and evidence of all our knowledge."

The second degree of knowledge obtains when "the mind perceives the agreement or disagreement of…ideas, but not immediately." In these cases, some mediating idea makes it possible to see the connection between two other ideas. In a demonstration (or proof), for example, the connection between any premise and the conclusion is mediated by other premises and by the laws of logic. Demonstrative knowledge, although certain, is not as certain as intuitive knowledge, according to Locke, because it requires effort and attention to go through the steps needed to recognize the certainty of the conclusion.

A third degree of knowledge, "sensitive knowledge," is roughly the same as what Duns Scotus called "intuitive cognition"—namely, the perception of "the particular existence of finite beings without us." Unlike intuitive cognition, however, Locke's sensitive knowledge is not the most certain kind of knowledge it is possible to have. For him, it is less certain than intuitive or demonstrative knowledge.

Next in certainty to knowledge is probability,[205] which Locke defined as the appearance of agreement or disagreement of ideas with each other. Like knowledge, probability admits of degrees, the highest of which attaches to propositions endorsed by the general consent of all people in all ages. Locke may have had in mind the virtually general consent of his contemporaries in the proposition that God exists, but he also explicitly mentioned beliefs about causal relations.

The next highest degree of probability belongs to propositions that hold not universally but for the most part, such as "people prefer their own private advantage to the public good."[206] This sort of proposition is typically derived from history. A still lower degree of probability attaches to claims about specific facts—for example, that a man named Julius Caesar lived a long time ago. Problems arise when testimonies conflict, as they often do, but there is no simple rule or set of rules that determines how one ought to resolve such controversies.

Probability can concern not only objects of possible sense experience, as most of the foregoing examples do, but also things that are outside the sensible realm, such as angels, devils, magnetism, and molecules.

11.6 George Berkeley

The next great figure in the development of empiricist epistemology was George Berkeley (1685–1753). In his major work, *A Treatise Concerning the Principles of Human*

[205] Ibid.
[206] Ibid.

Knowledge (1710), Berkeley asserted that nothing exists except ideas and spirits (minds or souls).[207] He distinguished three kinds of ideas: those that come from sense experience which corresponds to Locke's simple ideas of perception; those that come from "attending to the passions and operations of the mind" which corresponds to Locke's ideas of reflection; and those that come from compounding, dividing, or otherwise representing ideas which corresponds to Locke's compound ideas. By *spirit* Berkeley meant "one simple, undivided, active being." The activity of spirits consists of both understanding and willing: understanding is spirit perceiving ideas, and will is spirit producing ideas.

For Berkeley, ostensibly physical objects like tables and chairs are really nothing more than collections of sensible ideas.[208] Since no idea can exist outside a mind, it follows that tables and chairs, as well all the other furniture of the physical world, exist only insofar as they are in the mind of someone—i.e., only insofar as they are perceived. For any non-thinking being, *esse est percipi* **("to be is to be perceived"**). The clichéd question of whether a tree falling in an uninhabited forest makes a sound was inspired by Berkeley's philosophy, though he never considered it in those terms. He did, however, consider the implicit objection and gave various answers to it. He sometimes said that a table in an unperceived room would be perceived if someone were there. That conditional response, however, is inadequate. Granted that the table would exist if it were perceived, does it exist when it is not perceived? Berkeley's more pertinent answer was that even when no human is perceiving a table or other such object, God is, and it is God's thinking that keeps the otherwise unperceived object in existence.[209]

Although that doctrine initially strikes most people as strange, Berkeley claimed that he was merely describing the commonsense view of reality. To say that colours, sounds, trees, dogs, and tables are ideas is not to say that they do not really exist. It is merely to say what they really are. Moreover, to say that animals and pieces of furniture are ideas is not to say that they are diaphanous, gossamer, and evanescent. Opacity, density, and permanence are also ideas that partially constitute those objects.

Berkeley supported his main thesis with a syllogistic argument: physical things—such as trees, dogs, and houses—are things perceived by sense; things perceived by sense are ideas; therefore, physical things are ideas.[210] If one objects that the second premise of the syllogism is false—people sense things, not ideas—Berkeley would reply that there are no sensations without ideas and that it makes no sense to speak of some additional thing that ideas are supposed to represent or resemble. Unlike Locke, Berkeley did not believe that there is anything "behind" or

[207]https://www.britannica.com/biography/george-berkeley/
[208] H.C. Ezebuilo, Locke, Berkeley and Hume, 92.
[209] Ibid.
[210] Ibid.,94-95.

"underlying" ideas in a world external to the mind. Indeed, Berkeley claimed that no clear idea can be attached to that notion.

One consequence of Berkeley's view is that Locke's distinction between primary and secondary qualities is spurious. Extension, figure, motion, rest, and solidity are as much ideas as green, loud, and bitter are; there is nothing special about the former kind of idea. Furthermore, matter, as philosophers conceive it, does not exist. Indeed, it is contradictory, for matter is supposedly unsensed extension, figure, and motion, but since extension, figure, and motion are ideas, they must be sensed.

Berkeley's doctrine that things unperceived by human beings continue to exist in the thought of God was not novel. It was part of the traditional belief of Christian philosophers from Augustine through Aquinas and at least to Descartes that God not only creates all things but also keeps them in existence by thinking of them. According to that view, if God were ever to stop thinking of a creature, it would immediately be annihilated.

11.7 David Hume

Although Berkeley rejected the Lockean notions of primary and secondary qualities and matter, he retained Locke's belief in the existence of mind, substance, and causation as an unseen force or power in objects. David Hume, in contrast, rejected all these notions.

11.7.1 Kinds of Perception

Hume recognized two kinds of perception: "impressions" and "ideas."[211] Impressions are perceptions that the mind experiences with the "most force and violence," and ideas are the "faint images" of impressions. Hume considered this distinction so obvious that he demurred from explaining it at any length; as he indicated in a summary explication in *A Treatise of Human Nature* (1739–40), impressions are felt, and ideas are thought. Nevertheless, he conceded that sometimes sleep, fever, or madness can produce ideas that approximate to the force of impressions, and some impressions can approach the weakness of ideas. But such occasions are rare.

The distinction between impressions and ideas is problematic in a way that Hume did not notice. The impression (experience) of anger, for example, has an unmistakable quality and intensity. But the idea of anger is not the same as a "weaker" experience of anger. Thinking of anger no more guarantees being angry than thinking of happiness guarantees being happy. So there seems to be a difference between the impression of anger and the idea of anger that Hume's theory does not capture.

[211] H.C. Ezebuilo, Locke, Berkeley and Hume, 96.

All perceptions, whether impressions or ideas, can be either simple or complex.[212] Whereas simple perceptions are not subject to further separation or distinction, complex perceptions are. To return to an example mentioned above, the perception of an apple is complex, insofar as it consists of a combination of simple perceptions of a certain shape, colour, texture, and aroma. It is noteworthy that, according to Hume, for every simple impression there is a simple idea that corresponds to it and differs from it only in force and vivacity, and vice versa. Thus, corresponding to the impression of red is the idea of red. This correlation does not hold true in general for complex perceptions. Although there is a correspondence between the complex impression of an apple and the complex idea of an apple, there is no impression that corresponds to the idea of Pegasus or to the idea of a unicorn; these complex ideas do not have a correlate in reality. Similarly, there is no complex idea corresponding to the complex impression of, say, an extensive vista of the city of Rome.

Because the formation of every simple idea is always preceded by the experience of a corresponding simple impression, and because the experience of every simple impression is always followed by the formation of a corresponding simple idea, it follows, according to Hume, that simple impressions are the causes of their corresponding simple ideas.[213]

There are two kinds of impressions: those of sensation and those of reflection. Regarding the former, Hume was of the opinion that sensation "arises in the soul originally from unknown causes." Impressions of reflection arise from a complicated series of mental operations. First, one experiences impressions of heat or cold, thirst or hunger, pleasure or pain; second, one forms corresponding ideas of heat or cold, thirst or hunger, pleasure or pain; and third, one's reflection on these ideas produces impressions of "desire and aversion, hope and fear."

Because the faculty of imagination can divide and assemble disparate ideas at will, some explanation is needed for the fact that people tend to think in regular and predictable patterns. Hume said that the production of thoughts in the mind is guided by three principles:[214] resemblance, contiguity, and cause and effect. Thus, people who think of one idea are likely to think of another idea that resembles it; their thought is likely to run from red to pink to white or from dog to wolf to coyote. Concerning contiguity, people are inclined to think of things that are next to each other in space and time. Finally, and most importantly, people tend to create associations between ideas of things that are causally related. The ideas of fire and smoke, parent and child, and disease and death are connected in the mind for that reason.

[212] https://www.britannica.com/biography/david-hume/
[213] Ibid.
[214] Ibid.

Hume used the principle of resemblance for another purpose: to explain the nature of general ideas. He held that there are no abstract ideas, and he affirmed that all ideas are particular. Some of them, however, function as general ideas—i.e., ideas that represent many objects of a certain kind—because they incline the mind to think of other ideas that they resemble.

11.7.2 Relations of ideas and matters of fact

According to Hume, the mind is capable of apprehending two kinds of proposition or truth: those expressing "relations of ideas" and those expressing "matters of fact."[215] The former can be intuited—i.e., seen directly—or deduced from other propositions. That *a* is identical with *a*, that *b* resembles *c*, and that *d* is larger than *e* are examples of propositions that are intuited. The negations of true propositions expressing relations of ideas are contradictory. Because the propositions of arithmetic and algebra are exclusively about relations of ideas, according to Hume, those disciplines are more certain than others. In the *Treatise*, Hume said that geometry is not quite as certain as arithmetic and algebra, because its original principles derive from sensation, and about sensation there can never be absolute certainty. He revised his views later, however, and, in *An Enquiry Concerning Human Understanding* (1748), he put geometry on an equal footing with the other mathematical sciences.[216]

Unlike propositions about relations of ideas, propositions about matters of fact are known only through experience. By far the most important of such propositions are those that express or presuppose causal relations—e.g., "Fire causes heat" and "A moving billiard ball communicates its motion to any stationary ball it strikes." But how is it possible to know through experience that one kind of object or event causes another? What kind of experience would justify such a claim?

11.7.3 Cause and effect

Hume observed that the idea of causation contains three components: contiguity (i.e., near proximity) of time and place, temporal priority of the cause, and a more mysterious component, which he called "necessary connection."[217] In other words, when one says that *x* is a cause of *y*, one means that instances of *x* and instances of *y* are always near each other in time and space, that instances of *x* occur before instances of *y*, and that there is some connection between *x*'s and *y*'s that makes it necessary that an instance of *y* occurs if an instance of *x* does.

[215]https://www.britannica.com/topic/relation-logic-and-mathematics/
[216] D. Hume, *Enquiry Concerning Human Understanding and Concerning the Principles of Morals* (Oxford: Clarendon Press, 1975).
[217] H.C. Ezebuilo, Locke, Berkeley and Hume, 99.

It is easy to explain the origin in experience of the first two components of the idea of causation. In past experience, all events consisting of a moving billiard ball striking a stationary one were quickly followed by events consisting of the movement of the formerly stationary ball. In addition, the first sort of event always preceded the second and never the reverse. But whence the third component of the idea of causation, whereby one thinks that the striking of the stationary ball somehow necessitates that it will move? That necessity has never been seen or otherwise directly observed in past experience, as have the contiguity and temporal order of the striking and moving of billiard balls.

It is important to note that were it not for the idea of necessary connection, there would be no reason to believe that a currently observed cause will produce an unseen effect in the future or that a currently observed effect was produced by an unseen cause in the past, for the mere fact that past instances of the cause and the effect were contiguous and temporally ordered in a certain way does not logically imply that present and future instances will display the same relations. Such an inference could be justified only if one assumed a principle such as "instances, of which we have had no experience, must resemble those, of which we have had experience, and that the course of nature continues always uniformly the same." The problem with that principle is that it stands in need of justification, and the only possible justification is question-begging. That is, one could argue that present and future experience will resemble past experience, because in the past, present and future experience resembled past experience. But that argument clearly assumes what it sets out to prove.

Hume offered a "skeptical solution" of the problem of the origin of the idea of necessary connection. According to him, it arises from the feeling of "determination" that is created in the mind when it experiences the first member of a pair of events that it is long accustomed to experiencing together.[218] When the mind observes the moving billiard ball striking the stationary one, it is moved by force of habit and custom to form an idea of the movement of the stationary ball—i.e., to believe that the stationary ball will move. The feeling of being "carried along" in this process is the impression from which the idea of necessary connection is derived.

Hume's solution is "skeptical" in the sense that, though it accounts for the origins of the idea of necessary connection, it does not make the causal inferences any more rational than they were before. The solution explains why we are psychologically compelled to form beliefs about future effects and past causes, but it does not justify those beliefs logically. It remains true that our only evidence for these beliefs is our past experience of contiguity and temporal precedence. "All inferences from experience, therefore, are effects of custom, not of reasoning." Thus it is that custom, not reason, is the great guide of life.

[218] Ibid.

11.7.4 Substance

From the time of Plato, one of the most basic notions in philosophy has been "substance"—that whose existence does not depend upon anything else. For Locke, the substance of an object is the hidden "substratum" in which the object's properties inhere and on which they depend for their existence. One of the reasons for Hume's importance in the history of philosophy is that he rejected that notion. In keeping with his strict empiricism, he held that the idea of substance, if it answers to anything genuine, must arise from experience.[219] But what kind of experience can that be? By its proponents' own definition, substance is that which underlies an object's properties, including its sensible properties; it is therefore in principle unobservable. Hume concluded, "We have therefore no idea of substance, distinct from that of a collection of particular qualities, nor have we any other meaning when we either talk or reason concerning it."[220]

Furthermore, the things that earlier philosophers had assumed were substances are in fact "nothing but a collection of simple ideas, that are united by the imagination, and have a particular name assigned to them." Gold, to take Hume's example, is nothing but the collection of the ideas of yellow, malleable, fusible, and so on. Even the mind, or the "self," is only a "heap or collection of different perceptions united together by certain relations and supposed, though falsely, to be endowed with a perfect simplicity or identity."[221] That conclusion had important consequences for the problem of personal identity, to which Locke had devoted considerable attention, for if there is nothing to the mind but a collection of perceptions, then there is no self that perdures as the subject of those perceptions. Therefore, it does not make sense to speak of the subject of certain perceptions yesterday as the same self, or the same person, as the subject of certain perceptions today or in the future. There is no self or person there.

11.8 Immanuel Kant

Idealism is often defined as the view that everything that exists is mental. In other words, everything is either a mind or dependent for its existence on a mind. Immanuel Kant was not strictly an idealist according to that definition. His doctrine of "transcendental idealism" held that all theoretical (i.e., scientific) knowledge is a mixture of what is given in sense experience and what is contributed by the mind. The contributions of the mind are necessary conditions for having any sense experience at all. They include the spatial and temporal "forms" in which physical objects appear, as well as various extremely general features that together give the experience an intelligible structure. Those features are imposed when the mind, in the act of forming a judgment about experience, brings the content of experience under one of the "pure

[219] https://www.britannica.com/topic/substance-philosophy/
[220] Ibid.
[221] Ibid.

concepts of the understanding.[222] Those concepts are unity, plurality, and totality; reality, negation, and limitation; inherence and subsistence, causality and dependence, and community (or reciprocity); and possibility, existence, and necessity. Among the more noteworthy of the mind's contributions to experience is causality, which Hume asserted has no real existence.

His idealism notwithstanding, Kant also believed that there exists a world independent of the mind and completely unknowable by it.[223] That world consists of "things-in-themselves" (noumena), which do not exist in space and time and do not enter into causal relations. Because of his commitment to realism (minimal though it may have been), Kant was disturbed by Berkeley's uncompromising idealism, which amounted to a denial of the existence of the external world. Kant found that doctrine incredible and rejected "the absurd conclusion that there can be appearance without anything that appears."[224]

Because Kant's theory attributes to the mind many aspects of reality that earlier theories assumed are given in or derived from experience, it can be thought of as inverting the traditional relation in epistemology between the mind and the world. According to Kant, knowledge results not when the mind accommodates itself to the world but rather when the world conforms to the requirements of human sensibility and rationality. Kant compared his reorientation of epistemology to the Copernican revolution in astronomy, which placed the Sun rather than Earth at the centre of the universe.

According to Kant, the propositions that express human knowledge can be divided into three kinds:[225] (1) analytic a priori propositions, such as "All bachelors are unmarried" and "All squares have four sides," (2) synthetic a posteriori propositions, such as "The cat is on the mat" and "It is raining," and (3) what he called "synthetic a priori" propositions, such as "Every event has a cause." Although in the last kind of proposition the meaning of the predicate term is not contained in the meaning of the subject term, it is nevertheless possible to know the proposition independently of experience, because it expresses a condition imposed by the forms of sensibility. Nothing can be an object of experience unless it is experienced as having causes and effects. Kant stated that the main purpose of his doctrine of transcendental idealism was to show how such synthetic a priori propositions are possible.

Since human beings can experience the world only as a system that is bounded by space and time and completely determined by causal laws, it follows that they can have no theoretical (i.e., scientific) knowledge of anything that is inconsistent with such a realm or that by definition

[222] I. Kant, *Critique of Pure Reason* (New York: Anchor Books, 1966).
[223] Ibid.
[224] Ibid.
[225] Ibid.

exists independently of it—including God, human freedom, and the immortality of the soul. Nevertheless, belief in those ideas is justified, according to Kant, because each is a necessary condition of our conceiving of ourselves as moral agents.

11.8.1 A Summary of Kant's Epistemology

Immanuel Kant (1724-1804) sought to bridge, to synthesize, the rationalist and empiricist traditions in epistemology. He did so in response to the skepticism of David Hume, whom he said had "awaken him from his dogmatic slumbers." Kant agreed with the empiricists that concepts without perceptions are empty. Concepts/ideas alone cannot constitute knowledge. Innate ideas do not constitute knowledge. There must be experience(s) for there to be knowledge. However, Kant also agreed with the rationalists that perceptions without concepts are blind. Merely having experiences/perceptions also does not constitute knowledge. There must be some way in which the mind organizes/structures experience for there to be knowledge.

Kant also held that it is true that all knowledge begins with experience. Without experience no knowledge takes place. Experience is the initiator of the process of attaining knowledge. Here he once again agrees with the empiricist affirmation of the necessity of experience in knowing. However, Kant also held that, it is not true that all knowledge arises from experience. Experience is not the sole source of knowledge. There must be "categories" by which experience is structured/understood for there to be knowledge. Here he agrees with the rationalists.

Kant affirmed that the mind is active in the knowing process. The mind makes an active contribution to "the-world-as-it-is-known." The world-as-it-is-known" (what Kant would call the phenomenal realm) conforms to the mind in the knowledge process, rather than the mind conforming to a world that has its own mind-independent structure/organization. Thus, knowledge has a profoundly subjective dimension (i.e. the mind) as well as an objective dimension (i.e. the world-as-it-is-in-itself; what Kant would call the noumenal realm).

The mind contains "categories of understanding." These categories are the ways in which the active mind forms or structures experience. For Kant, there were twelve of such categories, one of which was the category of causation/cause-and-effect. The active mind relates and understands experiences in terms of some event-experiences being causes, with other event-experiences being their effects.

Furthermore, Kant affirmed *synthetic a-priori truths*. These are truths that are universal and necessary, as *a-priori* truths are truths that are universal and necessary. Unlike universal and necessary truths that are analytically true (i.e. true in accordance with the meaning of concepts, but telling us nothing about the way the world is), Kant affirmed that some universal and necessary truths are synthetic – they tell us about the way the known world is. They are constitutive of the-world-as-it-is-known.

Meanwhile, the basis of scientific knowledge is the fact that "every event has a cause." Hume demonstrated that we cannot claim to know/justify this on the basis of empiricist assumptions.

He held that "cause" is not a thing/fact out there in the world. Thus we can have no idea or knowledge of causal connections in reality.[226] Causal attributions are merely a kind of mental habit. Now, Kant held that the statement "every event has a cause" is a universally and necessarily true statement – something that we do know. It is not a mere mental habit. But the truth of the statement is grounded in the 'cause-category" within the mind that actively structures, universally and necessarily, all our experience of the world. Kant assumed that every human being, as a rational being, possesses and utilizes the same categories of understanding. As reason is the same in all rational beings, so in principle the proper exercise of reason will lead any and all persons to knowledge claims that are objectively and universally valid.

It follows that we do not know reality as it might be "in itself" – apart from how our minds structure experience of "mind-independent reality." We do not know *noumena*. We only know reality in terms of how our active minds structure/organize/form our experiences of mind-independent reality. We only know *phenomena*.

11.9 G.W.F. Hegel

The positive views of the German idealist philosopher Georg Wilhelm Friedrich Hegel (1770–1831) are notoriously difficult, and his epistemology is not susceptible of adequate summary within the scope of this book. Some of his criticisms of earlier epistemological views should be mentioned, however, since they helped to bring the modern era in philosophy to a close.
In his *Phenomenology of Spirit* (1807),[227] Hegel criticized traditional empiricist epistemology for assuming that at least some of the sensory content of experience is simply "given" to the mind and apprehended directly as it is, without the mediation of concepts. According to Hegel, there is no such thing as direct apprehension, or unmediated knowledge. Although Kant also held that empirical knowledge necessarily involves concepts (as well as the mentally contributed forms of space and time), he nevertheless attributed too large a role to the given, according to Hegel.

Another mistake of earlier epistemological theories—both empiricist and rationalist—is the assumption that knowledge entails a kind of "correspondence" between belief and reality. The search for such a correspondence is logically absurd, Hegel argued, since every such search must end with some belief about whether the correspondence holds, in which case one has not advanced beyond belief.[228] In other words, it is impossible to compare beliefs with reality, because the experience of reality is always mediated by beliefs. One cannot step outside belief altogether. For Hegel, the Kantian distinction between the phenomena of experience and the unknowable thing-in-itself is an instance of that absurdity.

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[226] H.C. Ezebuilo, "Locke, Berkeley and Hume: A Brief Survey of Empiricism," *International Journal of Research in Education, Humanities and Commerce* 1(2), (2020).
[227]https://www.britannica.com/biography/george-wilhelm-friedrich-hegel/
[228] Ibid.

CHAPTER TWELVE
THE HISTORY OF EPISTEMOLOGY: CONTEMPORARY PHILOSOPHY

12.1 Introductory Discourse

Contemporary Philosophy began in the late 19th and early 20th centuries. Much of what sets it off from modern Philosophy is its explicit criticism of the modern tradition and sometimes its apparent indifference to it. There are two basic strains of Contemporary Philosophy: Continental Philosophy, which is the Philosophical style of western European Philosophers, and analytic Philosophy (also called Anglo-American Philosophy), which includes the work of many European Philosophers who immigrated to Britain, the United States, and Australia shortly before World War II.

12.2 Analytic Epistemology

Analytic Philosophy, the prevailing form of philosophy in the Anglo-American world since the beginning of the 20th century, has its origins in symbolic logic (or formal logic) on the one hand and in British empiricism on the other. Some of its most important contributions have been made in areas other than epistemology, though its epistemological contributions also have been of the first order. Its main characteristics have been the avoidance of system building and a commitment to detailed, piecemeal analyses of specific issues. Within that tradition there have been two main approaches: a formal style deriving from logic and an informal style emphasizing ordinary language. Ludwig Wittgenstein (1889–1951) can be situated in both groups—his early work, including the *Tractatus Logico-Philosophicus* (1921), belonging to the former tradition and his later work, including the posthumously published *Philosophical Investigations* (1953) and *On Certainty* (1969), to the latter.

Perhaps the most distinctive feature of analytic Philosophy is its emphasis on the role that language plays in the creation and resolution of philosophical problems. Those problems, it is said, arise through misunderstandings of the forms and uses of everyday language. Wittgenstein said in that connection, "Philosophy is a battle against the bewitchment of the intelligence by means of language."[229] The adoption at the beginning of the 20th century of the idea that Philosophical problems are in some important sense linguistic (or conceptual), a hallmark of the analytic approach, has been called the "linguistic turn."

12.3 Commonsense Philosophy, Logical Positivism, and Naturalized Epistemology

Three of the most-notable schools of thought in analytic philosophy are commonsense philosophy, logical positivism, and naturalized epistemology. Commonsense philosophy is the

[229] Cf. J. Omoregbe, *Epistemology: A Systematic and Historical Study* (Lagos: Joja Press, 2005,), 19-20.

name given to the epistemological views of Moore, who attempted to defend what he called the "commonsense" view of the world against both skepticism and idealism. That view, according to Moore, comprises a number of propositions—such as the propositions that Earth exists, that it is very old, and that other persons now exist on it—that virtually everybody knows with certainty to be true. Any Philosophical theory that runs counter to the commonsense view, therefore, can be rejected out of hand as mistaken and skepticism and idealism fail under this category. Thus, Wittgenstein rejected skepticism and idealism, though for very different reasons. For him, those positions are based on simplistic misunderstandings of epistemic concepts, misunderstandings that arise from a failure to recognize the rich variety of ways in which Epistemic terms (including words such as *belief*, *knowledge*, *certainty*, *justification*, and *doubt*) are used in everyday situations. In *On Certainty*, Wittgenstein contrasted the concepts of certainty and knowledge, arguing that certainty is not a "surer" form of knowledge but the necessary backdrop against which the "language games" of knowing, doubting, and inquiring take place. As that which "stands fast for all of us," certitude is ultimately a kind of action: "Action lies at the bottom of the language game."[230]

The doctrines associated with logical positivism (also called logical empiricism) was developed originally in the 1920s and 1930s by a group of Philosophers and Scientists known as the Vienna Circle. Logical positivism became one of the dominant schools of philosophy in England with the publication of *Language, Truth, and Logic* by A.J. Ayer (1910–89). Among the most influential theses put forward by the logical positivists was the claim that in order for a proposition with empirical content—i.e., one that purports to say something about the world—to be meaningful, or cognitively significant, it must be possible, at least in principle, to verify the proposition through experience.[231] Because many of the utterances of traditional philosophy (especially metaphysical utterances, such as "God exists") are not empirically verifiable even in principle, they are, according to the logical positivists, literally nonsense. In their view, the only legitimate function of Philosophy is conceptual analysis—i.e., the logical clarification of concepts, especially those associated with natural science (e.g., probability and causality).

In his 1950 essay *"Two Dogmas of Empiricism*," Quine launched an attack upon the traditional distinction between analytic statements, which were said to be true by virtue of the meanings of the terms they contain, and synthetic statements, which were supposed to be true or false by virtue of certain facts about the world.[232] He argued powerfully that the difference is one of degree rather than kind. In his later work, *Word and Object* (1960), Quine developed a doctrine known as naturalized Epistemology.[233] According to that view, epistemology has no normative function. That is, it does not tell people what they ought to believe, instead, it only legitimate role is to describe the way knowledge, especially scientific knowledge, is actually obtained. In

[230] L. Wittgenstein, *On Certainty*, Denis Paul and G.E.M. Anscombe (trans.), (London: Basil Blackwell, 1969), 51.
[231] Cf. J. Omoregbe, *Epistemology*, 19.
[232] https://www.britannica.com/topic/two-dogmas-of-empiricism/
[233] W.V.O. Quine, *Word and Object*, 1960, https://mitpress.mit.edu/books/word-and-objects/

effect, its function is to describe how present science arrives at the beliefs accepted by the scientific community.
The Epistemological interests of analytic Philosophers in the first half of the 20th century were largely focused on the relationship between knowledge and perception. The major figures in that period were Russell, Moore, H.H. Price (1899–1984), C.D. Broad (1887–1971), Ayer, and H. Paul Grice (1913–88). Although their views differed considerably, they were all advocates of a general doctrine known as sense-data theory.

The technical term *sense-data* is sometimes explained by means of examples. If one is hallucinating and sees pink rats, one is having a certain visual sensation of rats of a certain colour, though there are no real rats present. The sensation is what is called a "sense-datum." The image one sees with one's eyes closed after looking fixedly at a bright light (an afterimage) is another example. Even in cases of normal vision. However, one can be said to be apprehending sense-data. For instance, when one looks at a round penny from a certain angle, the penny will seem to have an elliptical shape. In such a case, there is an elliptical sense-datum in one's visual field, though the penny itself continues to be round. The last example was held by Broad, Price, and Moore to be particularly important, for it seems to make a strong case for holding that one always perceives sense-data, whether one's perception is normal or abnormal.

In each of those examples, according to defenders of sense-data theory, there is something of which one is "directly" aware, meaning that one's awareness of it is immediate and does not depend on any inference or judgment. A sense-datum is thus frequently defined as an object of direct perception. According to Broad, Price, and Ayer, sense-data differ from physical objects in that they always have the properties they appear to have; that is, they cannot appear to have properties they do not really have. The problem for the Philosopher who accepts sense-data is how, on the basis of such private sensations, one can be justified in believing that there are physical objects that exist independently of one's perceptions. Russell in particular tried to show that knowledge of the external world could be logically constructed out of sense-data.[234]

Sense-data theory was criticized by proponents of the so-called theory of appearing, who claimed that the arguments for the existence of sense-data are invalid. From the very fact that a penny looks elliptical from a certain perspective, it does not follow that there must exist a separate entity, distinct from the penny itself, that has the property of being elliptical. To assume that it does is simply to misunderstand how common perceptual situations are described.

The theory of appearing was in turn rejected by many philosophers, who held that it failed to provide an adequate account of the epistemological status of illusions and other visual anomalies. The aim of those thinkers was to give a coherent account of how knowledge is possible given the

[234] B. Russell, *Our Knowledge of the External World*, (1914), https://www.routledge.com.

existence of sense-data and the possibility of perceptual error. The two main types of theories they developed are realism and phenomenalism.

12.4 Realist Epistemology

Realism is both an Epistemological and a Metaphysical doctrine. In its Epistemological aspect, Realism claims that at least some of the objects apprehended through perception are "public" rather than "private." In its Metaphysical aspect, realism holds that at least some objects of perception exist independently of the mind. It is especially the second of those principles that distinguishes Realists from Phenomenalists.

Realists believe that an intuitive, commonsense distinction can be made between two classes of entities perceived by human beings. One class, typically called "mental," consists of things like headaches, thoughts, pains, and desires. The other class, typically called "physical," consists of things such as tables, rocks, planets, human beings, animals and certain physical phenomena such as rainbows, lightning, and shadows. According to Realist Epistemology, mental entities are private in the sense that each of them is apprehensible by one person only. Although more than one person can have a headache or feel pain, for example, no two people can have the very same headache or feel the very same pain. In contrast, physical objects are public: more than one person can see or touch the same chair.

Realists also believe that whereas physical objects are mind-independent, mental objects are not. To say that an object is mind-independent is just to say that its existence does not depend on its being perceived or experienced by anyone. Thus, whether or not a particular table is being seen or touched by someone has no effect upon its existence. Even if no one is perceiving it, it still exists (other things being equal). But this is not true of the mental. According to Realists, if no one is having a headache, then it does not make sense to say that a headache exists. A headache is thus mind-dependent in a way in which tables, rocks, and shadows are not.

Traditional Realist theories of knowledge thus begin by assuming the public-private distinction, and most realists also assume that one does not have to prove the existence of mental phenomena. Each person is directly aware of such things, and there is no special "problem" about their existence. However, that is not true of physical phenomena. As the existence of visual aberrations, illusions, and other anomalies shows, one cannot be sure that in any perceptual situation one is apprehending physical objects. All that people can be sure of is that they are aware of something, an appearance of some sort—say, of a bent stick in water and whether that appearance corresponds to anything actually existing in the external world is an open question.

In his work *Foundations of Empirical Knowledge*, Ayer called the difficulty "the egocentric predicament."[235] When a person looks at what he thinks is a physical object, such as a chair, what he is directly apprehending is a sense-datum, a certain visual appearance, such an appearance seems to be private to that person; it seems to be something mental and not publicly accessible. What, then, justifies the individual's belief in the existence of supposedly external objects—that is, physical entities that are public and exist independently of the mind? This however led the Realists to develop two main responses to the challenge: direct (or "naive") realism and representative realism, also called the "causal theory."

In contrast to traditional realism, direct realism holds that physical objects themselves are perceived "directly." That is, what one immediately perceives is the physical object itself (or a part of it). Thus, there is no problem about inferring the existence of such objects from the contents of one's perception. Some direct realists, such as Moore and his followers, continued to accept the existence of sense-data. Unlike traditional realists, they held that, rather than mental entities, sense-data might be physical parts of the surface of the perceived object itself. Other direct realists, rejected sense-data theory altogether, claiming that the surfaces of physical objects are normally directly observed. Thompson Clarke (1928–2012) went beyond Moore in arguing that normally the entire physical object, rather than only its surface, is perceived directly.[236]

All such views have trouble explaining perceptual problems or anomalies. Indeed, it was because of such difficulties that Moore, in his last published paper, "Visual Sense-Data" (1957), abandoned direct realism. He held that because the elliptical sense-datum one perceives when one looks at a round coin cannot be identical with the coin's circular surface, for one cannot be seeing the coin directly.[237] Hence, one cannot have direct knowledge of physical objects.

Additionally, the theory of representative realism is in essence an old view; its best-known exponent in modern philosophy was Locke. It is also sometimes called "the scientific theory" because it seems to be supported by findings in optics and physics. Like most forms of realism, representative realism holds that the direct objects of perception are sense-data (or their equivalents). What it adds is a scientifically grounded causal account of the origin of sense-data in the stimulation of sense organs and the operation of the central nervous system. Thus, the theory would explain visual sense-data as follows. Light is reflected from an opaque surface, traverses an intervening space, and, if certain standard conditions are met, strikes the retina, where it activates a series of nerve cells, including the rods and cones, the bipolar cells, and the ganglion cells of the optic nerve, eventually resulting in an event in the brain consisting of the experience of a visual sense-datum, that is, "seeing."[238]

[235] A.J. Ayer, *The Foundations of Empirical Knowledge*, (1940), https://philpapers.org.
[236] https://www.britannica.com/biography/thmpson-clarke/
[237] G.E. Moore, "Visual Sense-Data," (1958), https://www,britannica.com/topic/visual-sense-data/
[238] https://www.britannica.com/science/light/

Given an appropriate normal causal connection between the original external object and the sense-datum, representative realists assert that the sense-datum will accurately represent the object as it really is. Visual illusion is explained in various ways but usually as the result of some anomaly in the causal chain that gives rise to distortions and other types of aberrant visual phenomena.

Representative realism is thus a theory of indirect perception, because it holds that human observers are directly aware of sense-data and only indirectly aware of the physical objects that cause those data in the brain. The difficulty with representative realism is that since people cannot compare the sense-datum that is directly perceived with the original object, they can never be sure that the former gives an accurate representation of the latter, and, therefore, they cannot know whether the real world corresponds to their perceptions. They are still confined within the circle of appearance after all. It thus seems that neither version of realism satisfactorily solves the problem with which it began.

12.5 Continental/Phenomenological Epistemology

In Epistemology, Continental Philosophers during the first quarter of the 20th century were preoccupied with the problem of overcoming the apparent gap between the knower and the known.

In light of the difficulties faced by realist theories of perception, some philosophers, so-called phenomenalists, proposed a completely different way of analyzing the relationship between perception and knowledge. In particular, they rejected the distinction between independently existing physical objects and mind-dependent sense-data. They claimed that the very notion of independent existence is nonsense—because human beings have no evidence for it—or what is meant by "independent existence" must be understood in such a way as not to go beyond the sort of perceptual evidence human beings do or could have for the existence of such things.[239] In effect, phenomenalists challenged the cogency of the intuitive ideas that the ordinary person supposedly has about independent existence.

All variants of phenomenalism are strongly "verificationist." That is, they wish to maintain their claims that the purported external world must be capable of verification, or confirmation. Their commitment entails that no such claim can assert the existence of, or otherwise make reference to, anything that is beyond the realm of possible perceptual experience.

Therefore, phenomenalists have tried to analyze in wholly perceptual terms what it means to say that a particular object—say, a tomato—exists.[240] Any such analysis, they claim, must begin by

[239] https://www.britannica.com/topic/phenomenology/
[240] Ibid.

deciding what sort of an object a tomato is. In their view, a tomato is first of all something that has certain perceptible properties, including a certain size, weight, colour, and shape. If one were to abstract the set of all such properties from the object, nothing would be left over—there would be no presumed Lockean "substratum" that supports those properties and that itself is unperceived. Hence, there is no evidence in favour of such an unperceivable feature, and no reference to it is needed in explaining what a tomato or any other so-called physical object is.

To talk about any existent object is to talk about a collection of perceivable features localized in a particular portion of space-time. Accordingly, to say that a tomato exists is to describe either a collection of properties that an observer is actually perceiving or a collection that such an observer would perceive under certain specified conditions. To say, for instance, that a tomato exists in the next room is to say that if one went into that room, one would see a familiar reddish shape, one would obtain a certain taste if one bit into it, and one would feel something soft and smooth if one touched it. Thus, to speak about the tomato's existing unperceived in the next room does not entail that it is unperceivable. In principle, everything that exists is perceivable. Therefore, the notion of existing independently of perception has been misunderstood or mischaracterized by both philosophers and non-philosophers.[241] Once it is understood that objects are merely sets of properties and that such properties are in principle always perceivable, the notion that there is some sort of unbridgeable gap between people's perceptions and the objects they perceive is seen to be just a mistake.

In the phenomenalist view, perceptual error is explained in terms of coherence and predictability.[242] To say with truth that one is perceiving a tomato means that one's present set of perceptual experiences and an unspecified set of future experiences will "cohere" in certain ways. That is, if the object being looked at is a tomato, then one can expect that if one touches, tastes, and smells it, one will experience a recognizable grouping of sensations. If the object in the visual field is hallucinatory, then there will be a lack of coherence between what one touches, tastes, and smells. One might, for example, see a red shape but will not be able to touch or taste anything.

The theory is generalized to include what others would touch, see, and hear as well, so that what the realists call "public" will also be defined in terms of the coherence of perceptions. A so-called physical object is public if the perceptions of many persons cohere or agree; otherwise, it is not. That explains why a headache is not a public object. In similar fashion, a so-called physical object will be said to have an independent existence if expectations of future perceptual experiences are borne out. If tomorrow, or the day after, one has perceptual experiences similar to those one had today, then one can say that the object being perceived has an independent existence. The phenomenalist thus attempts, without positing the existence of

[241] Ibid.
[242] Ibid.

anything that transcends possible experience, to account for all the facts that the realist wishes to explain.

Criticisms of phenomenalism have tended to be technical. Generally speaking, realists have objected to it on the ground that it is counterintuitive to think of physical objects such as tomatoes as being sets of actual or possible perceptual experiences. Realists argue that one does have such experiences, or under certain circumstances would have them, because there is an object out there that exists independently and is their source. Phenomenalism, contention implies that if no perceivers existed, then the world would contain no objects, and that is surely inconsistent both with what ordinary persons believe and with the known scientific fact that all sorts of objects existed in the universe long before there were any perceivers. But supporters deny that phenomenalism carries such an implication, and the debate about its merits remains unresolved.

12.5.1 Edmund Husserl

The German Philosopher Edmund Husserl (1859–1938) thought that the standard epistemological theories of his day lacked insight because they did not focus on the objects of knowledge as they are actually experienced by human beings. To emphasize that reorientation of thinking, he adopted the slogan, "To the things themselves." Philosophers needed to recover a sense of what is given in experience itself, and that could be accomplished only through a careful description of experiential phenomena. Thus, Husserl called his Philosophy "Phenomenology,"[243] which was to begin as a purely descriptive science and only later to ascend to a theoretical, or "transcendental," one.

According to Husserl, the philosophies of Descartes and Kant presupposed a gap between the aspiring knower and what is known, one that made claims to knowledge of the external world dubious and in need of justification. Those presuppositions violated Husserl's belief that philosophy, as the most fundamental science, should be free of presuppositions. Thus, he held that it is illegitimate to assume that there is a problem about our knowledge of the external world prior to conducting a completely presuppositionless investigation of the matter.[244] The device that Husserl used to remove such presuppositions was the *epochē* (Greek: "withholding" or "suspension"), originally a principle of ancient Greek Skepticism but in Husserl's philosophy a technique of "bracketing," or removing from consideration, not only all traditional Philosophical theories but also all commonsensical beliefs so that pure phenomenological description can proceed.[245]

[243] Cf. https://www.britannica.com/topic/phenomenology/
[244] Cited in J. Omoregbe, *Epistemology: A Systematic and Historical Study* (Lagos: Joja Press, 2005,), 52-54.
[245] Ibid.

The *epochē* was just one of a series of the so-called transcendental reductions that Husserl proposed in order to ensure that he was not presupposing anything. One of those reductions supposedly gave one access to "the transcendental ego," or "pure consciousness."[246] Although one might expect Phenomenology then to describe the experience or contents of this ego, Husserl instead aimed at "eidetic reduction"—that is, the discovery of the essences of various sorts of ideas, such as redness, surface, or relation.[247] All of those moves were part of Husserl's project of discovering a perfect methodology for Philosophy, one that would ensure absolute certainty.

Husserl's transcendental ego seemed very much like the Cartesian mind that thinks of a world but has neither direct access to nor certainty of it. Accordingly, Husserl attempted to overcome the apparent gap between the ego and the world—the very thing he had set out to destroy or to bypass in earlier works, because the transcendental ego seems to be the only genuinely existent consciousness, Husserl was also was faced with the task of overcoming the problem of solipsism.

12.5.2 Martin Heidegger

Many of Husserl's followers, including his most famous student, Martin Heidegger (1889–1976), recognized that something had gone radically wrong with the original direction of Phenomenology. According to Heidegger's diagnosis, the root of the problem was Husserl's assumption that there is an "Archimedean point" of human knowledge. For him, there is no such ego detached from the world and filled with ideas or representations. According to Heidegger in one of his writing *Being and Time* (1927), Heidegger returned to the original formulation of the phenomenological project as a return to the things themselves. Thus, in Heidegger's approach, all transcendental reductions are abandoned. What he claimed to discover is that human beings are inherently world-bound.[248] The world does not need to be derived; it is presupposed by human experience. In their pre-reflective experience, humans inhabit a sociocultural environment in which the primordial kind of cognition is practical and communal, not theoretical or individual ("egoistic").[249] Human beings interact with the things of their everyday world (Lebenswelt) as a workman interacts with his tools; they hardly ever approach the world as a Philosopher or Scientist would. The theoretical knowledge of a Philosopher is a derivative and specialized form of cognition, and the major mistake of Epistemology from Descartes to Kant to Husserl was to treat Philosophical knowledge as a paradigm of all knowledge.

[246] Ibid.
[247] Ibid.
[248] M. Heidegger, *Being and Time*, Joan Stambaugh (trans.). (New York: Blackwell, 1996), 311.
[249] Ibid.

Notwithstanding Heidegger's insistence that a human being is something that inhabits a world, he marked out human reality as ontologically special. He called that reality *Dasein*—the being, apart from all others, which is "present" to the world.[250] Thus, as in Husserl's phenomenology, a cognitive being takes pride of place in Heidegger's Philosophy.

12.5.3 Maurice Merleau-Ponty and Jean-Paul Sartre.

In France the principal representative of Phenomenology in the mid twentieth century was Maurice Merleau-Ponty(1908-1961**)**.[251] Merleau-Ponty rejected Husserl's bracketing of the world, arguing that human experience of the world is primary, a view he encapsulated in the phrase "the primacy of perception."[252] He furthermore held that dualistic analyses of knowledge, best exemplified by traditional Cartesian mind-body dualism, are inadequate. In fact, in his view, no conceptualization of the world can be complete, because human cognitive experience requires a body and the body a position in space, human experience is necessarily perspectival and thus incomplete.[253] Although, humans experience a material being as a multidimensional object, part of the object always exceeds their cognitive grasp just because of their limited perspective.

The epistemological views of Jean-Paul Sartre (1905–80) are similar in some respects to those of Merleau-Ponty. Both Philosophers rejected Husserl's transcendental reductions and both thought of human reality as "being-in-the-world," but Sartre's views have Cartesian elements that were anathema to Merleau-Ponty. Sartre distinguished between two basic kinds of being.[254] Being-in-itself (*en soi*) is the inert and determinate world of non-human existence. Over and against it is being-for-itself (*pour soi*), which is the pure consciousness that defines human reality.

Later Continental Philosophers attacked the entire Philosophical tradition from Descartes to the twentieth century for its explicit or implicit dualisms. Being/non-being, mind/body, knower/known, ego/world, being-in-itself/being-for-itself are all variations of a pattern of thinking that the Philosophers of the last third of the twentieth century tried to undermine. The Structuralist Michel Foucault (1926–84), for example, wrote extensive historical studies in an attempt to demonstrate that all concepts are historically conditioned and that many of the most important ones serve the political function of controlling people rather than any purely cognitive purpose.[255] Jacques Derrida (1930–2004) claimed that all dualisms are value-laden and

[250] Ibid.
[251]https://www.britannica.com/biography/maurice-merleau-ponty/
[252] M. Merleau-Ponty, *Phenomenology of Perception*, Donald Landes (trans.), (London: Routledge, 1965), 298.
[253] Ibid.
[254]https://www.britannica.com/biography/jean-paul-sartre/
[255] Michael Foucault, (1969), *The Archaeology of Knowledge*, A.M. Sheridan Smith (trans.), London and New York: Routledge, 2002), 117-118.

indefensible.[256] His technique of deconstruction aimed to show that every Philosophical dichotomy is incoherent because whatever can be said about one term of the dichotomy can also be said of the other.

Dissatisfaction with the Cartesian Philosophical tradition can also be found in the thought of the American Pragmatist, John Dewey (1859–1952). He directly challenged the idea that knowledge is primarily theoretical.[257] Experience, he argued, consists of an interaction between living beings and their environment. Knowledge is not a fixed apprehension of something but a process of acting and being acted upon. Richard Rorty (1931–2007) did much to reconcile Continental and analytic Philosophy. He argued that Dewey, Heidegger, and Ludwig Wittgenstein were the three greatest philosophers of the 20th century specifically because of their attacks on the Epistemological tradition of modern Philosophy.[258]

12.6 Later Analytic Epistemology

Beginning in the last quarter of the twentieth century, important contributions to Epistemology were made by researchers in neuroscience, psychology, artificial intelligence, and computer science. Those investigations produced insights into the nature of vision, the formation of mental representations of the external world, and the storage and retrieval of information in memory, among many other processes.[259] In effect, the new approaches, revived theories of indirect perception that emphasized the subjective experience of the observer. Indeed, many such theories made use of concepts—such as "qualia" and "felt sensation"—that were essentially equivalent to the notion of sense-data.[260]

Some of the new approaches also seemed to lend support to skeptical conclusions of the sort that early sense-data theorists had attempted to overcome. The neurologist Richard Gregory (1923–2010), for example, argued in 1993 that:

> No theory of direct perception, such as that proposed by Gibson, could be supported, given the indirectness imposed by the many physiological steps or stages of visual and other sensory perception.…For these and other reasons we may safely abandon direct accounts of perception in favor

[256] https:www.britannica.com/biography/jaques-derrida/
[257] https:www.britannica.com/biography/john-dewey/
[258] https:www.britannica.com/biography/Richard-rorty/
[259] F. Barone,*Logical Empericism: Historical and Contemporary Perspectives* (Pittsburgh: University of Pittsburgh Press, 2003), 57.
[260] Ibid.

> of indirectly related and never certain…hypotheses of reality.[261]

Similarly, the work of Vilayanur Ramachandran, a neurologist, (born 1951), showed that the stimulation of certain areas of the brain in normal people produces sensations comparable to those felt in so-called "phantom limb" phenomena (the experience by an amputee of pains or other sensations that seem to be located in a missing limb). The conclusion that Ramachandran drew from his work is a modern variation of Descartes's "evil genius" hypothesis: that we can never be certain that the sensations we experience accurately reflect an external reality.[262]

On the basis of such experimental findings, many Philosophers adopted forms of radical skepticism. Benson Mates (1919–2009), for example, declared:

> Ultimately the only basis I can have for a claim to know that there exists something other than my own perceptions is the nature of those very perceptions, but they could be just as they are even if there did not exist anything else. Ergo, I have no basis for the knowledge-claim in question.[263]

Mates concluded, that human beings cannot make any justifiable assertions about anything other than their own sense experiences.

Philosophers have responded to such challenges in a variety of ways. Avrum Stroll (1921–2013), for example, argued that the views of skeptics such as Mates, as well those of many other modern proponents of indirect perception, rest on a conceptual mistake: the failure to distinguish between scientific and Philosophical accounts of the connection between sense experience and objects in the external world.[264] In the case of vision, the scientific account (or, as he called it, the "causal story") describes the familiar sequence of events that occurs according to well-known optical and physical laws. Citing that account, proponents of indirect perception point out that every event in such a causal sequence results in some modification of the input it receives from the preceding event. Thus, the light energy that strikes the retina is converted to electrochemical energy by the rods and cones, among other nerve cells, and the electrical impulses transmitted along the nervous pathways leading to the brain are reorganized in important ways at every synapse.[265] From the fact that the input to every event in the sequence undergoes some modification, it follows that the end result of the process, the visual representation of the external object, must differ considerably from the elements of the original input, including the object

[261] Ibid.
[262] Ibid.,58.
[263] https://www.britannica.com/biography/benson-mates/
[264] F. Barone,*Logical Empericism*, 63.
[265] Ibid.

itself. From that observation, theorists of indirect perception who are inclined toward skepticism conclude that one cannot be certain that the sensation one experiences in seeing a particular object represents the object as it really is.[266]

But the last inference is unwarranted, according to Stroll Avrum. What the argument shows is only that the visual representation of the object and the object itself are different (a fact that hardly needs pointing out). It does not show that one cannot be certain whether the representation is accurate.[267] Indeed, a strong argument can be made to show that human perceptual experiences cannot all be inaccurate, or "modified," in this way, for if they were, then it would be impossible to compare any given perception with its object in order to determine whether the sensation represented the object accurately, but in that case it also would be impossible to verify the claim that all our perceptions are inaccurate. Hence, the claim that all our perceptions are inaccurate is scientifically un-testable. According to Stroll, that is a decisive objection against the skeptical position.

The implications of such developments in the cognitive sciences are clearly important for epistemology. The experimental evidence adduced for indirect perception has raised philosophical discussion of the nature of human perception to a new level. It is clear that a serious debate has begun, and at this point it is impossible to predict its outcome.

[266] Ibid.
[267] Ibid, 64-65.

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.[268] Empiricism emphasizes the role of empirical evidence in the formation of ideas, rather than innate ideas or traditions.[269]However, Empiricists may argue that traditions (or customs) arise due to relations of previous sense experiences.[270] 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.[271] 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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[268] 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.
[269] Ibid.
[270] Ibid.
[271] 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."[272] 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."[273]

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

[272] W. James, and G. Gunn, *Pragmatism and other Essays*, 32-33.
[273] 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.[274]

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*.[275]

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,"[276] by which he meant to rule out the perception that there can be any value added by seeking supernatural explanations

[274] "Empiricism," *Macmillan Encyclopedia of Philosophy*,551.
[275] Irvin Rock, *Indirect Perception* (Cambridge, Massachusetts, 1997), 77-78.
[276] 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.[277] 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.[278] 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.[279] 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.[280]

Naturalized epistemology was first proposed in "Epistemology Naturalized", a seminal paper by W.V.O. Quine.[281] 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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[277]Eric Thomas Weber, "What Experimentalism Means in Ethics," *The Journal of Speculative Philosophy,* no. 25 (2011), 99.

[278] R. Rorty, *Consequences of Pragmatism* (Minneapolis: University of Minnesota Press, 1982).

[279]Kim Jaegwon, "What Is Naturalized Epistemology?" *Philosophical Perspectives*, 2, (1988), 405.

[280] Ibid.

[281] 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.[282] Harding proposes that feminist epistemology can be broken into three distinct categories: Feminist empiricism, standpoint epistemology, and postmodern epistemology.[283] 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.[284][78] 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.[285] 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*

[282] "Feminist Epistemology," *Stanford Encyclopedia of Philosophy*. Retrieved October 31, 2021.
[283] Ibid.
[284]
[285] 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.[286] 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.[287]

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).[288] 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).[289]

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

[286] Stephan Hartmann and Jan Sprenger, "*Bayesian Epistemology*." *The Routledge Companion to Epistemology* (London: Routledge, 2010), 609.
[287] Ibid.
[288] B.K. Matilal, *Perception: An Essay on Classical Indian Theories of Knowledge*" (Oxford University Press, 1986), xiv.
[289] 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[290]) 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.[291] 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.[292] 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*).[293] The Buddhist Madhyamika school's theory of emptiness (shunyata) meanwhile has been interpreted as a form of philosophical skepticism.[294]

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).[295] 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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[290] Ibid.
[291] Ibid.
[292] D. Long, *Jainism: An Introduction*, 125.
[293] Ibid.
[294] Ibid.
[295] 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.[102] 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.[103] 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.[296] 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.

[296] John Haldane, Crispin Wright (eds.), *Reality, Representation, and Projection*, (Oxford: oxford University Press, 1993), 16.

CHAPTER FOURTEEN

EMPIRICISM

14.1 What is Empiricism?

Empiricism is the view that all concepts originate in experience, that all concepts are about or applicable to things that can be experienced, or that all rationally acceptable beliefs or propositions are justifiable or knowable only through experience. This broad definition accords with the derivation of the term *empiricism* from the ancient Greek word *empeiria*, "experience."

Concepts are said to be "a posteriori" (Latin: "from the latter") if they can be applied only on the basis of experience, and they are called "a priori" ("from the former") if they can be applied independently of experience. Beliefs or propositions are said to be a posteriori if they are knowable only on the basis of experience and a priori if they are knowable independently of experience. Thus, according to the second and third definitions of empiricism above, empiricism is the view that all concepts, or all rationally acceptable beliefs or propositions, are a posteriori rather than a priori.

The first two definitions of empiricism typically involve an implicit theory of meaning, according to which words are meaningful only insofar as they convey concepts. Some empiricists have held that all concepts are either mental "copies" of items that are directly experienced or complex combinations of concepts that are themselves copies of items that are directly experienced. This view is closely linked to the notion that the conditions of application of a concept must always be specified in experiential terms.

The third definition of empiricism is a theory of knowledge, or theory of justification. It views beliefs, or at least some vital classes of belief—e.g., the belief that this object is red—as depending ultimately and necessarily on experience for their justification. An equivalent way of stating this thesis is to say that all human knowledge is derived from experience.

Empiricism regarding concepts and empiricism regarding knowledge do not strictly imply each other. Many empiricists have admitted that there are a priori propositions but have denied that there are a priori concepts. It is rare, however, to find a philosopher who accepts a priori concepts but denies a priori propositions.

Stressing experience, empiricism often opposes the claims of authority, intuition, imaginative conjecture, and abstract, theoretical, or systematic reasoning as sources of reliable belief. Its most fundamental antithesis is with the latter—i.e., with rationalism, also called intellectualism or apriorism. A rationalist theory of concepts asserts that some concepts are a priori and that these concepts are innate, or part of the original structure or constitution of the mind. A rationalist theory of knowledge, on the other hand, holds that some rationally acceptable

propositions—perhaps including "everything must have a sufficient reason for its existence" (the principle of sufficient reason)—are a priori. A priori propositions, according to rationalists, can arise from intellectual intuition, from the direct apprehension of self-evident truths, or from purely deductive reasoning.

Empiricism is a view in the theory of knowledge which focuses on the role of experience, especially experience based on perceptual observations by the senses, in the generation of knowledge. Certain forms exempt disciplines such as mathematics and logic from these requirements.

There are many variants of empiricism, including British empiricism, logical empiricism, phenomenalism, and some versions of common sense philosophy. Most forms of empiricism give epistemologically privileged status to sensory impressions or sense data, although this plays out very differently in different cases. Some of the most famous historical empiricists include John Locke, David Hume, George Berkeley, Francis Bacon, John Stuart Mill, Rudolf Carnap, and Bertrand Russell.

In philosophy, empiricism is a theory that states that knowledge comes only or primarily from sensory experience.[297] Empiricism emphasizes the role of empirical evidence in the formation of ideas, rather than innate ideas or traditions.[298]However, empiricists may argue that traditions (or customs) arise due to relations of previous sense experiences.[299] 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 based on experience and that knowledge is tentative and probabilistic, subject to continued revision and falsification.[300] Empirical research, including experiments and validated measurement tools, guides the scientific method.

[297] 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.
[298] Ibid.
[299] Ibid.
[300] 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).

14.2 Various Meanings of Empiricism

14.2.1 Broader Senses

In both everyday attitudes and philosophical theories, the experiences referred to by empiricists are principally those arising from the stimulation of the sense organs—i.e., from visual, auditory, tactile, olfactory, and gustatory sensation. (In addition to these five kinds of sensation, some empiricists also recognize kinesthetic sensation, or the sensation of movement.) Most philosophical empiricists, however, have maintained that sensation is not the only provider of experience, admitting as empirical the awareness of mental states in introspection or reflection (such as the awareness that one is in pain or that one is frightened); such mental states are then often described metaphorically as being present to an "inner sense." It is a controversial question whether still further types of experience, such as moral, aesthetic, or religious experience, ought to be acknowledged as empirical. A crucial consideration is that, as the scope of "experience" is broadened, it becomes increasingly difficult to distinguish a domain of genuinely a priori propositions. If, for example, one were to take the mathematician's intuition of relationships between numbers as a kind of experience, one would be hard-pressed to identify any kind of knowledge that is not ultimately empirical.

Even when empiricists agree on what should count as experience, however, they may still disagree fundamentally about how experience itself should be understood. Some empiricists, for example, conceive of sensation in such a way that what one is aware of in sensation is always a mind-dependent entity (sometimes referred to as a "sense datum"). Others embrace some version of "direct realism," according to which one can directly perceive or be aware of physical objects or physical properties. Thus there may be radical theoretical differences even among empiricists who are committed to the notion that all concepts are constructed out of elements given in sensation.

Two other viewpoints related to but not the same as empiricism are the pragmatism of the American philosopher and psychologist William James, an aspect of which was what he called radical empiricism, and logical positivism, sometimes also called logical empiricism. Although these philosophies are empirical in some sense, each has a distinctive focus that warrants its treatment as a separate movement. Pragmatism stresses the involvement of ideas in practical experience and action, whereas logical positivism is more concerned with the justification of scientific knowledge.

When describing an everyday attitude, the word *empiricism* sometimes conveys an unfavourable implication of ignorance of or indifference to relevant theory. Thus, to call a doctor an "Empiric" has been to call him a quack—a usage traceable to a sect of medical men who were opposed to the elaborate medical—and in some views metaphysical—theories inherited from the

Greek physician Galen of Pergamum (129–*c.* 216 CE). The medical empiricists opposed to Galen preferred to rely on treatments of observed clinical effectiveness, without inquiring into the mechanisms sought by therapeutic theory. But *empiricism*, detached from this medical association, may also be used, more favourably, to describe a hard-headed refusal to be swayed by anything but the facts that the thinker has observed for himself, a blunt resistance to received opinion or precarious chains of abstract reasoning.

14.2.2 Stricter Senses

As a more strictly defined movement, empiricism reflects certain fundamental distinctions and occurs in varying degrees. Empiricism, whether concerned with concepts or knowledge, can be held with varying degrees of strength. On this basis, absolute, substantive, and partial empiricisms can be distinguished.

12.2.2.1 Absolute Empiricism

Absolute empiricists hold that there are no a priori concepts, either formal or categorial, and no a priori beliefs or propositions. Absolute empiricism about the former is more common than that about the latter, however. Although nearly all Western philosophers admit that obvious tautologies (e.g., "all red things are red") and definitional truisms (e.g., "all triangles have three sides") are a priori, many of them would add that these represent a degenerate case.

12.2.2.2 Substantive Empiricism

A more moderate form of empiricism is that of the substantive empiricists, who are unconvinced by attempts that have been made to interpret formal concepts empirically and who therefore concede that formal concepts are a priori, though they deny that status to categorial concepts and to the theoretical concepts of physics, which they hold are a posteriori. According to this view, allegedly a priori categorial and theoretical concepts are either defective, reducible to empirical concepts, or merely useful "fictions" for the prediction and organization of experience.

The parallel point of view about knowledge assumes that the truth of logical and mathematical propositions is determined, as is that of definitional truisms, by the relationships between meanings that are established prior to experience. The truth often espoused by ethicists, for example, that one is truly obliged to rescue a person from drowning only if it is possible to do so, is a matter of meanings and not of facts about the world. On this view, all propositions that, in contrast to the foregoing example, are in any way substantially informative about the world are a posteriori. Even if there are a priori propositions, they are formal or verbal or conceptual in nature, and their necessary truth derives simply from the meanings that attached to the words they contain. A priori knowledge is useful because it makes explicit the hidden implications of

substantive, factual assertions. But a priori propositions do not themselves express genuinely new knowledge about the world; they are factually empty. Thus "All bachelors are unmarried" merely gives explicit recognition to the commitment to describe as unmarried anyone who has been described as a bachelor.

Substantive empiricism about knowledge regards all a priori propositions as being more-or-less concealed tautologies. If a person's "duty" is thus defined as that which he should always do, the statement "A person should always do his duty" then becomes "A person should always do what he should always do." Deductive reasoning is conceived accordingly as a way of bringing this concealed tautological status to light. That such extrication is nearly always required means that a priori knowledge is far from trivial.
For the substantive empiricist, truisms and the propositions of logic and mathematics exhaust the domain of the a priori. Science, on the other hand—from the fundamental assumptions about the structure of the universe to the singular items of evidence used to confirm its theories—is regarded as a posteriori throughout. The propositions of ethics and those of metaphysics, which deals with the ultimate nature and constitution of reality (e.g., "only that which is not subject to change is real"), are either disguised tautologies or "pseudo-propositions," that is, combinations of words that, despite their grammatical respectability, cannot be taken as true or false assertions at all.

14.2.2.3 Partial Empiricism

The least thoroughgoing type of empiricism here distinguished, ranking third in degree, can be termed partial empiricism. According to this view, the realm of the a priori includes some concepts that are not formal and some propositions that are substantially informative about the world. The theses of the transcendental idealism of Immanuel Kant (1720–1804), the general scientific conservation laws, the basic principles of morality and theology, and the causal laws of nature have all been held by partial empiricists to be both "synthetic" (substantially informative) and a priori. As noted above, philosophers who embrace the Kripkean notion of reference fixing would add to this class propositions such as "heat is the cause of sensations of warmth" and "Aristotle was the teacher of Alexander the Great," both of which derive their presumed aprioricity from the hypothetical circumstances in which their subject terms were introduced. At any rate, in all versions of partial empiricism there remain a great many straightforwardly a posteriori concepts and propositions: ordinary singular propositions about matters of fact and the concepts that figure in them are held to fall in this domain.

14.3 Historical Background to Empiricism

The English term *empirical* derives from the Ancient Greek word ἐμπειρία, *empeiria*, which is cognate with and translates to the Latin *experientia*, from which the

words *experience* and *experiment* are derived.[301] A central concept in science and the scientific method is that conclusions must be *empirically* based on the evidence of the senses. Both natural and social sciences use working hypotheses that are testable by observation and experiment. The term *semi-empirical* is sometimes used to describe theoretical methods that make use of basic axioms, established scientific laws, and previous experimental results in order to engage in reasoned model building and theoretical inquiry.

14.3.1 Ancient Philosophy

So-called common sense might appear to be inarticulately empiricist; and empiricism might be usefully thought of as a critical force resisting the pretensions of a more speculative rationalist philosophy. In the ancient world the kind of rationalism that many empiricists oppose was developed by Plato (c. 428–c. 328 BCE), the greatest of rationalist philosophers. The ground was prepared for him by three earlier bodies of thought: the Ionian cosmologies of the 6th century BCE, with their distinction between sensible appearance and a reality accessible only to pure reason; the philosophy of Parmenides (early 5th century BCE), the important early monist, in which purely rational argument is used to prove that the world is really an unchanging unity; and Pythagoreanism, which, holding that the world is really made of numbers, took mathematics to be the repository of ultimate truth.

The first empiricists in Western philosophy were the Sophists, who rejected such rationalist speculation about the world as a whole and took humanity and society to be the proper objects of philosophical inquiry. Invoking skeptical arguments to undermine the claims of pure reason, they posed a challenge that invited the reaction that comprised Plato's philosophy.

Plato, and to a lesser extent Aristotle, were both rationalists. But Aristotle's successors in the ancient Greek schools of Stoicism and Epicureanism advanced an explicitly empiricist account of the formation of human concepts. For the Stoics the human mind is at birth a clean slate, which comes to be stocked with concepts by the sensory impingement of the material world upon it. Yet they also held that there are some concepts or beliefs, the "common notions," that are present to the minds of all humans; and these soon came to be conceived in a nonempirical way. The empiricism of the Epicureans, however, was more pronounced and consistent. For them human concepts are memory images, the mental residues of previous sense experience, and knowledge is as empirical as the ideas of which it is composed.

[301] "Definition of EMPIRIC," *www.merriam-webster.com.*

14.3.2 Medieval Philosophy

Most medieval philosophers after St. Augustine (354–430) took an empiricist position, at least about concepts, even if they recognized much substantial but nonempirical knowledge. The standard formulation of this age was: “There is nothing in the intellect that was not previously in the senses.” Thus St. Thomas Aquinas (1225–74) rejected innate ideas altogether. Both soul and body participate in perception, and all ideas are abstracted by the intellect from what is given to the senses. Human ideas of unseen things, such as angels and demons and even God, are derived by analogy from the seen.

The 13th-century scientist Roger Bacon emphasized empirical knowledge of the natural world and anticipated the polymath Renaissance philosopher of science Francis Bacon (1561–1626) in preferring observation to deductive reasoning as a source of knowledge. The empiricism of the 14th-century Franciscan nominalist William of Ockham was more systematic. All knowledge of what exists in nature, he held, comes from the senses, though there is, to be sure, “abstractive knowledge” of necessary truths; but this is merely hypothetical and does not imply the existence of anything. His more extreme followers extended his line of reasoning toward a radical empiricism, in which causation is not a rationally intelligible connection between events but merely an observed regularity in their occurrence.

14.3.3 Modern Philosophy

In the earlier and unsystematically speculative phases of Renaissance philosophy, the claims of Aristotelian logic to yield substantial knowledge were attacked by several 16th-century logicians; in the same century, the role of observation was also stressed. One mildly skeptical Christian thinker, Pierre Gassendi (1592–1655), advanced a deliberate revival of the empirical doctrines of Epicurus. But the most important defender of empiricism was Francis Bacon, who, though he did not deny the existence of a priori knowledge, claimed that, in effect, the only knowledge that is worth having (as contributing to the relief of the human condition) is empirically based knowledge of the natural world, which should be pursued by the systematic—indeed almost mechanical—arrangement of the findings of observation and is best undertaken in the cooperative and impersonal style of modern scientific research. Bacon was, in fact, the first to formulate the principles of scientific induction.

A materialist and nominalist, Thomas Hobbes (1588–1679) combined an extreme empiricism about concepts, which he saw as the outcome of material impacts on the bodily senses, with an extreme rationalism about knowledge, of which he took geometry to be the paradigm. For him all genuine knowledge is a priori, a matter of rigorous deduction from definitions. The senses provide ideas; but all knowledge comes from “reckoning,” from deductive calculations carried out on the names that the thinker has assigned to them. Yet all knowledge also concerns material

and sensible existences, since everything that exists is a body.[302] On the other hand, many of the most important claims of Hobbes's ethics and political philosophy certainly seem to be a posteriori, insofar as they rely heavily on his experience of human beings and the ways in which they interact.

The most elaborate and influential presentation of empiricism was made by John Locke (1632–1704), an early Enlightenment philosopher, in the first two books of his Essay Concerning Human Understanding (1690). All knowledge, he held, comes from sensation or from reflection, by which he meant the introspective awareness of the workings of one's own mind. Locke often seemed not to separate clearly the two issues of the nature of concepts and the justification of beliefs. His Book I, though titled "Innate Ideas," is largely devoted to refuting innate knowledge. Even so, he later admitted that much substantial knowledge—in particular, that of mathematics and morality—is a priori. He argued that infants know nothing; that if humans are said to know innately what they are capable of coming to know, then all knowledge is, trivially, innate; and that no beliefs whatever are universally accepted.

Locke was more consistent about the empirical character of all concepts, and he described in detail the ways in which simple ideas can be combined to form complex ideas of what has not in fact been experienced. One group of dubiously empirical concepts—those of unity, existence, and number—he took to be derived both from sensation and from reflection. But he allowed one a priori concept—that of substance—which the mind adds, seemingly from its own resources, to its conception of any regularly associated group of perceptible qualities.[303]

Bishop George Berkeley (1685–1753), a theistic idealist and opponent of materialism, applied Locke's empiricism about concepts to refute Locke's account of human knowledge of the external world. Because Berkeley was convinced that in sense experience one is never aware of anything but what he called "ideas" (mind-dependent qualities), he drew and embraced the inevitable conclusion that physical objects are simply collections of perceived ideas, a position that ultimately leads to phenomenalism—i.e., to the view that propositions about physical reality are reducible to propositions about actual and possible sensations. He accounted for the continuity and orderliness of the world by supposing that its reality is upheld in the perceptions of an unsleeping God. The theory of spiritual substance involved in Berkeley's position seems to be vulnerable, however, to most of the same objections as those that he posed against Locke. Although Berkeley admitted that he did not have an idea of mind (either his own or the mind of God), he claimed that he was able to form what he called a "notion" of it. It is not clear how to reconcile the existence of such notions with a thoroughgoing empiricism about concepts.

[302] H.C. Ezebuilo, "Locke, Berkeley and Hume: A Brief Survey of Empiricism," *International Journal of Research in Education, Humanities and Commerce* 1(2), (2020).
[303] Ibid.

The Scottish skeptical philosopher David Hume (1711–76) fully elaborated Locke's empiricism and used it reductively to argue that there can be no more to the concepts of body, mind, and causal connection than what occurs in the experiences from which they arise. Like Berkeley, Hume was convinced that perceptions involve no constituents that can exist independently of the perceptions themselves. Unlike Berkeley, he could find neither an idea nor a notion of mind or self, and as a result his radical empiricism contained an even more parsimonious view of what exists. While Berkeley thought that only minds and their ideas exist, Hume thought that only perceptions exist and that it is impossible to form an idea of anything that is not a perception or a complex of perceptions. For Hume all necessary truth is formal or conceptual, determined by the various relations that hold between ideas.

An attempt to resolve the controversy between empiricists and their opponents was made in the transcendental idealism of Kant, who drew upon both Hume and Gottfried Wilhelm Leibniz (1646–1716). With the dictum that, although all knowledge begins with experience it does not all arise from experience, he established a clear distinction between the innate and the a priori. He held that there are a priori concepts, or categories—substance and cause being the most important—and also substantial or synthetic a priori truths. Although not derived from experience, the latter apply to experience. A priori concepts and propositions do not relate to a reality that transcends experience; they reflect, instead, the mind's way of organizing the amorphous mass of sense impressions that flow in upon it.

Lockean empiricism prevailed in 19th-century England until the rise of Hegelianism in the last quarter of the century. To be sure, the Scottish philosophers who followed Hume but avoided his skeptical conclusions insisted that humans do have substantial a priori knowledge. But the philosophy of John Stuart Mill (1806–1873) is thoroughly empiricist. He held that all knowledge worth having, including mathematics, is empirical. The apparent necessity and aprioricity of mathematics, according to Mill, is the result of the unique massiveness of its empirical confirmation. All real knowledge for Mill is inductive and empirical, and deduction is sterile. It is not clear that Mill consistently adhered to this position, however. In both his epistemology and his ethics, he sometimes seemed to recognize the need for first principles that could be known without proof.[304] The philosopher of evolution Herbert Spencer (1820–1903) offered another explanation of the apparent necessity of some beliefs: they are the well-attested (or naturally selected) empirical beliefs inherited by living humans from their evolutionary ancestors. Two important mathematicians and pioneers in the philosophy of modern physics, William Kingdon Clifford (1845–1879) and Karl Pearson (1857–1936), defended radically empiricist philosophies of science, anticipating the logical empiricism of the 20th century.

[304] Ibid.

14.3.4 Contemporary Philosophy

One of the most influential empiricists of the 20th century was the great British philosopher and logician Bertrand Russell (1872–1970). Early in his career Russell admitted both synthetic a priori knowledge and concepts of unobservable entities. Later, through discussions with his pupil Ludwig Wittgenstein (1889–1951), Russell became convinced that the truths of logic and mathematics are analytic and that logical analysis is the essence of philosophy. In his empiricist phase, Russell analyzed concepts in terms of what one is "directly acquainted" with in experience (where experience was construed broadly enough to include not only awareness of sense data but also awareness of properties construed as universals). In his neutral monist phase, he tried to show that even the concepts of formal logic are ultimately empirical, though the experience that supplies them may be introspective instead of sensory.

Doctrines developed by Russell and Wittgenstein influenced the German-American philosopher Rudolf Carnap (1891–1970) and the Vienna Circle, a discussion group in which the philosophy of logical positivism was developed. The empirical character of logical positivism is especially evident in its formulation of what came to be known as the "verification principle," according to which a sentence is meaningful only if it is either tautologous or in principle verifiable on the basis of sense experience.

Later developments in epistemology served to make some empiricist ideas about knowledge and justification more attractive. One of the traditional problems faced by more radical forms of empiricism was that they seemed to provide too slender a foundation upon which to justify what humans think they know.[305] If sensations can occur in the absence of physical objects, for example, and if what one knows immediately is only the character of one's own sensations, how can one legitimately infer knowledge of anything else? Hume argued that the existence of a sensation is not a reliable indicator of anything other than itself. In contrast, adherents of a contemporary school of epistemology known as **"externalism"** have argued that sensations (and other mental states) can play a role in justifying what humans think they know, even though the vast majority of humans are unaware of what that role is. The idea behind one form of externalism, "reliablism," is that a belief is justified when it is produced through a reliable process, namely a process that reliably produces true beliefs. Humans may be evolutionarily conditioned to respond to certain kinds of sensory stimuli with a host of generally true, and justified, beliefs about their environment. Thus, within the framework of externalist epistemology, empiricism might not lead so easily to skepticism.

In summary, philosophical empiricists hold no knowledge to be properly inferred or deduced unless it is derived from one's sense-based experience. This view is commonly contrasted

[305] Ibid.

with rationalism, which states that knowledge may be derived from reason independently of the senses. For example, John Locke held that some knowledge (such as knowledge of God's existence) could be arrived at through intuition and reasoning alone.[306] Similarly Robert Boyle, a prominent advocate of the experimental method, held that we have innate ideas.[307] The main continental rationalists (Descartes, Spinoza, and Leibniz) were also advocates of the empirical scientific method.[308]

Between 600 and 200 BC, the Vaisheshika school of Hindu philosophy, founded by the ancient Indian philosopher Kanada, accepted perception and inference as the only two reliable sources of knowledge.[309] The Charvaka school held similar beliefs, asserting that perception is the only reliable source of knowledge while inference obtains knowledge with uncertainty. The earliest Western proto-empiricists were the empiric school of ancient Greek medical practitioners, founded in 330 BC.[310] Its members rejected the three doctrines of the dogmatic school, preferring to rely on the observation of phantasiai (i.e., phenomena, the appearances).The Empiric school was closely allied with Pyrrhonist school of philosophy, which made the philosophical case for their proto-empiricism.

The notion of *tabula rasa* (clean slate or blank tablet) connotes a view of mind as an originally blank or empty recorder (Locke used the words "white paper") on which experience leave mark. This deny that humans have innate ideas. The notion dates back to Aristotle (c. 350 BC): "What the mind (*nous*) thinks must be in it in the same sense as letters are on a tablet (*grammateion*) which bears no actual writing (*grammenon*); this is just what happens in the case of the mind."[311]

Aristotle's explanation of how this was possible was not strictly empiricist in a modern sense, but rather based on his theory of potentiality and actuality, and experience of sense perceptions still requires the help of the active *nous*. These notions contrasted with Platonic notions of the human mind as an entity that pre-existed somewhere in the heavens/world of form, before being sent down to join a body on Earth.[312] Aristotle was considered to give a more important position to sense perception than Plato, and commentators in the Middle Ages summarized one of his positions as "*nihil in intellectu nisi prius fuerit in sensu*" (Latin for "nothing in the intellect without first being in the senses").

This idea was later developed in ancient philosophy by the stoic school, from about 330 BC. Stoic epistemology generally emphasized that the mind starts blank, but acquires knowledge as

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[306] Luis E. Loeb, *From Descartes to Hume: Continental Metaphysics and the Development of Modern Philosophy* (Ithaca, Cornell University Press, 1981), 56.
[307] Ibid.
[308] Ibid.
[309] See D.P.S. Bhawuk, *Spirituality and Indian Psychology*, Anthony Marsella (ed.), (Indianapolis: Springer, 2011),172.
[310] *"Greek Medicine: Alexander the Great,"* www.greekmedicine.net.
[311] Aristotle, *On the Soul*, 3.4.430^{a}1
[312] see Plato's *Phaedo* and *Apolog*.

the outside world is impressed upon it.[313] The doxographer Aetius summarizes this view as "When a man is born, the Stoics say, he has the commanding part of his soul like a sheet of paper ready for writing upon."[314]

During the Middle Ages (from the 5th to the 15th century BC) Aristotle's theory of *tabula rasa* was developed by Islamic philosophers starting with Al Farabi (c. 872 – 951 BC), developing into an elaborate theory by Avicenna (c. 980 – 1037)and demonstrated as a thought experiment by Ibn Tufail. For Avicenna (Ibn Sina), for example, the *tabula rasa* is a pure potentiality that is actualized through education, and knowledge is attained through empirical familiarity with objects in this world from which one abstracts universal concepts developed through a syllogistic method of reasoning in which observations lead to propositional statements which when compounded lead to further abstract concepts[315]. The intellect itself develops from a material intellect, which is a potentiality that can acquire knowledge to the active intellect, the state of the human intellect in conjunction with the perfect source of knowledge.[316] So the immaterial active intellect, separate from any individual person, is still essential for understanding to occur.

In the 12th century CE, the Andalusian Muslim philosopher and novelist Abu Bakr Ibn Tufail included the theory of *tabula rasa* as a thought experiment in his Arabic philosophical novel, *Hayy ibn Yaqdhan* in which he depicted the development of the mind of a feral child "from a *tabula rasa* to that of an adult, in complete isolation from society" on a desert island, through experience alone. The Latin translation of his philosophical novel, entitled *Philosophus Autodidactus*, published by Edward Pococke the Younger in 1671, had an influence on John Locke's formulation of *tabula rasa* in *An Essay Concerning Human Understanding*.[317]

A similar Islamic theological novel, *Theologus Autodidactus*, was written by the Arab theologian and physician Ibn al-Nafis in the 13th century. It also dealt with the theme of empiricism through the story of a feral child on a desert island, but departed from its predecessor by depicting the development of the protagonist's mind through contact with society rather than in isolation from society.[318] During the 13th century Thomas Aquinas adopted the Aristotelian position that the senses are essential to the mind into scholasticism; while Bonaventure (1221–1274), one of Aquinas' strongest intellectual opponents, offered some of the strongest arguments in favour of the Platonic idea of the mind.

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[313]Jeffrey Bardzell, *Speculative Grammar and Stoic Language Theory in Medieval Allegorical Narrative: From Prudentius to Alan of Lille* (New York: Routledge, 2014), 18–19.
[314]Diels-Kranz, A.A. Long and D.N. Sedley (trans.), *The Hellenistic Philosophers* (Vol. 1) (Cambridge, Ma: Cambridge, 1987), 238.
[315]Sajjad H. Rizvi (2006), "Avicenna/Ibn Sina (c. 980–1037)," *Internet Encyclopedia of Philosophy*.
[316] Ibid.
[317]G. A. Russell, *The 'Arabick' Interest of the Natural Philosophers in Seventeenth-Century England* (New York: Brill Publishers, 1994), 224.
[318] Ibid.

In the late renaissance, various writers began to question the medieval and classical understanding of knowledge acquisition in a more fundamental way. In political and historical writing Niccolò Machiavelli and his friend Francesco Guicciardini initiated a new realistic style of writing. Machiavelli in particular was scornful of writers on politics who judged everything in comparison to mental ideals and demanded that people should study the effectual truth instead. Their contemporary, Leonardo da Vinci (1452–1519) said, "If you find from your own experience that something is a fact and it contradicts what some authority has written down, then you must abandon the authority and base your reasoning on your own findings."[319]

Significantly, an empirical metaphysical system was developed by the Italian philosopher Bernardino Telesio which had an enormous impact on the development of later British philosophers such as Francis Bacon, who regarded Telesio as "the first of the moderns."[320]Telesio's influence can also be seen on the French philosophers René Descartes and Pierre Gassendi.[321]

The decidedly anti-Aristotelian and anti-clerical music theorist Vincenzo Galilei (c.1520– 1591), father of Galileo and the inventor of monody, made use of the method in successfully solving musical problems, firstly, of tuning such as the relationship of pitch to string tension and mass in stringed instruments, and to the volume of air in wind instruments; and secondly to composition, by his various suggestions to composers. The Italian word he used for "experiment" was *esperienza*. It is known that he was the essential pedagogical influence upon the young Galileo, his eldest son, arguably one of the most influential empiricists in history. Vincenzo, through his tuning research, found the underlying truth at the heart of the misunderstood myth of 'Pythagoras' hammers' (the square of the numbers concerned yielded those musical intervals, not the actual numbers, as believed), and through this and other discoveries that demonstrated the fallibility of traditional authorities, a radically empirical attitude developed, passed on to Galileo, which regarded "experience and demonstration" as the *sine qua non* of valid rational enquiry.

14.4 British Empiricism

British empiricism, a retrospective characterization, emerged during the 17th century as an approach to early modern philosophy and modern science. Although integral to this overarching transition, Francis Bacon, in England, advanced empiricism at 1620, whereas René Descartes, in France, upheld rationalism around 1640, a distinction drawn by Immanuel Kant, in Germany, near 1780. Contributing later in the 17th century, Thomas Hobbes and Baruch Spinoza are retrospectively identified likewise as an empiricist and a rationalist, respectively. In the Enlightenment during the 18th century, both George Berkeley, in England, and David Hume,

[319]Camillia Matuk, "Seeing the Body: The Divergence of Ancient Chinese and Western Medical Illustration," *Journal of Bio-communication*, Vol. 32(1), (2006), 1.
[320] Michaela Boenke, "Bernardino Telesio," *The Stanford Encyclopedia of Philosophy* Edward N. Zalta (ed.), (2018), URL = <https://plato.stanford.edu/archives/win2018/entries/telesio/>.
[321] Ibid.

in Scotland, became leading exponents of empiricism, a lead precedented in the late 17th century by John Locke, also in England, hence the dominance of empiricism in British philosophy.

14.4.1 John Locke

In response to the early-to-mid-17th century continental rationalism, John Locke (1632–1704) proposed in *An Essay Concerning Human Understanding* (1689) a very influential view wherein the *only* knowledge humans can have is *a posteriori*, that is, based upon experience. Locke is famously attributed with holding the proposition that the human mind is a *tabula rasa*, a "blank tablet," in Locke's words "white paper," on which the experiences derived from sense impressions as a person's life proceeds are written. There are two sources of our ideas: sensation and reflection. In both cases, a distinction is made between simple and complex ideas. The former are unanalysable, and are broken down into primary and secondary qualities. Primary qualities are essential for the object in question to be what it is. Without specific primary qualities, an object would not be what it is. For example, an apple is an apple because of the arrangement of its atomic structure. If an apple were structured differently, it would cease to be an apple. Secondary qualities are the sensory information we can perceive from its primary qualities. For example, an apple can be perceived in various colours, sizes, and textures but it is still identified as an apple. Therefore, its primary qualities dictate what the object essentially is, while its secondary qualities define its attributes. Complex ideas combine simple ones, and dividethem into substances, modes, and relations. According to Locke, our knowledge of things is a perception of ideas that are in accordance or discordance with each other, which is very different from the quest for certainty of Descartes.

14.4.2 George Berkeley

A generation later, the Irish Anglican bishop, George Berkeley (1685–1753), determined that Locke's view immediately opened a door that would lead to eventual atheism. In response to Locke, he put forth in his *Treatise Concerning the Principles of Human Knowledge* (1710) an important challenge to empiricism in which things *only* exist either as a *result* of their being perceived, or by virtue of the fact that they are an entity doing the perceiving. (For Berkeley, God fills in for humans by doing the perceiving whenever humans are not there to do it.) In his text *Alciphron*, Berkeley maintained that any order humans may see in nature is the language or handwriting of God.[322] Berkeley's approach to empiricism would later come to be called subjective idealism.

14.4.3 David Hume

The Scottish philosopher David Hume (1711–1776) responded to Berkeley's criticisms of Locke, as well as other differences between early modern philosophers, and moved empiricism to a new level of skepticism. Hume argued in keeping with the empiricist view that all knowledge is derived from sense experience, but he accepted that this has implications not normally acceptable to philosophers. He wrote, for example: Locke divides all arguments into demonstrative and

[322]Thornton Stephen "Berkeley's Theory of Reality" in *The Journal of the Limerick Philosophical Society*, 1987, 60.

probable. On this view, we must say that it is only probable that all men must die or that the sun will rise to-morrow, because neither of these can be demonstrated. But to conform our language more to common use, we ought to divide arguments into demonstrations, proofs, and probabilities—by 'proofs' meaning arguments from experience that leave no room for doubt or opposition.[323]

And:

> I believe the most general and most popular explication of this matter, is to say, that finding from experience, that there are several new productions in matter, such as the motions and variations of body, and concluding that there must somewhere be a power capable of producing them, we arrive at last by this reasoning at the idea of power and efficacy. But to be convinced that this explication is more popular than philosophical, we need but reflect on two very obvious principles. First, That reason alone can never give rise to any original idea, and secondly, that reason, as distinguished from experience, can never make us conclude, that a cause or productive quality is absolutely requisite to every beginning of existence. Both these considerations have been sufficiently explained: and therefore shall not at present be any farther insisted on.[324]

Hume divided all of human knowledge into two categories: *relations of ideas* and *matters of fact.* Mathematical and logical propositions (e.g. "that the square of the hypotenuse is equal to the sum of the squares of the two sides") are examples of the first, while propositions involving some contingent observation of the world (e.g. "the sun rises in the East") are examples of the second. All of people's ideas, in turn, are derived from their "impressions." For Hume, an impression corresponds roughly with what we call a sensation. To remember or to imagine such impressions is to have an idea. Ideas are therefore the faint copies of sensations.[325]

Hume maintained that no knowledge, even the most basic beliefs about the natural world, can be conclusively established by reason. Rather, he maintained, our beliefs are more a result of accumulated *habits*, developed in response to accumulated sense experiences.[326] Among his many arguments Hume also added another important slant to the debate about scientific method—that of the problem of induction. He argued that it requires inductive reasoning to arrive at the premises for the principle of inductive reasoning, and therefore the justification for

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[323] D. *Hume. "Of Probability," Enquiries Concerning the Human Understanding and Concerning the Principles of Morals* (Oxford: Clarendon Press, 1975).
[324] Ibid., *"Of the Idea of a Necessary Connexion."*
[325] Cf. H.C. Ezebuilo, "Locke, Berkeley and Hume, 96-99.
[326] Ibid.

inductive reasoning is a circular argument.[327]Among Hume's conclusions regarding the problem of induction is that there is no certainty that the future will resemble the past. Thus, as a simple instance posed by Hume, we cannot know with certainty by inductive reasoning that the sun will continue to rise in the East, but instead come to expect it to do so because it has repeatedly done so in the past.

Hume concluded that such things as belief in an external world and belief in the existence of the self were not rationally justifiable. According to Hume these beliefs were to be accepted nonetheless because of their profound basis in instinct and custom. His lasting legacy, however, was the doubt that his skeptical arguments cast on the legitimacy of inductive reasoning, allowing many skeptics who followed to cast similar doubt.

14.4.3 Phenomenalism

Most of Hume's followers have disagreed with his conclusion that belief in an external world is *rationally* unjustifiable, contending that Hume's own principles implicitly contained the rational justification for such a belief, that is, beyond being content to let the issue rest on human instinct, custom and habit.[328] According to an extreme empiricist theory known as phenomenalism, anticipated by the arguments of both Hume and George Berkeley, a physical object is a kind of construction out of our experiences. Phenomenalism is the view that physical objects, properties, events (whatever is physical) are reducible to mental objects, properties, events. Ultimately, only mental objects, properties, events, exist—hence the closely related term subjective idealism. By the phenomenalistic line of thinking, to have a visual experience of a real physical thing is to have an experience of a certain kind of group of experiences. This type of set of experiences possesses a constancy and coherence that is lacking in the set of experiences of which hallucinations, for example, are a part. As John Stuart Mill put it in the mid-19th century, matter is the "permanent possibility of sensation."[329] Mill's empiricism went a significant step beyond Hume in still another respect: in maintaining that induction is necessary for *all* meaningful knowledge including mathematics. As summarized by D.W. Hamlin:

> Mill claimed that mathematical truths were merely very highly confirmed generalizations from experience; mathematical inference, generally conceived as deductive [and *a priori*] in nature, Mill set down as founded on induction. Thus, in Mill's philosophy there was no real place for knowledge based on relations of ideas. In his view logical and mathematical necessity is psychological; we are merely unable to conceive any other possibilities than those that logical and mathematical propositions assert. This is

[327] Ibid.

[328] H. Morick, *Challenges to Empiricism* (Indianapolis: Hackett Publishing, 1980), 14.

[329] J.S. Mill, "An Examination of Sir William Rowan Hamilton's Philosophy," in A.J. Ayer and Ramond Winch (eds.), *British Empirical Philosophers* (New York, NY: Simon and Schuster, 1968), 51-52.

> perhaps the most extreme version of empiricism known, but it has not found many defenders.[330]

Mill's empiricism thus held that knowledge of any kind is not from direct experience but an inductive inference from direct experience. The problems other philosophers have had with Mill's position center around the following issues: Firstly, Mill's formulation encounters difficulty when it describes what direct experience is by differentiating only between actual and possible sensations. This misses some key discussion concerning conditions under which such "groups of permanent possibilities of sensation" might exist in the first place. Berkeley put God in that gap; the phenomenalists, including Mill, essentially left the question unanswered. In the end, lacking an acknowledgement of an aspect of reality that goes beyond mere possibilities of sensation, such a position leads to a version of subjective idealism.

Questions of how floor beams continue to support a floor while unobserved, how trees continue to grow while unobserved and untouched by human hands, etc., remain unanswered, and perhaps unanswerable in these terms.[331] Secondly, Mill's formulation leaves open the unsettling possibility that the "gap-filling entities are purely possibilities and not actualities at all."[332] Thirdly, Mill's position, by calling mathematics merely another species of inductive inference, misapprehends mathematics. It fails to fully consider the structure and method of mathematical science, the products of which are arrived at through an internally consistent deductive set of procedures which do not, either today or at the time Mill wrote, fall under the agreed meaning of induction.[333]

The phenomenalist phase of post-Humean empiricism ended by the 1940s, for by that time it had become obvious that statements about physical things could not be translated into statements about actual and possible sense data.[334] If a physical object statement is to be translatable into a sense-data statement, the former must be at least deducible from the latter. But it came to be realized that there is no finite set of statements about actual and possible sense-data from which we can deduce even a single physical-object statement. The translating or paraphrasing statement must be couched in terms of normal observers in normal conditions of observation. There is, however, no *finite* set of statements that are couched in purely sensory terms and can express the satisfaction of the condition of the presence of a normal observer. According to phenomenalism, to say that a normal observer is present is to make the hypothetical statement that were a doctor to inspect the observer, the observer would appear to the doctor to be normal. But, of course, the doctor himself must be a normal observer. If we are to specify this doctor's normality in sensory terms, we must make reference to a second doctor who, when inspecting the sense organs of the first doctor, would himself have to have the sense data a normal observer has when inspecting

[330] "Empiricism," *Macmillan Encyclopedia of Philosophy*, vol.2, (1969), 503.
[331] Ibid.
[332] Ibid.
[333] Ibid.
[334] John Bolender, "Factual Phenomenalism: A Supervenience Theory," *Sorites*, no. 9, 16–31.

the sense organs of a subject who is a normal observer. And if we are to specify in sensory terms that the second doctor is a normal observer, we must refer to a third doctor, and so on.[335]

14.5 Logical Empiricism

Logical empiricism (also logical positivism or neopositivism) was an early 20th century attempt to synthesize the essential ideas of British empiricism (example, a strong emphasis on sensory experience as the basis for knowledge) with certain insights from mathematical logic that had been developed by Gottlob Frege and Ludwig Wittgenstein. Some of the key figures in this movement were Otto Neurath, Moritz Schlick and the rest of the Vienna Circle, along with A.J. Ayer, Rudolf Carnap and Hans Reichenbach.

The neopositivists subscribed to a notion of philosophy as the conceptual clarification of the methods, insights and discoveries of the sciences. They saw in the logical symbolism elaborated by Frege (1848–1925) and Bertrand Russell (1872–1970) a powerful instrument that could rationally reconstruct all scientific discourse into an ideal, logically perfect, language that would be free of the ambiguities and deformations of natural language. This gave rise to what they saw as metaphysical pseudoproblems and other conceptual confusions. By combining Frege's thesis that all mathematical truths are logical with the early Wittgenstein's idea that all logical truths are mere linguistic tautologies, they arrived at a twofold classification of all propositions: the analytic (*a priori*) and the synthetic (*a posteriori*).[336]On this basis, they formulated a strong principle of demarcation between sentences that have sense and those that do not: the so-called "verification principle". Any sentence that is not purely logical, or is unverifiable, is devoid of meaning. As a result, most metaphysical, ethical, aesthetic and other traditional philosophical problems came to be considered pseudoproblems.[337]

In the extreme empiricism of the neopositivists, any genuinely synthetic assertion must be reducible to an ultimate assertion (or set of ultimate assertions) that expresses direct observations or perceptions. In later years, Carnap and Neurath abandoned this sort of *phenomenalism* in favor of a rational reconstruction of knowledge into the language of an objective spatio-temporal physics. That is, instead of translating sentences about physical objects into sense-data, such sentences were to be translated into so-called *protocol sentences*, for example, "*X* at location *Y* and at time *T* observes such and such."[338] The central theses of logical positivism (verificationism, the analytic–synthetic distinction, reductionism, etc.) came under sharp attack by thinkers such as Nelson Goodman, W.V. Quine, Hilary Putnam, Karl Popper, and Richard Rorty. By the late 1960s, it had become evident to most philosophers that the movement had

[335]*Roderick Chisholm M.,* "The Problem of Empiricism," *The Journal of Philosophy,* 45(19), (1948), 512–13.
[336] Peter Achinstein, and Stephen F. Barker, *The Legacy of Logical Positivism: Studies in the Philosophy of Science* (Baltimore: Johns Hopkins University Press, 1969).
[337] Ibid.
[338] Nicholas Rescher, *The Heritage of Logical Positivism* (Lanham: University Press of America, 1985, 244.

pretty much run its course, though its influence is still significant among contemporary analytic philosophers such as Michael Dummett and other anti-realists.

14.6 Criticism and Evaluation

The earliest expressions of empiricism in ancient Greek philosophy were those of the Sophists. In reaction to them, Plato presented the rationalistic view that humans have only "opinion" about changing, perceptible, existing things in space and time; that "knowledge" can be had only of timeless, necessary truths; and that the objects of knowledge—the unchanging and imperceptible forms or universals (such as the Beautiful, the Just, and so on)—are the only things that are truly real. The circles and triangles of geometrical "knowledge," in this view, are quite different in their perfect exactness from the approximately circular and triangular things present to human senses. In his dialogue the Phaedo, Plato expounded a theory of literally innate ideas; humans, for example, have a conception of exact Equality, which, since it could not have been supplied by the senses, must have been acquired by the soul before it was embodied.

Aristotle agreed with Plato that knowledge is of the universal but held that such universal forms should not be conceived as "separated" from the matter embodying them. This belief does not make Aristotle an empiricist, though he was certainly a less extreme rationalist than Plato. Aristotle took the rationalist view that every science or body of knowledge must resemble "Euclidean geometry" in consisting of deductions from first principles that are self-evidently and necessarily true and that, although the senses acquaint humans with the sensible forms of things, there cannot be knowledge of them unless reason is brought into play to apprehend their intelligible forms.

The Stoic view of "common notions," or beliefs that are held by all humans—a potentially rationalistic element in an otherwise empirical school of thought—was expanded during the early medieval period by St. Augustine, a thoroughgoing rationalist. The Stoic common notions, Augustine held, are truths that God has implanted in the human mind through direct illumination.

Although the early modern expression of empiricism in the 17th century by Francis Bacon heralded the scientific age, its influence was lessened by his failure to appreciate the revolutionary use of mathematics that comprised the genius of Galileo's new physics and, even more fundamentally, by his underestimation of the need for imaginative conjecture in the formation of scientific hypotheses to restrict the overwhelming number of facts that would otherwise have to be handled. In contrast to Bacon's view, the philosopher and mathematician René Descartes (1596–1650), one of the principal founders of modern thought, developed a form of rationalism that was more immediately influential. For Descartes some of the ideas that are critically important for philosophy, mathematics, and physics are innate, and sense experience is at most the agency that elicits these ideas. In principle, much of human knowledge is a priori and demonstrable by pure reasoning, but in practice, because the human

intellect is finite, it is necessary to rely on experience to confirm these propositions when rational proof is beyond reach.

In England, innate ideas and knowledge were defended by Edward Lord Herbert of Cherbury (1582–1648), whose philosophy was a precursor of Deism, and by a school of Puritan humanists known as the Cambridge Platonists. The case for innate ideas, however, is hard to establish; there can be in the nature of the case little actual evidence that one can possess concepts before having had some relevant experience.

In the second half of the 17th century, the empiricist views of Locke were similarly controverted by Leibniz,[339] who examined Locke's views in minute detail arguing that ideas can be virtually innate in a less trivial sense than Locke allowed. Interpreting Locke's notion of reflection as reasoning rather than as introspection, Leibniz supposed that Locke was more of a rationalist than he really was.

In contemporary philosophy, there are thinkers who, though broadly sympathetic to logical positivism, have voiced reservations about some of the doctrines often associated with traditional empiricism. One important philosopher of science, Karl Popper (1902–1994), rejected the inductivism that views the growth of empirical knowledge as the result of a mechanical routine of generalization based on experienced correlations. Popper argued that a statement is empirical if it is falsifiable by experience,[340] that is, if there are possible experiences that would show that the statement is false. Given the central role that experience plays in falsification, however, Popper still fell squarely within the empiricist camp.

An influential American philosopher and logician, W.V.O. Quine (1908–2000), was critical of the logical positivists' frequent recourse to the concept of meaning and rejected the sharp distinction they made between analytic and synthetic truths. Quine held that human concepts and beliefs are the joint outcome of experience and convention, and he denied that the role of the two factors can be as readily distinguished as empiricists assert.
The theory of knowledge has been one of the central disciplines of Western philosophy since the 17th century, and its most basic issue is that between empiricism and rationalism, an issue that is still being actively debated. On the one hand, the idea that science rests on substantial but nonempirical presuppositions has been put in question by the fact that in some areas it seems to get along without them: without conservation in cosmology, without causality in quantum physics. On the other hand, the traditional theory of the innate powers of the mind was reanimated by the considerations underlying the theory of language offered by the American linguist Noam Chomsky, who holds that the learning of

[339] Leibniz, "New Essay Concerning Human Understanding," https://www.britannica.com/topic/new-essay-concerning-human-understanding/
[340] H.C. Ezebuilo, "Locke, Berkeley and Hume: A Brief Survey of Empiricism," *International Journal of Research in Education, Humanities and Commerce* 1(2), (2020).

language is far too rapid and too universal to be attributed entirely to an empirical process of conditioning.[341] The basic strength of empiricism consists in its recognition that human concepts and beliefs apply to a world outside oneself, and that it is by way of the senses that this world acts upon the individual. The question, however, of how much the mind itself contributes to the task of processing its sensory input is one that has remained unanswered.

[341] Stephen P. Stich, Between Chomskian Rationalism and Popperian EMpericism. *The British Journal for the Philosophy of Science* 30(4), 1979,329-347.

CHAPTER FIFTEEN

RATIONALISM

15.1 What is Rationalism?

Rationalism is the epistemological view that reason is the chief source of knowledge and the main determinant of what constitutes knowledge. More broadly, it can also refer to any view which appeals to reason as a source of knowledge or justification. Rationalism is one of the two classical views in epistemology, the other being empiricism. Rationalists claim that the mind, through the use of reason, can directly grasp certain truths in various domains, including logic, mathematics, ethics, and metaphysics. Rationalist views can range from modest views in mathematics and logic (such as that of Gottlob Frege) to ambitious metaphysical systems (such as that of Baruch Spinoza). Some of the most famous rationalists include Plato, René Descartes, Baruch Spinoza, and Gottfried Leibniz.

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 that the intellect can grasp directly. There are, according to the rationalists, certain rational principles—especially in logic and mathematics, and even in ethics and metaphysics—that 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 has long been the rival of empiricism, the doctrine that all knowledge comes from, and must be tested by, sense experience. As against this doctrine, rationalism holds reason to be a faculty that can lay hold of truths beyond the reach of sense perception, both in certainty and generality. In stressing the existence of a "natural light," rationalism has also been the rival of systems claiming esoteric knowledge, whether from mystical experience, revelation, or intuition, and has been opposed to various irrationalisms that tend to stress the biological, the emotional or volitional, the unconscious, or the existential at the expense of the rational.

15.2 Expressions of Rationalism

Rationalism has somewhat different meanings in different fields, depending upon the kind of theory to which it is opposed. In the psychology of perception, for example, rationalism is in a sense opposed to the *genetic psychology* of the Swiss scholar Jean Piaget (1896–1980), who, exploring the development of thought and behaviour in the infant, argued that the categories of the mind develop only through the infant's experience in concourse with the world. Similarly, rationalism is opposed to *transactionalism*, a point of view in psychology according to which human perceptual skills are achievements, accomplished through actions performed in response to an active environment. On this view, the experimental claim is made that perception is conditioned by probability judgments formed on the basis of earlier actions performed in similar

situations. As a corrective to these sweeping claims, the rationalist defends a *nativism*, which holds that certain perceptual and conceptual capacities are innate—as suggested in the case of depth perception by experiments with "the visual cliff," which, though platformed over with firm glass, the infant perceives as hazardous—though these native capacities may at times lie dormant until the appropriate conditions for their emergence arise.

In the comparative study of languages, a similar nativism was developed beginning in the 1950s by the linguistic theorist Noam Chomsky, who, acknowledging a debt to René Descartes (1596–1650), explicitly accepted the rationalistic doctrine of "innate ideas." Though the thousands of languages spoken in the world differ greatly in sounds and symbols, they sufficiently resemble each other in syntax to suggest that there is "a schema of universal grammar" determined by "innate presettings" in the human mind itself. These presettings, which have their basis in the brain, set the pattern for all experience, fix the rules for the formation of meaningful sentences, and explain why languages are readily translatable into one another. It should be added that what rationalists have held about innate ideas is not that some ideas are full-fledged at birth but only that the grasp of certain connections and self-evident principles, when it comes, is due to inborn powers of insight rather than to learning by experience.

Common to all forms of speculative rationalism is the belief that the world is a rationally ordered whole, the parts of which are linked by logical necessity and the structure of which is therefore intelligible. Thus, in metaphysics it is opposed to the view that reality is a disjointed aggregate of incoherent bits and is thus opaque to reason. In particular, it is opposed to the logical atomisms of such thinkers as David Hume (1711–76) and the early Ludwig Wittgenstein (1889–1951), who held that facts are so disconnected that any fact might well have been different from what it is without entailing a change in any other fact. Rationalists have differed, however, with regard to the closeness and completeness with which the facts are bound together. At the lowest level, they have all believed that the law of contradiction "A and not-A cannot coexist" holds for the real world, which means that every truth is consistent with every other; at the highest level, they have held that all facts go beyond consistency to a positive coherence; that is, they are so bound up with each other that none could be different without all being different.

In epistemology where its claims are clearest, rationalism holds that at least some human knowledge is gained through a priori (prior to experience), or rational, insight as distinct from sense experience, which too often provides a confused and merely tentative approach. In the debate between empiricism and rationalism, empiricists hold the simpler and more sweeping position, the Humean claim that all knowledge of fact stems from perception. Rationalists, on the contrary, urge that some, though not all, knowledge arises through direct apprehension by the intellect. What the intellectual faculty apprehends is objects that transcend sense experience—universals and their relations. A universal is an abstraction, a characteristic that may reappear in various instances: the number three, for example, or the triangularity that all triangles have in common, or the humanity that all human beings have in common. Though these cannot be seen,

heard, or felt, rationalists point out that humans can plainly think about them and about their relations.

This kind of knowledge, which includes the whole of logic and mathematics as well as fragmentary insights in many other fields, is, in the rationalist view, the most important and certain knowledge that the mind can achieve. Such a priori knowledge is both necessary (that, it cannot be conceived as otherwise) and universal, in the sense that it admits of no exceptions. In the philosophy of Immanuel Kant (1724–1804), epistemological rationalism finds expression in the claim that the mind imposes its own inherent categories or forms upon incipient experience.

In ethics, rationalism holds the position that reason, rather than feeling, custom, or authority, is the ultimate court of appeal in judging good and bad, right and wrong. One of the most notable representatives of rational ethics is Kant, who held that the way to judge an act is to check its self-consistency as apprehended by the intellect: to note, first, what it is essentially, or in principle—a lie, for example, or a theft—and then to ask if one can consistently will that the principle be made universal. Is theft, then, right? The answer must be "No," because, if theft were generally approved, people's property would not be their own as opposed to anyone else's, and theft would then become meaningless; the notion, if universalized, would thus destroy itself, as reason by itself is sufficient to show.

In religion, rationalism commonly means that all human knowledge comes through the use of natural faculties, without the aid of supernatural revelation. "Reason" is here used in a broader sense, referring to human cognitive powers generally, as opposed to supernatural grace or faith—though it is also in sharp contrast to so-called existential approaches to truth. Reason, for the rationalist, thus stands opposed to many of the religions of the world, including Christianity, which have held that the divine has revealed itself through inspired persons or writings and which have required, at times, that its claims be accepted as infallible, even when they do not accord with natural knowledge. Religious rationalists hold, on the other hand, that if the clear insights of human reason must be set aside in favour of alleged revelation, then human thought is everywhere rendered suspect—even in the reasonings of the theologians themselves. There cannot be two ultimately different ways of warranting truth, they assert; hence rationalism argues that reason, with its standard of consistency, must be the final court of appeal. Religious rationalism can reflect either a traditional piety, when endeavouring to display the alleged sweet reasonableness of religion, or an antiauthoritarian temper, when aiming to supplant religion with the "goddess of reason."

15.3 History of Rationalism

15.3.1 Epistemological Rationalism in Ancient Philosophies

The first Western philosopher to stress rationalist insight was Pythagoras, a shadowy figure of the 6th century BCE. Noticing that, for a right triangle, a square built on its hypotenuse equals the sum of those on its sides and that the pitches of notes sounded on a lute bear a mathematical relation to the lengths of the strings, Pythagoras held that these harmonies reflected the ultimate nature of reality. He summed up the implied metaphysical rationalism in the words "All is number." It is probable that he had caught the rationalist's vision, later seen by Galileo (1564–1642), of a world governed throughout by mathematically formulable laws.
The difficulty in this view, however, is that, working with universals and their relations, which, like the multiplication table, are timeless and changeless, it assumes a static world and ignores the particular, changing things of daily life. The difficulty was met boldly by the rationalist Parmenides (born c. 515 BCE), who insisted that the world really is a static whole and that the realm of change and motion is an illusion, or even a self-contradiction. His disciple Zeno of Elea (c. 495–c. 430 BCE) further argued that anything thought to be moving is confronted with a row of points infinite in number, all of which it must traverse; hence it can never reach its goal, nor indeed move at all. Of course, perception tells us that we do move, but Zeno, compelled to choose between perception and reason, clung to reason.

The exalting of rational insight above perception was also prominent in Plato (c. 427–c. 347 BCE). In the *Meno*, Socrates (c. 470–399 BCE) dramatized the innateness of knowledge by calling upon an illiterate slave boy and, drawing a square in the sand, proceeding to elicit from him, step by step, the proof of a theorem in geometry of which the boy could never have heard (to double the size of a square, draw a square on the diagonal). Such knowledge, rationalists insist, is certain, universal, and completely unlearned.

Plato so greatly admired the rigorous reasoning of geometry that he is alleged to have inscribed over the door of his Academy the phrase "Let no one unacquainted with geometry enter here." His famous forms are accessible only to reason, not to sense. But how are they related to sensible things? His answers differed. Sometimes he viewed the forms as distilling those common properties of a class in virtue of which one identifies anything as a member of it. Thus, what makes anything a triangle is it's having three straight sides; this is its essence. At other times, Plato held that the form is an ideal, a non-sensible goal to which the sensible thing approximates; the geometer's perfect triangle "never was on sea or land," though all actual triangles more or less embody it. He conceived the forms as more real than the sensible things that are their shadows and saw that philosophers must penetrate these invisible essences and see with their mind's eye how they are linked together. For Plato they formed an orderly system that was at once eternal, intelligible, and good.

Plato's successor Aristotle (384–322 BCE) conceived of the work of reason in the same way, though he did not view the forms as independent. His chief contribution to rationalism lay in his syllogistic logic, regarded as the chief instrument of rational explanation. Humans explain particular facts by bringing them under general principles. Why does one think Socrates will die? Because he is human, and humans are mortal. Why should one accept the general principle itself that all humans are mortal? In experience such principles have so far held without exception. But the mind cannot finally rest on this sort of explanation. Humans never wholly understand a fact or event until they can bring it under a principle that is self-evident and necessary; they then have the clearest explanation possible. On this central thesis of rationalism, the three great Greeks were in accord. Nothing comparable in importance to their thought appeared in rationalistic philosophy in the next 1,800 years, though the work of St. Thomas Aquinas (c. 1225–74) was an impressive attempt to blend Greek rationalism and Christian revelation into a single harmonious system.

15.3.2 Epistemological Rationalism in Modern Philosophies

The first modern rationalist was Descartes, an original mathematician whose ambition was to introduce into philosophy the rigour and clearness that delighted him in mathematics. He set out to doubt everything in the hope of arriving in the end at something indubitable. This he reached in his famous *cogito ergo sum*, "I think, therefore I am"; for to doubt one's own doubting would be absurd. Here then was a fact of absolute certainty, rendered such by the clearness and distinctness with which it presented itself to his reason. His task was to build on this as a foundation, to deduce from it a series of other propositions, each following with the same self-evidence. He hoped thus to produce a philosophical system on which people could agree as completely as they do on the geometry of Euclid. The main cause of error, he held, lay in the impulsive desire to believe before the mind is clear. The clearness and distinctness upon which he insisted was not that of perception but of conception, the clearness with which the intellect grasps an abstract idea, such as the number three or its being greater than two.

His method was adopted in essentials by both Benedict Spinoza (1632–77) and G.W. Leibniz (1646–1716), who agreed that the framework of things could be known by a priori thinking. They differed from him, however, in their starting points. What was most undeniable to Spinoza was not the existence of his self but that of the universe, called by him "substance." From the idea of substance, and with the aid of a few definitions and axioms, he derived his entire system, which he set forth in his *Ethics* in a formal fashion patterned after Euclid's geometry. Still, for both Spinoza and Leibniz much in nature remained stubbornly opaque. Leibniz distinguished necessary truths, those of which the opposite is impossible (as in mathematics), from contingent truths, the opposite of which is possible, such as "snow is white." But was this an ultimate distinction? At times Leibniz said boldly that if only humans knew

enough, they would see that every true proposition was necessarily true—that there are no contingent truths, that snow must be white.

How, then, does reason operate and how is it possible to have knowledge that goes beyond experience? A new answer was given by Immanuel Kant in his *Critique of Pure Reason* (1781; 1787), which, as he said, involved a Copernican revolution in philosophy. The reason that logic and mathematics will remain valid for all experience is simply that their framework lies within the human mind; they are forms of arrangement imposed from within upon the raw materials of sensation. Humans will always find things arranged in certain patterns because it is they who have unwittingly so arranged them. Kant held, however, that these certainties were bought at a heavy price. Just because *a priori* insights are a reflection of the mind, they cannot be trusted as a reflection of the world outside the mind. Whether the rational order in which sensation is arranged—the order, for example, of time, space, and causality—represents an order holding among things-in-themselves (German *Dinge-an-sich*) which cannot be known. Kant's rationalism was thus the counterpart of a profound skepticism.

G.W.F. Hegel (1770–1831), the most thoroughgoing of rationalist thinkers, attempted to break out of this skepticism. He argued that to think of an unknowable is already to bring it within the sphere of what is known and that it is meaningless to talk of a region in which logic is invalid. Further, to raise the question "Why?" is to presume that there is an intelligible answer to it; indeed, the faith of the philosopher must be that the real is the rational and the rational real, for this faith is implicit in the philosophical enterprise itself. As an attempt to understand and explain the world, philosophy is a process of placing something in a context that reveals it as necessary. But this necessity is not, as earlier rationalists had supposed, an all-or-nothing affair issuing in a self-evident finality. Understanding is a matter of degree. What alone would wholly satisfy thought is a system that is at once all-inclusive and so ordered that its parts entail each other. Hegel believed that the universe constitutes such a whole and, as an idealist, held that it is a single, absolute mind. To the degree that philosophers embody and realize this mind, their own minds will achieve both truth and reality. Indeed, the advance of civilization reflects the enlarging presence and control of such a system in the human spirit. Broadly similar rationalistic systems were developed in England by F.H. Bradley (1846–1924) and Bernard Bosanquet (1848–1923) and in America by Josiah Royce (1855–1916). However, we shall consider the works of these major rationalists

Major Proponents of Rationalism

While the roots of Rationalism may go back to the Eleatics and Pythagoreans of ancient Greece, or at least to Socrates, Plato, Aristotle and the Neo-Platonists, the definitive formulation of the theory had to wait until the seventeenth Century philosophers of the Age of Reason.

René Descartes is one of the earliest and best known proponents of Rationalism. He believed that knowledge of eternal truths (e.g. mathematics and the epistemological and metaphysical foundations of the sciences) could be attained by reason alone, without the need for any sensory experience. Other knowledge (such as the knowledge of physics) required experience of the world, aided by the scientific method - a moderate rationalist position. For instance, his famous dictum *"Cogito ergo sum"* (*I think, therefore I am*) is a conclusion reached *apriori* and not through an inference from experience. Descartes held that some ideas (innate ideas) come from God; other ideas are derived from sensory experience; and still others are fictitious (created by the imagination). Of these, the only ideas which are certainly valid, according to Descartes, are those which are innate.

Baruch Spinoza expanded upon Descartes' basic principles of Rationalism. His philosophy centered on several principles, most of which relied on his notion that God is the only absolute substance (similar to Descartes' conception of God), and that substance is composed of two attributes, thought and extension. He believed that all aspects of the natural world (including Man) were modes of the eternal substance of God, and can therefore only be known through pure thought or reason.

Gottfried Leibniz attempted to rectify what he saw as some of the problems that were not settled by Descartes. This he did by combining Descartes' work with Aristotle's notion of form and his own conception of the universe as composed of monads. He believed that ideas exist in the intellect innately, but only in a virtual sense, and it is only when the mind reflects on itself that those ideas are actualized.

Immanuel Kant started as a traditional rationalist, having studied Leibniz and Christian Wolff (1679 - 1754). After studying the empiricist David Hume's works, he developed a distinctive and very influential Rationalism of his own, which attempted to synthesize the traditional rationalist and empiricist traditions.

Descartes

The advent of the Age of Science, mathematical sciences such as arithmetic, geometry etc., alongside the Renaissance came with a new outlook of the world, which involved a paradigm shift from the previous foundations of Philosophy and academic discourse in general. Philosophers struggled to get rid of its footings on Scholasticism and Aristotelian foundation. History records the wave of thought at the beginning of this age as 'Continental Rationalism' which was pioneered by René Descartes and later propagated by Baruch Spinoza and Gottfried Leibnitz. They maintain that genuine knowledge has its foundation in thought or reason. According to them, the mind is full of rational content, inborn ideas, and innate principles.

Dethronement of Traditional Philosophy

René Descartes (1596-1650) often known in Latin as Renatus Cartesius, born in the town of *La Haye* in Touraine, Brittany, France, studied Logic, Mathematics and Philosophy at the renowned Jesuit college of Le Fleche. His major works include;*Discourse on Method* (1637), *Meditations on First Philosophy* (1641) and *Principles of Philosophy* (1644).Descartes was chiefly concerned with the problem of intellectual certainty.Unsatisfied by the methods of his predecessors and pressured by the urge to break away from a 'Philosophy' having its roots in uncertainties, dogmas, and hearsays, René Descartes by means of the certitude of mathematics and influenced by the **sciences** of his time, sought to establish a rational foundation for his philosophy which would be so certain in an unassailable manner.He insists that "nothing solid could have been built upon such shaky foundations"[342] (the foundations of past philosophies and false doctrines).Impressed by the exactness of Mathematics, he believed that the basis for his own philosophy would be a truth apprehended by the mind alone which would be self-evident and reliable like the mathematical theorems. He says, "I resolved one day to undertake studies within myself too and to use all the powers of my mind in choosing the paths I should follow."[343]

Enthronement of the Cartesian Methods

Descartes did not find the traditional Aristotelian style of Logic appealing and leading to indubitable. For him, Aristotle's deductive logic (syllogism) does not lead to the discovery of any new facts. Rather, it draws inferences from one already existing fact to the other. Against this unreliable system, Descartes enthrones his own methods of **intuition** and **deduction** as the only two guaranteed ways of arriving at indubitable truth(s).For Descartes, intuition is the conception which an unclouded and attentive mind gives us so readily and distinctly that we are wholly freed from doubt about that which we understand which springs from the light of reason alone. Deduction on the other hand follows from what is given us in intuition and also leads us to an indubitable truth. According to Descartes, deduction is that by which we understand al necessary inference of other facts that are known with certainty. The first principles are given alone by intuition while the remote conclusions are foregrounded by deduction.

Descartes' Methodological Skepticism

Descartes was of the idea that before imploring the light of reason to acquire intuitive truths, he needs to exhume himself of all previously held beliefs. He points out that our firm opinions and beliefs originate from the senses and since these capacities (senses of perception) are deceptive, because the perceptions gotten through them are inconsistent, vague, illusive, and therefore cannot to be trusted. To begin with, Descartes suggests that one needs to primarily investigate the foundations on which all previously held opinions depend, on account of their dubitability. This must be done cautiously for even the highly undoubtful and improbable of our beliefs could appear false. Firstly, doubt has to be the starting point for his search of certainty. Secondly, 'all'previous beliefs must be subject to doubt provided they can be doubted. Thirdly, that which

[342]René Descartes,*Discourse on the Method*, trans. John Cottingham, Robert Stoothoff, and Dugald Murdoch, in *The Philosophical Writings of Descartes*, vol. 1 (Cambridge, England: Cambridge University Press, 1985), *1.9*, 115.
[343]Ibid.,*1.10*, 116.

is doubted must be considered false until proven indubitable. However, in doubting these sorts of beliefs, Descartes is not asserting extreme skepticism. His position is more properly labeled as "methodological skepticism" for he uses the skeptical stance as a tool or method for testing his beliefs; hence the name, Methodic Doubt.

***Cogito Ergo Sum*- Descartes' Archimedean Point**

Descartes earlier stated that in his rigorous search for a solid foundation for philosophy, he had to discard all erroneous beliefs. He then notes that if he could find just one thing, however slight, that is certain and unshakable, that would be sufficient to counter his doubts and establish a philosophy. He continued in his system of methodic doubt until a point where he recognized that he could no longer doubt the fact that he was doubting. Like Augustine's theory of Divine illumination, the light of reason shown upon Descartes at this point revealing to him that the fact that he was doubting implied that he was thinking, and to think, implied that he exists. Thus, he exclaimed *cogito ergo sum*- I think, therefore I exist. It is the internal condition of the act of doubting which escapes doubt. Hence, this implies that the metaphysical doubt of the existence of the thinking subject is rendered absurd by the awareness of the act of its doubting itself. Considered to be a truth so clear, distinct, and certain to the mind, Descartes established the *cogito* as his sure foundation on which he sets to build his entire philosophical thoughts.

Other Deductive Truths

Using the *cogito* as his standing point for philosophical reflections and meditations, Descartes set out to prove how he could arrive at other indubitable truths by means of deduction. He presented the *cogito* as a self-evident truth arrived at by means of intuition. He further deduces the existence of God from this proposition. His argument can simply be arranged in the following manner:

- I know that I exist, and that I have an idea of an infinite perfect Being (God).
- This idea of an infinite perfect Being cannot be created by a finite imperfect being
- I am a finite imperfect being and therefore not the cause of this infinite perfect idea.
- There necessarily exists an infinite perfect being that created this infinite perfect idea.
- This infinite perfect being is God and he necessarily exists.

This follows the ontological argument style of St. Anselm used in proving God's existence. Though this argument has being flawed from various thinkers, Descartes believes that the proof of God's existence is also an indubitable truth deduced from the proof of his very own existence- the *cogito*.

Sources of Human Knowledge

Descartes is considered as a renowned dualist for his conception of two major substances in the human person namely: *res cogitans* (thinking substance) and *res extensa* (extending substance). Where the former referred to the mind and all mental properties, the latter referred to the bodily organs which were responsible for sensory perception. He recognizes both the mind and senses as two distinct apparatuses that facilitated the acquiring of knowledge. Nevertheless, being at

the for-front of Rationalism, he denigrates knowledge gotten through the sense as unreliable and illusive. He holds the abstract truths apprehended by the mind through reason as the only reliable kind of knowledge.

Spinoza

Another continental rationalist worthy of note is Benedict Baruch Spinoza (1632-1677) a Portuguese Jew. He was highly influenced by René Descartes that the method of Geometry would give us true knowledge of reality. Thus, he attempted writing a geometry of Philosophy. His most prominent works include: *Principles of Cartesian Philosophy* (1663) *Theologico-Political Treatise* (1670), and *Ethics Demonstrated in Geometrical Order* which contained a total of 259 demonstrated propositions. Continuing to follow Euclid's style, Spinoza through his 250 axioms attempted to explain the whole of reality in a systematic arrangement of true ideas. As conclusions are demonstrated in geometry, Spinoza believed that the theories of nature could also be demonstrated. He thus retorted that our rational powers could form ideas that reflect the true nature of things. For him, every clear and distinct idea or definition is "true." In other words, every true idea gives a true picture of reality because the order and connection of ideas is the same as the order and connection of things in reality.

The Idea of God

Where Descartes began his philosophy with the *cogito*- a clear and distinct conception of his very own existence, Spinoza speculated that every rational enterprise that seeks to be free from all forms of error must first begin with the formulation of the 'idea of God'. For him, God is prior to everything else. To know something is to know the cause and God is the first cause. All that happens to exist develop their being in God and thus, no idea can be conceived without God. According to Spinoza, God is a being absolutely infinite. All elements of reality/nature only reflect some of the infinite attributes of this Eternal Being. Reality is therefore One- God, which manifests in all individuating substances. By so doing, where Descartes could be said to be a Dualist, Spinoza was basically a Monist for he believed the whole of reality is a Unity.

The Types of Ideas

Spinoza theorized that an idea is nothing else outside rational sensation. Notwithstanding, only the rational powers of the mind could lead man to the formulation of ideas that reflect the exact nature of objects i.e., the essences of things. For him, every clear and distinct idea is true and accurately reflects the ideal picture of reality. In other words, to know a thing is to know its essence. He further distinguished between three major types of ideas:

True Idea: this refers to a simple idea i.e., an idea that is clear, distinct and self-evident. For example, the idea of God.

False Idea: this refers to a perception clouded in confusion. It is not clear, distinct or self-evident. It is inadequate and does not affirm of a thing what is contained in its form.

Doubt: this arises when an idea is not clear and distinct enough for us to be able to draw any conclusion with regards its true nature or essence.

The Four Levels of Knowledge

a. Hearsay: this refers to a kind of knowledge which is uncertain. As the name suggests, we come to acquire such knowledge by gossip or the narration of someone else even without firsthand experience. E.g. knowledge of one's birth date.

b. Imagination/ Mere Experience: this refers to ideas that are confusing, inadequate, and lead only to falsity. We come to acquire such knowledge by means of our sense perceptions. Yes, they directly affect the senses but they remain unclear and uncertain. For they do not reveal the essences of things. Though these ideas from sensory things are useful for our daily life, they do not give any true knowledge. E.g. knowledge of the inevitability of death based on one's experience of the death of others.

c. **Reason:** this kind of knowledge involves logical deduction**.** It is a scientific knowledge which involves common notions and adequate ideas of the properties things. Here, the essence of things are inferred from others when we gather resultant effects from their direct causes. In this exercise, the mind rises above immediate and particular things and deal with abstract ideas as it does in the mathematical sciences. Knowledge at this level is considered adequate and true.

d. **Intuition:** this is the highest degree of knowledge. It involves mathematical truths and first principles or axioms i.e., truths that their denial lead to a self contradiction. For Spinoza, an intuitive knowledge proceeds from an adequate idea of former essence of certain attributes of God to the adequate knowledge of the essence of things. It is the ONLY secure and reliable knowledge for it apprehends the adequate essence of thing without error. It enables us to see things in themselves and in their relations with others. By so doing, we are able to grasp the whole system of nature.

Leibniz

Gottfried Wilhelm Leibniz (1646-1716) is the third great continental rationalist philosopher born in Leipzig, Germany. Four successive schools of philosophy which influenced his education were; Scholasticism, Materialism, Cartesianism, and Spinozism. He later emancipated from these schools and got involved into the 'mathematical materialism' of the day. This accounts for his founding of *Binary Mathematics*, and *Infinitesimal Calculus*. Besides Leibnitz academic interest, he was a religious man, a Christian. He wrote extensively in the area of philosophy, of which his main works include the *Monadology, New Essay in Human Understanding, Essays in Theodicy, New System of Nature and the Interaction of* Substances.

Leibnitz in his philosophy was occupied with the task of the search for unity and harmony of the whole of reality/universe. Like Galileo, he believed the universe is a harmonious system written in mathematical language by God. This led him to the realisation that basic ideas, like those found in Logic and Mathematics could not be derived by the senses for they are eternal truths. He is essentially a pluralist which is reflected in his metaphysical idea of monads (Monadology) which says that things in nature are a composite/aggregate of simple substances. This would lead him later on to his Epistemology properly.

Theory of Monads

Leibniz discovered that things found in nature are made up of monads. They are basic substances that make up the universe. He states that these monads can be conceived as unextended, immaterial, invisible, indivisible atom-like substances having no quantity, size or shape. Each monad is unique constituting small units of basic elements with which all in the universe is made. Each monad is thus self-contained and windowless i.e., they are independent without any causal relationship with another. They all mirror the universe clearly and distinctively by means of *perception*.

Monadology and Human Knowledge

Having established that monads are windowless having no causal relationship, Leibniz states that one monad always dominates in every collective group of monads. In man, the dominating monad is the human mind. He believes that ideas (monads) are stored up in the mind (the dominating monad) since ideas are simply expressions of the soul i.e., a mirroring or reflection of the mind which is itself a monad. Thus, ideas are in us and are always there whether we think of them or not. Ideas are innate. Our mind, a monad, expresses all essences as well as existences. This goes on to imply that we do not gain any knowledge from the sensory world. All that we know and need to know throughout our existence has been stored up in the mind before birth. The mind being windowless does not allow for any entering of a new knowledge. Our ideas do not come from external senses but inner experience. It is thus for Leibnitz, largely misleading, to conceive of the mind as a receptor of new knowledge for nothing can be taught us of which we have not already in our minds. The most which happens to us is a revitalization of latent knowledge in the mind by means of sense perceptions.

Degrees of Knowledge

On first apprehension, Leibniz posits that knowledge is either *clear* or *obscure*. A clear knowledge is one able to be recognized when presented us as against the latter. Clear knowledge is either *distinct* or *confused*. The former is one whose marks can be distinctly separated from another while the properties of the latter cannot be differentiated even though it is recognized. Distinct knowledge is either *adequate* or *inadequate*. An adequate knowledge is that which all its marks/properties are themselves distinctly known while those of the latter are not distinctly known. Adequate knowledge is either *intuitive* or *symbolic*. Intuitive knowledge is a notion which the mind understands distinctly and grasps at the same time all its simple ingredients. Symbolic knowledge occurs when we are unable to contemplate all elements of a complex idea but replace it with signs. For Leibniz, the bulk of human knowledge is only confused or symbolic knowledge. The purest and surest of all degrees of knowledge is the Intuitive Knowledge but is very rare in our daily conceptions.Perfect knowledge for Leibnitz is both adequate and intuitive. In his words, "I have defined *idea adeœquata* (a perfect idea) as that which is so distinct that all its ingredients are distinct, and such is nearly the idea of a number."[344]

Necessity and Contingency

[344] G. W. Leibniz, *New Essays on the Human Understanding* Book II CH. XXXI,trans. Alfred Gideon Langley (New York: The Macmillan Company, 1896), 278.

Leibniz while analysing his view of innate ideas made a distinction between necessity and contingency. A necessary proposition is a proposition that states truth of reason and is analytic, as distinct from a contingent proposition which states truth of fact and is synthetic. For Leibniz, truths of reason are necessary and their contradictory is impossible, while truths of fact are contingent and their contradictory is possible. Where propositions of Mathematics are necessary, those asserting particular existence are contingent. For Leibniz, the necessary is not same as the *à priori.*

Truth of Reason and Truth of Fact

Truth is said to be the correspondence of a proposition with reality, which may be either actual or possible. These propositions show two kinds of truth which are; truth of reason and truth of fact. According to Leibniz, the **law of contradiction** is the sole ultimate premise of all truth of reason, while truth of facts, have as many ultimate premises as there are experiences— they rest on the **principle of sufficient reason**. This accounts for Leibniz's distinction of knowledge gained by perception, and knowledge gained by reasoning. Classical examples of truths of reason are; two parallel lines never intersect each other, a circle is two semi-circles, an angle of 40 degrees is an acute angle, an axiom is self-evidently true etc. These examples reveal truths of reason which are necessary propositions that are independent of external causes for their existence. Their contradictory is impossible, and they are analytic in nature. At best, they can be referred to as tautologies. Examples of truths of facts are; the snow is white, Socrates is a married man, Marcel is teaching etc. These are not necessary propositions, but they are contingent. When we deny them, there will be no logical contradiction. Thus, their contradictory is possible. They are dependent on external causes for their existence and are synthetic in nature.

Basic Principles in Leibniz's Analysis of Truth

The two basic principles in Leibniz's analysis of truth are; the principle of contradiction and the principle of sufficient reason. These principles are based on Leibniz's concept of innate ideas in acquiring true knowledge. The principle of contradiction (which is also called the principle of identity) states that all necessary (analytic) propositions are true, while the principle of sufficient reason states that contingent propositions may either be true or false, hence, they can only be truth if there is sufficient reason to prove them. When we make existential statements, we have to give sufficient reason to say that they are true. According to Leibniz, all propositions about existence of something are contingent. This is because they state truth of fact. However, Leibniz gave an exception to that of "the existence of God." He says that the proposition on the existence of God is in itself an embodiment of truth of reason which is a necessary, thus, when it is denied; it would result to a logical contradiction because the very concept of God implies his existence.

15.4 Types of Rationalism

15.4.1 Ethical Rationalism

The views of Kant were presented above as typical of this position. But few moralists have held to ethical rationalism in this simple and sweeping form. Many have held, however, that the main rules of conduct are truths as self-evident as those of logic or mathematics. Lists of such rules were drawn up by Ralph Cudworth (1617–88) and Henry More (1614–87) among the Cambridge Platonists, who were noted for holding that moral principles were intrinsic to reality; later Samuel Clarke (1675–1729) and Richard Price (1723–91), defenders of "natural law" ethics, and the "common sense" moralist Thomas Reid (1710–96) also presented such lists. A 20th-century revision of this rationalism was offered by the intuitionists H.A. Prichard (1871–1947) and Sir David Ross (1877–1971) of Oxford under the name of deontology (from the Greek *deon*, "duty"), which respects duty more than consequences. Ross provides a list of propositions regarding fidelity to promises, reparation for injuries, and other duties, of which he says: "In our confidence that these propositions are true there is involved the same trust in our reason that is involved in our trust in mathematics." What is taken as self-evident, however, is not specific rules of conduct but prima facie duties—the claims that some types of action have on humans because of their nature. If a person is considering whether to repay a debt or to give the money to charity, each act has a self-evident claim on that person, and their comparative strengths must be settled by a rational intuition.

The most-influential variety of 20th-century ethical rationalism was probably the ideal utilitarianism of the British moralists Hastings Rashdall (1858–1924) and G.E. Moore (1873–1958). Both were teleologists (from the Greek *telos*, "end") inasmuch as they held that what makes an act objectively right is its results (or end) in intrinsic goods or evils. To determine what is right, reason is required in two senses: first, the inference to the consequences is an act of inductive reasoning; second, the judgment that one consequence is intrinsically better than another is *a priori* and self-evident. Moore thought that there is a single rule for all conduct—one should so act as to produce the greatest good—and that this is also a principle self-evident to reason.

15.4.2 Religious Rationalism

Stirrings of religious rationalism were already felt in the Middle Ages regarding the Christian revelation. Thus, the skeptical mind of Peter Abelard (1079–1142) raised doubts by showing in his *Sic et non* ("Yes and No") many contradictions among beliefs handed down as revealed truths by the Church Fathers. Aquinas, the greatest of the medieval thinkers, was a rationalist in the sense of believing that the larger part of revealed truth was intelligible to and demonstrable by reason, though he thought that a number of dogmas opaque to reason must be accepted on authority alone.

15.4.2.1 Expansion of Religious Rationalism

Religious rationalism did not come into its own, however, until the 16th and 17th centuries, when it took two chief forms: the scientific and the philosophical.
Galileo was a pioneer in astronomy and the founder of modern dynamics. He conceived of nature as governed throughout by laws statable with mathematical precision; the book of nature, he said, is "written in mathematical form." This notion not only ruled out the occasional appeal to miracle; it also collided with dogmas regarding the permanent structure of the world—in particular with that which viewed the Earth as the motionless centre of the universe. When Galileo's demonstration that the Earth moves around the Sun was confirmed by the work of Sir Isaac Newton (1642–1727) and others, a battle was won that marked a turning point in the history of rationalism, since it provided a decisive victory in a crucial case of conflict between reason and apparently revealed truth.

The rationalism of Descartes, as already shown, was the outcome of philosophical doubt rather than of scientific inquiry. The self-evidence of the *cogito,* seen by his "natural light," he made the ideal for all other knowledge. The uneasiness that the church soon felt in the face of such a test was not unfounded, for Descartes was in effect exalting the natural light into the supreme court even in the field of religion. He argued that the guarantee against the possibility that even this natural light might be deceptive lay in the goodness of the Creator. But then to prove this Creator, he had to assume the prior validity of the natural light itself. Logically, therefore, the last word lay with rational insight, not with any outside divine warrant (*see* Cartesian circle). Descartes was inadvertently beginning a Copernican revolution in theology. Before his time, the truths regarded as most certain were those accepted from revelation; afterward these truths were subject to the judgment of human reason, thus breaking the hold of authority on the European mind.

15.4.2.2 Four Waves of Religious Rationalism

The rationalist attitude quickly spread, its advance forming several waves of general interest and influence. The first wave occurred in England in the form of Deism. Deists accepted the existence of God but spurned supernatural revelation. The earliest member of this school, Lord Herbert of Cherbury (1583–1648), held that a just God would not reveal himself to a part of his creation only and that the true religion is thus a universal one, which achieves its knowledge of God through common reason. The Deistic philosopher John Toland (1670–1722), in his *Christianity Not Mysterious* (1696), sought to show that "there is nothing in the Gospels contrary to reason, nor above it"; any doctrine that is really above reason would be meaningless to humans. Attacking revelation, the freethinking polemicist Anthony Collins (1676–1729) maintained that the prophecies of the Hebrew Bible (Old Testament) failed of fulfillment; and the religious controversialist Thomas Woolston (1670–1733) urged that the New Testament miracles, as recorded, are incredible. Matthew Tindal (1657–1733), the most learned of the English Deists, argued that the essential part of Christianity is its ethics, which, being clearly apparent to natural reason, leaves revelation superfluous. Thus the Deists, professing for

the most part to be religious themselves, did much to reconcile their public to the free play of ideas in religion.

The second wave of religious rationalism, less moderate in tone and consequences, was French. This wave, reflecting an engagement with the problem of natural evil, involved a decay in the natural theology of Deism such that it merged eventually with the stream that led to materialistic atheism. Its moving spirit was Voltaire (1694–1778), who had been impressed by some of the Deists during a stay in England. Like them, he thought that a rational person would believe in God but not in supernatural inspiration. Hardly a profound philosopher, he was a brilliant journalist, clever and humorous in argument, devastating in satire, and warm in human sympathies. In his *Candide* and in many other writings, he poured irreverent ridicule on the Christian scheme of salvation as incoherent and on the church hierarchy as cruel and oppressive. In these attitudes he had the support of Denis Diderot (1713–84), editor of the most widely read encyclopaedia that had appeared in Europe. The rationalism of these thinkers and their followers, directed against both the religious and the political traditions of their time, did much to prepare the ground for the explosive French Revolution.

The next wave of religious rationalism occurred in Germany under the influence of Hegel, who held that a religious creed is a halfway house on the road to a mature philosophy, the product of a reason that is still under the sway of feeling and imagination. This idea was taken up and applied with learning and acuteness to the origins of Christianity by David Friedrich Strauss (1808–74), who published in 1835, at the age of 27, a remarkable and influential three-volume work, *Das Leben Jesu* (*The Life of Jesus, Critically Examined*, 1846). Relying largely on internal inconsistencies in the Synoptic Gospels, Strauss undertook to prove these books to be unacceptable as revelation and unsatisfactory as history. He then sought to show how an imaginative people innocent of either history or science, convinced that a messiah would appear, and deeply moved by a unique moral genius, inevitably wove myths about his birth and death, his miracles, and his divine communings.

Strauss's thought as it affected religion was continued by the philosophical historian Ernest Renan (1823–92) and as it affected philosophy by the humanist Ludwig Feuerbach (1804–72) of the Hegelian left. Renan's *Vie de Jésus* (1863; *Life of Jesus*) did for France what Strauss's book had done for Germany, though the two differed greatly in character. Whereas Strauss's work had been an intellectual exercise in destructive criticism, Renan's was an attempt to reconstruct the mind of Jesus as a wholly human person—a feat of imagination, performed with a disarming admiration and even reverence for its subject and with a felicity of style that gave it a large and lasting audience. Feuerbach's *Wesen des Christentums* (1841; *Essence of Christianity*) applied the myth theory even to belief in the existence of God, holding that "man makes God in his own image."

The fourth wave occurred in Victorian England, following the publication in 1859 of *Origin of Species* by Charles Darwin (1809–82). This book was taken as a challenge to the authority

of Scripture because there was a clear inconsistency between the Genesis account of creation and the biological account of humans' slow emergence from lower forms of life. The battle raged with bitterness for several decades but died away as the theory of evolution gained more general acceptance.

15.5 Status of Rationalism

15.5.1 Religious

With increasing freedom of thought and wider acceptance of scientific views, rationalism in religion lost its novelty and much of its controversial excitement. To the contemporary mind, it is too obvious to warrant debate that reason and revelation cannot both qualify as sources of ultimate truth, for, were they to conflict, truth itself would become self-contradictory. Hence theologians sought accommodation through new interpretative principles that discern different grades of authenticity within the Scriptures and through new views of religious truth, existential rather than cognitive that turn from propositional dogmas to the explication of lived human existence. Criticism of supernaturalism, however, was still carried on by such societies as the Rationalist Press Association, in Great Britain, and the Humanist Association, in the United States.

15.5.2 Ethical

Rationalism in ethics suffered its share of criticism. Regarding its lists of rules—on the keeping of promises, the return of loaned goods, etc.—it was argued, for example, that if they were specific enough to be useful (as in the rule against lying or stealing), they would tend to have exceptions—which no rule laid down by reason ought to have. On the other hand, if without exceptions, they would often prove to be tautologies: the rule of justice, for example, that one should give all persons their due, would then mean only that one should give them what is justly theirs. After enduring a period of eclipse, however, during which noncognitive theories of ethics (emotive and existential) and relativism had preempted the field, rationalistic views, which agree in holding that moral standards do not depend upon the varying attitudes of persons or peoples, received renewed attention in the mid-twentieth century. Prominent among these developments was the "good-reasons" approach taken by the broadly gauged scholar Stephen Toulmin (1922–2009), the contemporary philosopher Kurt Baier, and others, which examined the contexts of various moral situations and explored the kinds of justification appropriate for each.

15.5.3 Metaphysical

Typical of the ways of reasoning employed by rationalists were two approaches taken to the metaphysical doctrine that all things are connected by internal relations: one a logical, the

other a causal argument. An internal relation is one that could not be removed without affecting the terms themselves between which the relation holds. The logical argument runs: Everything is related to everything else at least by the relation "A is different from B." But difference is itself an internal relation, since the terms could not remain the same if it were removed. Hence everything is so connected with everything else that it could not be what it is unless they were what they are. The appeal to internal relations played an important part in the philosophies of Hegel, F.H. Bradley, and A.N. Whitehead (1861–1947).
The other line of argument is causal. Every event, it is maintained, is connected with every other, either directly or indirectly. Sir James Jeans (1877–1946), an astrophysicist and popularizer of science, argued that if the law of gravitation is valid, people cannot crook their little fingers without affecting the fixed stars. Here the causal relation is direct. It can also be shown that seemingly unrelated events are joined indirectly through their common connection with some remote historical event, by a chain of events leading back, for example, to Columbus's landing on the North American continent. But if this had been different, all its consequences would presumably have been different; thus, an indirect and internal relation proves to have been present.

Many rationalists held with Spinoza that the causal relation is really a logical one—that a causal law, if precisely stated, would reveal a connection in which the character of the cause logically necessitates that of its effect; and if this is true, they maintained, the facts and events of the world must thus compose a single rational and intelligible order.

In the twentieth century, such rationalism met with a new and unexpected difficulty presented by quantum mechanics. According to the indeterminacy principle, formulated in 1927 by the German physicist Werner Heisenberg (1901–76), it is impossible to discover with precision both the position and the velocity of a moving electron at the same time. This implies that definite causal laws for the behaviour of these particles can never be attained, but only statistical laws governing the behaviour of immense aggregates of them. Causality, and with it the possibility of rational understanding, seemed to be suspended in the subatomic world. Some interpreters of the new physics, however, notably Max Planck (1858–1947), Albert Einstein (1879–1955), and Bertrand Russell (1872–1970), sustained the hopes of the rationalists by insisting that what was excluded by the indeterminacy principle was not the fact of causality in this realm but only the precise knowledge of it.

Indeed, some leaders of twentieth century science took the new developments in Physics as on the whole supporting rationalism. Protons and electrons, they contended, though beyond the reach of the senses, can still be known, and their behaviour, at least in groups, is increasingly found to conform to mathematical law. In 1932 Jeans said, with a curious echo of Galileo, "the universe appears to have been designed by a pure mathematician."

15.6 Challenges to Epistemological Rationalism

At first glance, the claim of empiricism that knowledge must come from sense experience seems obvious. How else could one hope to make contact with the world around one? However, rationalism has been sharply challenged—in the ninetieth century by the empiricism of John Stuart Mill (1806–73) and in the twentieth by that of the logical positivists, among other movements. Mill argued that all *a priori* certainties are illusory: Why do people believe, for example, that two straight lines cannot enclose a space? Is it because they see it as logically necessary? No, it is because they have experienced so long and so unbroken a row of instances of it—a new one whenever they see the corner of a table or the bordering rays of a light beam—that they have formed the habit of thinking in this way and are now unable to break it. *A priori* propositions, Mill claimed, are merely empirical statements of very high degree of generality.

This theory has now been abandoned by most empiricists themselves. Its implication that such statements as "2 + 2 = 4" are only probably true and may have exceptions has proved quite unconvincing. The rationalists' rejoinder is that one cannot, no matter how hard one tries, conceive 2 + 2 as making 5, for its equaling 4 is necessary. But *a priori* knowledge is also universal. Neither of these two characteristics can be accounted for by sense experience. That a crow is black can be perceived, but not that it must be black or that crows will always be black; no run of perceptions, however long, could assure us of such truths. On the other hand, *a priori* truths can be apprehended with certainty—that if a figure, for instance, is a plane triangle within a Euclidean space, its angles must and always will equal two right angles.

One of the most formidable challenges to rationalism came in the twentieth century from such logical positivists as the Oxford empiricist A.J. Ayer (1910–89) and Rudolf Carnap (1891–1970), who had been a central figure in the Vienna Circle, where this movement first arose. Unlike Mill, they accepted *a priori* knowledge as certain; but they laid down a new challenge—the denial of its philosophical importance. A priori propositions, they said, are (1) linguistic, (2) conventional, and (3) analytic: They are linguistic statements being primarily of how one proposes to use words. If one says for instance, that "a straight line is the shortest line between two points," this merely reports one's definition of "straight" and declares one's purpose to use it only of the shortest. They are conventional given that as a definition, such statements express a convention to which there are alternatives the statement on straight may be defined in terms of the paths of light rays if one chooses. The statement is analytic in that it merely repeats in its predicate a part or the whole of the subject term and hence tells nothing new; it is not a statement about nature but about meanings only. And since rationalistic systems depend throughout upon statements of this kind, their importance is illusory.

To this clear challenge some leading rationalists have replied as follows: (1) positivists have confused real with verbal definition. A verbal definition does indeed state what a word means; but a real definition states what an object is, and the thought of a straight line is the thought of an

object, not of words. (2) The positivists have confused conventions in thought with conventions in language. One is free to vary the language in which a proposition is expressed but not the proposition itself. Start with the concept of a straight line, and there is no alternative to accepting it as the shortest. (3) Some a priori statements are admittedly analytic, but many are not. In "whatever is coloured is extended," colour and extension are two different concepts of which the first entails the second but is not identical with it in whole or part. Contemporary rationalists therefore hold that the *apriori* has emerged victorious from the empiricists' efforts to discredit such knowledge and the positivists' attempts to trivialize it.

15.7 Major Claims of Rationalism

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 by us by intuition alone, while others are knowable by 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.

Rationalism relies on the idea that reality has a rational structure in that all aspects of it can be grasped through mathematical and logical principles, and not simply through sensory experience. Rather than being a *"tabula rasa"* to be imprinted with sense data, the mind is structured by, and responds to, mathematical methods of reasoning.

Rationalists adopt at least one of three main claims:

Intuition/Deduction: Some propositions are knowable by us by intuition alone, while others are knowable by being deduced from intuited propositions. Some rationalists take intuition to be infallible, claiming that whatever we intuit must be true; others allow for the possibility of false intuited propositions. Some claim that only mathematics can be knowable by intuition and deduction; some that ethical truths can also be intuited; some more radical rationalists maintain that a whole range of metaphysical claims (like the existence of God, free will and the duality of mind and body) are included within the range of intuition and deduction.

Innate Knowledge: We have knowledge of some truths as part of our innate rational nature. Experiences may trigger a process by which we bring this knowledge to consciousness, but the experiences do not provide us with the knowledge itself, which has in some way been with us all along. Some rationalists claim that we gained this innate knowledge in an earlier existence, some that God provided us with it at creation, and others that it is part of our nature through natural selection.

Innate Concepts: Some of the concepts (as opposed to actual knowledge) we employ are part of our innate rational nature. Some would argue, however, that innate concepts are entailed by innate knowledge, because a particular instance of knowledge can only be innate if the concepts that are contained in the proposition are also innate.

Some rationalists also claim, in addition to the claims above, that the knowledge we gain by intuition and deduction, as well as the ideas and instances of knowledge that are innate to us, are indispensable and could not have been gained through sense experience, and/or that reason is superior to experience as a source of knowledge.

15.8 Distinguishing Rationalism from Empiricism

Rationalism is contrasted with Empiricism, the view that the origin of all knowledge is sense experience and sensory perception. It is usually associated with the introduction of mathematical methods into philosophy during the Age of Reason and the Enlightenment by the major rationalist figures, Descartes, Leibniz and Spinoza. It is commonly referred to as "Continental Rationalism" because it was predominant in the continental schools of Europe, whereas British Empiricism dominated in Britain.

The distinction between Rationalism and Empiricism, however, is perhaps not as clear-cut as is sometimes suggested, and would probably not have even been recognized by the Enlightenment philosophers involved. For example, the three main rationalists were all committed to the importance of empirical science, and in many respects the empiricists were closer to Descartes in their methods and metaphysical theories than were Leibniz and Spinoza. Both Leibniz and Spinoza asserted that, in principle, all knowledge, including scientific knowledge, could be gained through the use of reason alone, though they both observed that this was not possible in practice for human beings, except in specific areas such as mathematics.

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I recommend the book to all, especially those interested in probing into epistemology as a crucial aspect of philosophy and those who are saddled with the task of grappling with the problem of existence through the framework of knowledge.

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