**PHILOSOPHICAL THEORIES OF KNOWLEDGE: EPISTEMOLOGY OF EMPIRICISM AND RATIONALISM**

**EPISTEMOLGY**

The term “epistemology” comes from the Greek “episteme,” meaning “knowledge,” and “logos,” meaning, roughly, “study, or science, of.” “Logos” is the root of all terms ending in “-ology” – such as psychology, anthropology – and of “logic,” and has many other related meanings.

Epistemology, in a most general way, is that branch of philosophy which is concerned with the value of human knowledge. It describes, analyses, examines genetically the facts of knowledge as such (psychology of knowledge), and then tests chiefly the value of knowledge and of its various kinds, its conditions of validity, range and limits (critique of knowledge).

Epistemology attempts to answer the basic question: what distinguishes true (adequate) knowledge from false (inadequate) knowledge? It also forms one of the pillars of the new sciences cognition, which developed from the information processing approach to psychology, and from artificial intelligence, as an attempt to develop computer programs that mimic a human’s capacity to use knowledge in an intelligent way.

Epistemologists concern themselves with a number of tasks, which we might sort into two categories.

First, we must determine the *nature* of knowledge; that is, what does it mean to say that someone knows, or fails to know, something? This is a matter of understanding what knowledge is, and how to distinguish between cases in which someone knows something and cases in which someone does not know something. While there is some general agreement about some aspects of this issue, we shall see that this question is much more difficult than one might imagine.

Second, we must determine the extent of human knowledge; that is, how much do we, or can we, know? How can we use our reason, our senses, the testimony of others, and other resources to acquire knowledge? Are there limits to what we can know? For instance, are some things unknowable? Is it possible that we do not know nearly as much as we think we do? Should we have a legitimate worry about skepticism, the view that we do not or cannot know anything at all?

**HISTORY OF EPISTEMOLOGY**

When we look at the history of epistemology, we can discern a clear trend, in spite of the confusion of many seemingly contradictory positions. The first theories of knowledge stressed its absolute, permanent character, whereas the later theories put the emphasis on its relativity or situation-dependence, its continuous development or evolution, and its active interference with the world and its subjects and objects. The whole trend moves from a static, passive view of knowledge towards a more and more adaptive and active one.

The first efforts of Greek thinkers centre around the study of nature. This early philosophy is almost exclusively objective, and supposes, without examining it, the validity of knowledge. Doubt arose later chiefly from the disagreement of philosophers in determining the primordial elements of matter and in discussing the nature and attributes of reality. Parmenides holds that it is unchangeable; Heraclitus, that it is constantly changing; Democritus endows it with an eternal inherent motion, while Anaxagoras requires an independent and intelligent motor. This led the Sophists to question the possibility of certitude, and prepared the way for their skeptical tendencies. With Socrates, Plato, and Aristotle, who oppose the Sophists, the power of the mind to know truth and reach certitude is vindicated, and the conditions for the validity of knowledge are examined. But epistemological questions are not yet treated on their own merits, nor kept sufficiently distinct from purely logical and metaphysical inquiries. The philosophy of the Stoics is primarily practical, knowledge being looked upon as a means of right living and as a condition of happiness. As man must act according to guiding principles and rational convictions, human action supposes the possibility of knowledge.

**THEORIES IN EPISTEMOLOGY**

This field also addresses questions about how we construct concepts in our minds, the nature of knowledge itself, the relationship between what we "know" and the objects of our knowledge, the reliability of our senses, and more.

In general, theories about the relationship between the knowledge in our minds and the objects of our knowledge can be divided into two types of positions: dualistic and monistic:

**Epistemological Dualism**: According to this position, the object "out there" and the idea "in the mind" are two entirely different things. One might have some similarity to the other, but we shouldn't necessarily count on it. Critical Realism is a form of Epistemological Dualism because it subscribes to the view that there is both a mental world and an objective, outside world. Knowledge about the outside world may not always be possible and may often be imperfect, but nevertheless it can, in principle, be acquired and it is essentially different from the mental world of our minds.

**Epistemological Monism**: This is the idea that the "real objects" out there and the knowledge of those objects stand in close relationship with each other. Ultimately, they are not two entirely different things as in Epistemological Dualism - either the mental object is equated with the known object, as in Realism, or the known object is equated with the mental object, as in Idealism. A consequence of this is that statements about physical objects only make sense if they can be construed as really being statements about our sense data. Why? Because we are permanently cut off from the physical world and all we really have access to is our mental world - and for some, this entails denying that there is even an independent physical world in the first place.

**Epistemological Pluralism**: This is a idea which has been made popular in postmodernist writings and argues that knowledge is highly contextualized by historical, cultural and other outside factors. Thus, rather than there being simply one type of thing as in monism (either essentially mental or essentially physical) or two types of things as in dualism (both mental and physical), there exists a multiplicity of things which affect the acquisition of knowledge: our mental and sensory events, the physical objects, and the various influences upon us which lie outside of our immediate control. This position is also sometimes referred to as Epistemological Relativism because knowledge is construed as relative to different historical and cultural forces.

**WHAT IS KNOWLEDGE?**

The first problem encountered in epistemology is that of defining knowledge. Philosophers use the tripartite theory of knowledge, which analyses knowledge as justified true belief, as a working model much of the time. The tripartite theory has, however, been refuted; Gettier cases show that some justified true beliefs do not constitute knowledge. Rival analyses of knowledge have been proposed, but there is as yet no consensus on what knowledge is. This fundamental question of epistemology remains unsolved.

Though philosophers are unable to provide a generally accepted analysis of knowledge, we all understand roughly what we are talking about when we use words such as “knowledge”. Thankfully, this means that it is possible to get on with epistemology, leaving unsolved the fundamental question as to what knowledge is.

**From where do we get our knowledge?**

A second important issue in epistemology concerns the ultimate source of our knowledge. There are two traditions: empiricism, which holds that our knowledge is primarily based in experience, and rationalism, which holds that our knowledge is primarily based in reason. Although the modern scientific worldview borrows heavily from empiricism, there are reasons for thinking that a synthesis of the two traditions is more plausible than either of them individually.

**How are our beliefs justified?**

There are better and worse ways to form beliefs. In general terms, it is important to consider evidence when deciding what to believe, because by doing so we are more likely to form beliefs that are true. Precisely how this should work, when we are justified in belief something and when we are not, is another topic in the theory of knowledge. The three most prominent theories of epistemic justification are foundationalism, coherentism, and reliabilism.

**How do we perceive the world around us?**

Much of our knowledge, it seems, does come to us through our senses, through perception. Perception, though, is a complex process. The way that we experience the world may be determined in part by the world, but it is also determined in part by us. We do not passively receive information through our senses; arguably, we contribute just as much to our experiences as do the objects that they are experiences of. How we are to understand the process of perception, and how this should affect our understanding of the world that we inhabit, is therefore vital for epistemology.

**Do we know anything at all?**

The area of epistemology that has captured most imaginations is philosophical skepticism. Alongside the questions of what knowledge is and how we come to acquire it is the question whether we do in fact know anything at all. There is a long philosophical tradition that says that we do not, and the arguments in support of this position, though resisted by most, are remarkably difficult to refute. The most persistent problem in the theory of knowledge is not what knowledge is or what it comes from, but whether there is any such thing at all.

**KINDS OF KNOWLEDGE**

The word “knowledge” and its cognates are used in a variety of ways. One common use of the word “know” is as an expression of psychological conviction. For instance, we might hear someone say, “I just knew it wouldn’t rain, but then it did.” While this may an appropriate usage, philosophers tend to use the word “know” in a *factive* sense, so that one cannot know something that is not the case.

Even if we restrict ourselves to factive usages, there are still multiple senses of “knowledge,” and so we need to distinguish between them. One kind of knowledge is procedural knowledge, sometimes called competence or “know-how;” for example, one can know how to ride a bicycle, or one can know how to drive from Washington, D.C. to New York. Another kind of knowledge is acquaintance knowledge or familiarity; for instance, one can know the department chairperson, or one can know Philadelphia.

Epistemologists typically do not focus on procedural or acquaintance knowledge, however, instead preferring to focus on *propositional* knowledge. A proposition is something which can be expressed by a declarative sentence, and which purports to describe a fact or a state of affairs, such as“Dogs are mammals,” “2+2=7,” “It is wrong to murder innocent people for fun.” (Note that a proposition may be true or false; that is, it need not *actually* express a fact.) Propositional knowledge, then, can be called knowledge-that; statements of propositional knowledge (or the lack thereof) are properly expressed using “that”-clauses, such as “He knows that Houston is in Texas,” or “She does not know that the square root of 81 is 9.” In what follows, we will be concerned only with propositional knowledge.

Propositional knowledge, obviously, encompasses knowledge about a wide range of matters: scientific knowledge, geographical knowledge, mathematical knowledge, self-knowledge, and knowledge about any field of study whatever. Any truth might, in principle, be knowable, although there might be unknowable truths. One goal of epistemology is to determine the criteria for knowledge so that we can know what can or cannot be known, in other words, the know study of epistemology fundamentally includes the study of meta-epistemology (what we can about knowledge itself).

We can also distinguish between different types of propositional knowledge, based on the source of that knowledge. Non-empirical or a prior knowledge is possible independently of, or prior to, any experience, and requires only the use of reason; examples include knowledge of logical truths such as the law of non-contradiction, as well as knowledge of abstract claims (such as ethical claims or claims about various conceptual matters). Empirical or a posteriori knowledge is possible only subsequent, or posterior, to certain sense experiences (in addition to the use of reason); examples include knowledge of the color or shape of a physical object or knowledge of geographical locations. (Some philosophers, called rationalists, believe that all knowledge is ultimately grounded upon reason; others, called empiricists, believe that all knowledge is ultimately grounded upon experience.) A thorough epistemology should, of course, address all kinds of knowledge, although there might be different standards for *a priori* and *a posteriori*knowledge.

**THE NATURE KNOWLEDGE**

We must ask ourselves what, exactly, constitutes knowledge. What does it mean for someone to know something? What is the difference between someone who knows something and someone else who does not know it, or between something one knows and something one does not know? Since the scope of knowledge is so broad, we need a general characterization of knowledge, one which is applicable to any kind of proposition whatsoever. Epistemologists have usually undertaken this task by seeking a correct and complete analysis of the concept of knowledge, in other words a set of individually necessary and jointly sufficient conditions which determine whether someone knows something.

**1)      Belief**

Let us begin with the observation that knowledge is a mental state; that is, knowledge exists in one’s mind, and unthinking things cannot know anything. Further, knowledge is a specific kind of mental state. While “that”-clauses can also be used to describe desires and intentions, these cannot constitute knowledge. Rather, knowledge is a kind of *belief*. If one has no beliefs about a particular matter, one cannot have knowledge about it.

For instance, suppose that I desire that I be given a raise in salary, and that I intend to do whatever I can to earn one. Suppose further that I am doubtful as to whether I will indeed be given a raise, due to the intricacies of the university’s budget and such. Given that I do not believe that I will be given a raise, I cannot be said to know that I -never entertained are not among his beliefs, and thus cannot be included in his body of knowledge.

Some beliefs, those which the individual is actively entertaining, are called occurrent beliefs. The majority of an individual’s beliefs are non-occurrent; these are beliefs that the individual has in the background but is not entertaining at a particular time. Correspondingly, most of our knowledge is non-occurrent, or background, knowledge; only a small amount of one’s knowledge is ever actively on one’s mind.

**2) Truth**

Knowledge, then, requires belief. Of course, not all beliefs constitute knowledge. Belief is necessary but not sufficient for knowledge. We are all sometimes mistaken in what we believe; in other words, while some of our beliefs are true, others are false. As we try to acquire knowledge, then, we are trying to increase our stock of *true* beliefs (while simultaneously minimizing our false beliefs).

We might say that the most typical purpose of beliefs is to describe or capture the way things actually are; that is, when one forms a belief, one is seeking a match between one’s mind and the world. (We sometimes, of course, form beliefs for other reasons – to create a positive attitude, to deceive ourselves, and so forth – but when we seek knowledge, we are trying to get things right.) And, alas, we sometimes fail to achieve such a match; some of our beliefs do not describe the way things actually are.

Note that we are assuming here that there is such a thing as objective truth, so that it is possible for beliefs to match or to fail to match with reality. That is, in order for someone to know something, there must be something one knows *about*. Recall that we are discussing knowledge in the factive sense; if there are no facts of the matter, then there’s nothing to know (or to fail to know). This assumption is not universally accepted – in particular, it is not shared by some proponents of relativism – but it will not be defended here. However, we can say that truth is a *condition* of knowledge; that is, if a belief is not true, it cannot constitute knowledge. Accordingly, if there is no such thing as truth, then there can be no knowledge. Even if there is such a thing as truth, if there is a domain in which there are no truths, then there can be no knowledge within that domain. (For example, if beauty is in the eye of the beholder, then a belief that something is beautiful cannot be true or false, and thus cannot constitute knowledge.)

**3) Justification**

Knowledge, then, requires factual belief. However, this does not suffice to capture the nature of knowledge. Just as knowledge requires successfully achieving the objective of true belief, it also requires success with regard to the formation of that belief. In other words, not all true beliefs constitute knowledge; only true beliefs arrived at in the right way constitute knowledge.

What, then, is the right way of arriving at beliefs? In addition to truth, what other properties must a belief have in order to constitute knowledge? We might begin by noting that sound reasoning and solid evidence seem to be the way to acquire knowledge. By contrast, a lucky guess cannot constitute knowledge. Similarly, misinformation and faulty reasoning do not seem like a recipe for knowledge, even if they happen to lead to a true belief. A belief is said to be *justified* if it is obtained in the right way. While justification seems, at first glance, to be a matter of a belief’s being based on evidence and reasoning rather than on luck or misinformation, we shall see that there is much disagreement regarding how to spell out the details.

The requirement that knowledge involve justification does not necessarily mean that knowledge requires absolute certainty, however. Humans are fallible beings, and fallibilism is the view that it is possible to have knowledge even when one’s true belief might have turned out to be false. Between beliefs which were necessarily true and those which are true solely by luck lies a spectrum of beliefs with regard to which we had some defeasible reason to believe that they would be true. For instance, if I heard the weatherman say that there is a 90% chance of rain, and as a result I formed the belief that it would rain, then my true belief that it would rain was not true purely by luck. Even though there was some chance that my belief might have been false, there was a sufficient basis for that belief for it to constitute knowledge. This basis is referred to as the justification for that belief. We can then say that, to constitute knowledge, a belief must be both true and justified.

Note that because of luck, a belief can be unjustified yet true; and because of human fallibility, a belief can be justified yet false. In other words, truth and justification are two independent conditions of beliefs. The fact that a belief is true does not tell us whether or not it is justified; that depends on how the belief was arrived at. So, two people might hold the same true belief, but for different reasons, so that one of them is justified and the other is unjustified. Similarly, the fact that a belief is justified does not tell us whether it’s true or false. Of course, a justified belief will presumably be more likely to be true than to be false, and justified beliefs will presumably be more likely or more probable to be true than unjustified beliefs. (As we will see in section 3 below, the exact nature of the relationship between truth and justification is contentious.)

**THE EXTENT OF HUMAN KNOWLEDGE**

**Sources of Knowledge**

Given the above characterization of knowledge, there are many ways that one might come to know something. Knowledge of empirical facts about the physical world will necessarily involve perception, in other words, the use of the senses. Science, with its collection of data and conducting of experiments, is the paradigm of empirical knowledge. However, much of our more mundane knowledge comes from the senses, as we look, listen, smell, touch, and taste the various objects in our environments.

But all knowledge requires some amount of reasoning. Data collected by scientists must be analyzed before knowledge is yielded, and we draw inferences based on what our senses tell us. And knowledge of abstract or non-empirical facts will exclusively rely upon reasoning. In particular, intuition is often believed to be a sort of direct access to knowledge of the*a priori*.

Once knowledge is obtained, it can be sustained and passed on to others. Memory allows us to know something that we knew in the past, even, perhaps, if we no longer remember the original justification. Knowledge can also be transmitted from one individual to another via testimony; that is, my justification for a particular belief could amount to the fact that some trusted source has told me that it is true.

**KEY PROPONENTS**

**PLATO**

In Plato's view knowledge is merely an awareness of absolute, universal *Ideas* or *Forms*, existing independent of any subject trying to apprehend to them.

In addition, Plato’s Socrates in the early dialogues may plausibly be regarded as having certain methodological or epistemological convictions, including:

* Definitional knowledge of ethical terms is at least a necessary condition of reliable judging of specific instances of the values they name (*Euthyphro*4e-5d, 6e; *Laches*189e-190b; *Lysis*223b; *Greater Hippias*304d-e; *Meno*71a-b, 100b; *Republic* I.354b-c);
* A mere list of examples of some ethical value—even if all are authentic cases of that value—would never provide an adequate analysis of what the value is, nor would it provide an adequate definition of the value term that refers to the value. Proper definitions must state what is common to all examples of the value (*Euthyphro*6d-e; *Meno*72c-d);
* Those with expert knowledge or wisdom on a given subject do not err in their judgments on that subject (*Euthyphro* 4e-5a; *Euthydemus*279d-280b), go about their business in their area of expertise in a rational and regular way (*Gorgias*503e-504b), and can teach and explain their subject (*Gorgias* 465a, 500e-501b, 514a-b; *Laches*185b, 185e, 1889e-190b); *Protagoras*319b-c).

**ARISTOTLE**

Aristotle puts more emphasis on logical and empirical methods for gathering knowledge, he still accepts the view that such knowledge is an apprehension of necessary and universal principles.

**IMMANUEL KANT**

According to Kant, knowledge results from the organization of perceptual data on the basis of inborn cognitive structures, which he calls "categories". Categories include space, time, objects and causality. This epistemology does accept the subjectivity of basic concepts, like space and time, and the impossibility to reach purely objective representations of things-in-themselves. Yet the a priori categories are still static or given.

His contributions to epistemology aesthetics have had a profound impact on almost every philosophical movement that followed him. What can we know?” The answer, if it can be stated simply, is that our knowledge is constrained to mathematics and the science of the natural, empirical world. It is impossible, Kant argues, to extend knowledge to the supersensible realm of speculative metaphysics. The reason that knowledge has these constraints, Kant argues, is that the mind plays an active role in constituting the features of experience and limiting the mind’s access only to the empirical realm of space and time.

**THOMAS AQUINAS**

Aquinas made an important contribution to epistemology, recognizing the central part played by sense perception in human cognition. It is through the senses that we first become acquainted with existent, material things. St. Thomas held that the relation of dependence of objects on something which transcends them is disclosed to the observer through the contemplation of material things. Just as our knowledge depends not on innate ideas but perceiving the material world, the same material world is dependent on a productive agent for its existence. Aquinas thought the proposition 'everything which begins to exist through the agency of an already existent, extrinsic thing' to be a fact beyond doubt.

**GEORGE EDWARD MOORE**

In epistemology, Moore is remembered as a stalwart defender of commonsense realism. Rejecting skepticism on the one hand, and, on the other, metaphysical theories that would invalidate the commonsense beliefs of “ordinary people” (non-philosophers), Moore articulated three different versions of a commonsense-realist epistemology over the course of his career.

Moore’s epistemological interests also motivated much of his metaphysical work, which to a large extent was focused on the ontology of cognition. In this regard, Moore was an important voice in the discussion about sense-data that dominated Anglo-American epistemology in the early twentieth century.

Two facts make it difficult to separate Moore’s contributions to metaphysics from his contributions to epistemology. First, his main contributions to metaphysics were in the ontology of cognition, which is often treated as a branch of epistemology. Second, his main contributions to epistemology were motivated by what he called the “commonsense” or “ordinary” view of the world, and this is properly a metaphysical conception, a worldview or *Weltanschauung*.

**EDMUND GETTIER**

For some time, the justified true belief (JTB) account was widely agreed to capture the nature of knowledge. However, in 1963, he published a short but widely influential article which has shaped much subsequent work in epistemology. Gettier provided two examples in which someone had a true and justified belief, but in which we seem to want to deny that the individual has knowledge, because luck still seems to play a role in his belief having turned out to be true.

Consider an example. Suppose that the clock on campus (which keeps accurate time and is well maintained) stopped working at 11:56pm last night, and has yet to be repaired. On my way to my noon class, exactly twelve hours later, I glance at the clock and form the belief that the time is 11:56. My belief is true, of course, since the time is indeed 11:56. And my belief is justified, as I have no reason to doubt that the clock is working, and I cannot be blamed for basing beliefs about the time on what the clock says. Nonetheless, it seems evident that I do not know that the time is 11:56. After all, if I had walked past the clock a bit earlier or a bit later, I would have ended up with a false belief rather than a true one.

This example and others like it, while perhaps somewhat far-fetched, seem to show that it is possible for justified true belief to fail to constitute knowledge. To put it another way, the justification condition was meant to ensure that knowledge was based on solid evidence rather than on luck or misinformation, but Gettier-type examples seem to show that justified true belief can still involve luck and thus fall short of knowledge. This problem is referred to as “the Gettier problem.” To solve this problem, we must either show that all instances of justified true belief do indeed constitute knowledge, or alternatively refine our analysis of knowledge.

**EMPIRICISM**

Empiricism is the theory that experience is of primary importance in giving us knowledge of the world. Whatever we learn, according to empiricists, we learn through perception. Knowledge without experience, with the possible exception of trivial semantic and logical truths, is impossible.

Empiricism is the philosophical concept that experience, which is based on observation and experimentation, is the source of knowledge. According to empiricism, only the information that a person gathers with his or her senses should be used to make decisions, without regard to reason or to either religious or political teachings.

Primarily, and in its psychology application, the term signifies the theory that the phenomena of consciousness are simply the product of sensuous experience, i.e. of sensations variously associated and arranged. It is thus distinguished from Nativism or Innatism. Secondarily, and in its logical (epistemological) usage, it designates the theory that all human knowledge is derived exclusively from experience, the latter term meaning, either explicitly or implicitly, external sense-percepts and internal representations and inferences exclusive of any superorganic (immaterial) intellectual factor. In this connection it is opposed to Intellectualism, Rationalism, and Apriorism. The two usages evidently designate but two inseparable aspects of one and the same theory the epistemological being the application of the psychological to the problem of knowledge.

**EMPIRICISM THEORIES**

**Classical Empiricism**

Classical empiricism is characterized by a rejection of innate, in-born knowledge or concepts. John Locke, well known as an empiricist, wrote of the mind being a tabula rasa, a “blank slate”, when we enter the world. At birth we know nothing; it is only subsequently that the mind is furnished with information by experience.

**Radical Empiricism**

In its most radical forms, empiricism holds that all of our knowledge is derived from the senses. This position leads naturally to the verificationist principle that the meaning of statements is inextricably tied to the experiences that would confirm them. According to this principle, it is only if it is possible to empirically test a claim that the claim has meaning. As all of our information comes from our senses, it is impossible for us to talk about that which we have not experienced. Statements that are not tied to our experiences are therefore meaningless.

This principle, which was associated with a now unpopular position called logical positivism, renders religious and ethical claims literally nonsensical. No observations could confirm religious or ethical claims, therefore those claims are meaningless. Radical empiricism thus requires the abandonment of religious and ethical discourse, let alone belief.

**Moderate Empiricism**

More moderate empiricists, however, allow that there may be some cases in which the senses do not ground our knowledge, but hold that these are exceptions to a general rule. Truths such as “there are no four-sided triangles” and “7+5=12” need not be investigated in order to be known, but all significant, interesting knowledge, the empiricist claims, comes to us from experience. This more moderate empiricism strikes many as more plausible than its radical alternative.

**EMPIRICISM PRINCIPAL FORMS**

Empiricism appears in the history of philosophy three principal forms: (1) Materialism, (2) Sensism, and (3) Positivism.

**Materialism**

Materialism in its crudest shape was taught by the ancient  atomist (Democritus, Leucippus, Epicurus, Lucretius), who, reducing the sum of all reality to atoms and motion, taught that experience, whereof they held knowledge to be constituted, is generated by images reflected from material objects through the sensory organs into the soul. The soul, a mere complexus of the finest atoms, perceives not the objects but their effluent images. With modern materialists (Helvetius, d'Holbach, Diderot, Feuerbach, Moleschott, Büchner, Vogt, etc.), knowledge is accounted for either by cerebral secretion or by motion; while Häcket looks on it as a physiological process effected by certain brain cells. Avenarius, Willy, Mach, etc. subtilize this process so far as to reduce all experience to internal (empirio-criticism).

**Sensism**

All materialists are of course sensists. Though the converse is not the case, nevertheless, by denying any essential difference between sensations andideas (intellectual states), sensism logically involves materialism. Sensism, which is found with Empedocles and Protagoras amongst the ancients, was given its first systematic form by Locke (d. 1704), though Bacon (d. 1626) and Hobbes (d. 1679) had prepared the data.

Locke derives all simple ideas from external experience (sensations), all compound ideas (modes, substances, relations) from internal experience (reflection). Substance and cause are simply associations of subjective phenomena; universal ideas are mere mental figments. Locke admits the existence, though he denies the demonstrability, in man of an immaterial and immortal principle, the soul.

Berkeley (d. 1753), accepting the teaching of Locke that ideas are only transfigured sensations, subjectivizes not only the sensible or secondary qualities of matter (*sensibilia propria,* e.g. colour and sound) as his predecessor had done, but also the primary qualities (*sensibilia communia,* extension, space, etc.), which Locke held to be objective. Berkeley denies the objective basis of universal ideas and indeed of the whole material universe. The reality of things he places in their being perceived *(esse rei est percipi),* and this "perceivedness" is effected in the mind by God, not by the object or subject. He still retains the substance-reality of the human soul and of spirits generally, God included.

Hume (d. 1776) agrees with his two empiricist predecessors in teaching that the mind knows only its own subjective organic impressions, whereof ideas are but the images. The supersensible is therefore unknowable; the principle of causality is resolved into a mere feeling of successiveness of phenomena; its necessity is reduced to a subjective feeling resulting from uniform association experienced in consciousness, and the spiritual essence or substantial being of the soul is dissipated into a series of conscious states. Locke's sensism was taken up by Condillac (d. 1780), who eliminated entirely the subjective factor (Locke's "reflection") and sought to explain all cognitional states by a mere mechanical, passive transformation of external sensations. The French sensist retained the spiritual soul, but his followers disposed of it as Hume had done with the Berkeleian soul relic. The Herbartians confound the image with the idea, nor does Wundt make a clear distinction between primitive concepts (*empirische Begriffe,* representations of individual objects) and the image: "Denken ist Phantasieren in Begriffen und Phantasieren ist Denken in Bildern".

**Positivism**

Positivists, following Comte (d. 1857), do not deny the supersensible; they declare it unknowable; the one source of cognition, they claim, is sense-experience, experiment, and induction from phenomena. John Stuart Mill (d. 1870), following Hume, reduces all knowledge to series of conscious states linked by empirical associations and enlarged by inductive processes. The mind has no certitude of an external world, but only of "a permanent possibility of sensations" and antecedent and anticipated feelings. Spencer (d. 1903) makes all knowledge relative. The actual existence of things is their persistence in consciousness. Consciousness contains only subjective feelings. The relative supposes the absolute, but the latter is unknowable to us; it is the object of faith and religion (Agnoticism). All things, mind included, have resulted from a cosmical process of mechanical evolution wherein they are still involved; hence all concepts and principles are in a continuous flux.

**KEY PROPONENTS**

**John Locke**

Locke’s empiricism emphasizes the importance of the experience of the senses in pursuit of knowledge rather than intuitive speculation or deduction. The empiricist doctrine was first expounded by English philosopher and statesman Francis Bacon early in the 17th century, but Locke gave it systematic expression in his *Essay Concerning Human Understanding* (1690). He regarded the mind of a person at birth as a *tabula rasa,* a blank slate upon which experience imprinted knowledge, and did not believe in intuition or theories of innate conceptions. Locke also held that all persons are born good, independent, and equal.

**Immanuel Kant**

Kant argues that the blank slate model of the mind is insufficient to explain the beliefs about objects that we have; some components of our beliefs must be brought by the mind to experience.

Kant expresses deep dissatisfaction with the idealistic and seemingly skeptical results of the empirical lines of inquiry. In each case, Kant gives a number of arguments to show that Locke’s, Berkeley’s, and Hume’s empiricist positions are untenable because they necessarily presupposes the very claims they set out to disprove. In fact, any coherent account of how we perform even the most rudimentary mental acts of self-awareness and making judgments about objects must presuppose these claims, Kant argues. Hence, while Kant is sympathetic with many parts of empiricism, ultimately it cannot be a satisfactory account of our experience of the world.

**George Berkeley**

Berkeley’s strict phenomenalism, in contrast to Locke, raised questions about the inference from the character of our sensations to conclusions about the real properties of mind-independent objects. Since the human mind is strictly limited to the senses for its input, Berkeley argued, it has no independent means by which to verify the accuracy of the match between sensations and the properties that objects possess in themselves. In fact, Berkeley rejected the very idea of mind-independent objects on the grounds that a mind is, by its nature, incapable of possessing an idea of such a thing. Hence, in Kant’s terms, Berkeley was a material idealist. To the material idealist, knowledge of material objects is ideal or unachievable, not real. For Berkeley, mind-independent material objects are impossible and unknowable. In our sense experience we only have access to our mental representations, not to objects themselves. Berkeley argues that our judgments about objects are really judgments about these mental representations alone, not the substance that gives rise to them. In the *Refutation of Material Idealism*, Kant argues that material idealism is actually incompatible with a position that Berkeley held, namely that we are capable of making judgments about our experience.

**David Hume**

David Hume pursued Berkeley’s empirical line of inquiry even further, calling into question even more of our common sense beliefs about the source and support of our sense perceptions. Hume maintains that we cannot provide a priori or a posteriori justifications for a number of our beliefs like, “Objects and subjects persist identically over time,” or “Every event must have a cause.” In Hume’s hands, it becomes clear that empiricism cannot give us an epistemological justification for the claims about objects, subjects, and causes that we took to be most obvious and certain about the world.

 **RATIONALISM**

The Latin word ratio meaning reason. Rationalism (from Lat. rationalis, pertaining to reason, ratio), a term employed both in philosophy and in theology for any system which sets up human reason as the final criterion and chief source of knowledge. Such systems are opposed to all doctrines which rest solely or ultimately upon external authority; the individual must investigate everything for himself and abandon any position the validity of which cannot be rationally demonstrated.

Philosophical rationalism is that theory of knowledge which maintains that reason is in and by itself a source of knowledge, and that knowledge so derived has superior authority over knowledge acquired through sensation. This view is opposed to the various systems which regard the mind as a tabula rasa (blank tablet) in which the outside world as it were imprints itself through the senses. The opposition between rationalism and sensationalism is, however, rarely so simple and direct, inasmuch as many thinkers (e.g. Locke) have admitted both sensation and reflection. Such philosophies are called rationalist or sensationalist according as they lay emphasis specially on the function of reason or that of the senses.

More generally, philosophic rationalism is opposed to empirical theories of knowledge, inasmuch as it regards all true knowledge as deriving deductively from fundamental elementary concepts.

**RATIONALISM THEORIES**

**1)      The Intuition/Deduction Thesis**

The Intuition/Deduction thesis concerns how we become warranted in believing propositions in a particular subject area.The Intuition/Deduction Thesis: Some propositions in a particular subject area, S, are knowable by us by intuition alone; still others are knowable by being deduced from intuited propositions.Intuition is a form of rational insight. Intellectually grasping a proposition, we just "see" it to be true in such a way as to form a true, warranted belief in it. Deduction is a process in which we derive conclusions from intuited premises through valid arguments, ones in which the conclusion must be true if the premises are true. We intuit, for example, that the number three is prime and that it is greater than two. We then deduce from this knowledge that there is a prime number greater than two. Intuition and deduction thus provide us with knowledge a priori, which is to say knowledge gained independently of sense experience.

We can generate different versions of the Intuition/Deduction thesis by substituting different subject areas for the variable ‘S’. Some rationalists take mathematics to be knowable by intuition and deduction. Some place ethical truths in this category. Some include metaphysical claims, such as that God exists, we have free will, and our mind and body are distinct substances. The more propositions rationalists include within the range of intuition and deduction, and the more controversial the truth of those propositions, the more radical their rationalism.

Rationalists also vary the strength of their view by adjusting their understanding of warrant. Some take warranted beliefs to be beyond even the slightest doubt and claim that intuition and deduction provide beliefs of this high epistemic status. Others interpret warrant more conservatively, say as belief beyond a reasonable doubt, and claim that intuition and deduction provide beliefs of that caliber. Still another dimension of rationalism depends on how its proponents understand the connection between intuition, on the one hand, and truth, on the other. Some take intuition to be infallible, claiming that whatever we intuit must be true. Others allow for the possibility of false intuited propositions.

**2)      The Innate Knowledge Thesis**

We have knowledge of some truths in a particular subject area, S, as part of our rational nature. Like the Intuition/Deduction thesis, the Innate Knowledge thesis asserts the existence of knowledge gained a priori, independently of experience. The difference between them rests in the accompanying understanding of how this a priori knowledge is gained. The Intuition/Deduction thesis cites intuition and subsequent deductive reasoning. The Innate Knowledge thesis offers our rational nature. Our innate knowledge is not learned through either sense experience or intuition and deduction. It is just part of our 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. It has in some way been with us all along. According to some rationalists, we gained the knowledge in an earlier existence. According to others, God provided us with it at creation. Still others say it is part of our nature through natural selection.

We get different versions of the Innate Knowledge thesis by substituting different subject areas for the variable ‘S'. Once again, the more subjects included within the range of the thesis or the more controversial the claim to have knowledge in them, the more radical the form of rationalism. Stronger and weaker understandings of warrant yield stronger and weaker versions of the thesis as well.

**3)      The Innate Concept Thesis:**

We have some of the concepts we employ in a particular subject area, S, as part of our rational nature. According to the Innate Concept thesis, some of our concepts are not gained from experience. They are part of our rational nature in such a way that, while sense experiences may trigger a process by which they are brought to consciousness, experience does not provide the concepts or determine the information they contain. Some claim that the Innate Concept thesis is entailed by the Innate Knowledge Thesis; a particular instance of knowledge can only be innate if the concepts that are contained in the known proposition are also innate. This is Locke's position. Others, such as Carruthers, argue against this connection.  The content and strength of the Innate Concept thesis varies with the concepts claimed to be innate. The more a concept seems removed from experience and the mental operations we can perform on what experience provides the more plausibly it may be claimed to be innate. Since we do not experience perfect triangles but do experience pains, our concept of the former is a more promising candidate than our concept of the latter for being innate.

**KEY PROPONENTS**

**RENÉ DESCARTES**

1. Descartes is a rationalist who set out to refute radical skepticism on its
         own turf.

     He sought an absolute foundation for knowledge by proposing to doubt
     all things and accept as knowledge (or at least as a foundation for
     knowledge) only what could not be doubted.  (Note that this requirement
     of absolute certainty [undoubtability] was not Plato's or Aristotle's
     criterion for knowledge.)

     2. Descartes' procedure is to withhold his belief from anything that is not
         entirely certain and indubitable.

     This leads him to consider the possibility that instead of a benevolent God,
     there is a powerful and evil demon systematically deceiving him into
     thinking things to be so that are not in fact so.  This leads him to conclude
     as doubtable, and therefore as not knowledge,
          sense experience, and all that sense experience testifies to (e.g., that
          there is an external world, other people, and even that he has a
          body),
          his conviction that what he takes to be waking reality is real and not a
          dream (or a cosmic deception),
          his memory, and
          intellectual calculation (e.g., 2 + 3 = 5).

     3. The one thing Descartes finds to be absolutely certain in the midst of
         radical doubt and possible deception is that thinking (especially in the
         mode of doubt) exists, that he as a thinking thing exists.

This will become Descartes' foundational truth and the measure of all other truth:  Cogito [I think], ergo [therefore] sum [I am].

      4. From there Descartes investigates, solely on the basis of dialectical
          reasoning apart from reliance upon what has proved to be doubtable,
          and concludes

          a. What must be the criterion of knowledge -- namely, a candidate for
          belief whose certainty is wholly evident to the reflecting mind with
          the "clarity and distinctness" of the cogito's existence to itself;
          b.  What his essential nature must be -- namely, a thing that thinks
          (including also doubts, understands, affirms, denies, wills, refuses,
          imagines, and feels); and
          c.  What, to the contrary, must be the essential nature of the bodies to
          which our senses uncertainly testify -- namely, things which are
          extended in space.

      5. Descartes goes on to extend his foundation for knowledge and show
          how it can provide a basis for the general trustworthiness of sense
          perception, memory, and intellectual calculation, among other things,
          by offering what he believes to be proof of the existence and goodness
          of an infinitely powerful, wise, and good creator of himself (as a finite
          and fallible mind), a creator whose goodness would never allow his
          creature to be comprehensively deceived.

     6. Thus Descartes believes he has provided a foundation, on the one
          hand, for knowledge in morality and religion (in the mind's or soul's
          givenness to itself) and, on the other hand, for knowledge in the natural
          sciences (in the nature of physical bodies to which the senses give us
          access).

**IMMANUEL KANT**

Kant’s Refutation of Material Idealism works against Descartes’ project as well as Berkeley’s. Descartes believed that he could infer the existence of objects in space outside of him based on his awareness of his own existence coupled with an argument that God exists and is not deceiving him about the evidence of his senses. Kant argues in the Refutation chapter that knowledge of external objects cannot be inferential. Rather, the capacity to be aware of one’s own existence in Descartes’ famous cogito argument already presupposes that existence of objects in space and time outside of me.

Kant had also come to doubt the claims of the Rationalists because of what he called Antinomies, or contradictory, but validly proven pairs of claims that reason is compelled toward. From the basic principles that the Rationalists held, it is possible, Kant argues, to prove conflicting claims like, “The world has a beginning in time and is limited as regards space,” and “The world has no beginning and no limits in space.” (A 426/B 454) Kant claims that antinomies like this one reveal fundamental methodological and metaphysical mistakes in the rationalist project. The contradictory claims could both be proven because they both shared the mistaken metaphysical assumption that we can have knowledge of things as they are in themselves, independent of the conditions of our experience of them.

The Antinomies can be resolved, Kant argues, if we understand the proper function and domain of the various faculties that contribute to produce knowledge. We must recognize that we cannot know things as they are in themselves and that our knowledge is subject to the conditions of our experience. The Rationalist project was doomed to failure because it did not take note of the contribution that our faculty of reason makes to our experience of objects. Their a priori analysis of our ideas could inform us about the content of our ideas, but it could not give a coherent demonstration of metaphysical truths about the external world, the self, the soul, God, and so on.

**PLATO**

Plato was a major rationalist. He rejected all sense experience. For him, the problem of the one and the many meant that empiricism was useless.

“No man ever steps in the same river twice, for it's not the same river and he's not the same man.” 5

Yep, that is the problem of the one and the many by Heraclitus, quoted by Plato in Cratylus. As mentioned previously, the world is in a state of flux, so knowledge from a state of flux leads to knowledge that is itself flawed.

Instead, Plato deduced that we ‘recollected’ knowledge from ex-temporal (outside of time) abstract entities called forms. Each object or concept in this world has a correlating form in the, aptly named, realm of the forms. The forms are immune to the constrains of this world, like decay, so they are perfect in every way.