**Scientific Revolution**

Rene Descartes considered the **first modern philosopher**.

Discourse on Method (1637), was the touchstone of the scientific method. A response to the **lack of clarity he saw in the world of science**, Discourse describes how **scientific study should be prosecuted so as to achieve the utmost clarity, by using deductive reasoning to test hypotheses**. Descartes explained that the **test of an alleged truth is the clarity with which it may be apprehended, or proven**. **"I think, therefore I am," (cogito ergo sum)** is Descartes' famous example of the most clearly apprehended truth. In effect, the **evidence of thought proves the hypothesis of existence.**

Descartes tried to apply his physical theories and expand upon them in his works on human anatomy, which, though pioneering in some respects, were largely erroneous. He further wrote about the spiritual nature of man and theorized about the existence of the soul. The Cartesian philosophy (derived from his name, Descartes) won many followers during the seventeenth century.

Bacon advocated the **collection of all possible facts and phenomena and the processing of these through a sort of automatic logical mil**l. Bacon warned scientists against **four famous false notions, called Idols.**

1. **Idols of the Tribe** were **fallacies in humankind**, most notably man's proneness to believe that nature was ordered to a higher degree than it actually was.

2. **Idols of the Cave** were misconceptions inherent in individuals' thoughts, spawned by **private prejudices.**

3. **Idols of the Marketplace** were errors that arose from received systems of thought.

4. **Idols of the Theatre** were errors spawned by the influence of mere words over the human mind.

This set of theories received varying levels of acceptance and rejection, and ultimately left only a limited impact on the world of science. However, Bacon did make great and lasting strides in advocating a more logical scientific community less prone to reliance on authority and mysticism. Bacon's most well known work, Novum Organum (1620), attempts to provide for the organization of the scientific community by the manner in which the various fields of science relate to each other. His theories on logic and the organization of the sciences had a great effect on science in his time and into the future.

The scientific method of the Middle Ages had revolved around **Aristotle's inductive method of reasoning**, in which a scientist gathers facts about individual cases and uses them to reach a conclusion or theory. Descartes' great contribution was the introduction of **deductive reasoning**, in which the scientist first formulates an educated hypothesis, and then seeks evidence to support or disprove that hypothesis. The deductive method did not replace the inductive method, but it added to the tools of scientists of the era, and proved useful on many occasions.

Though Descartes the philosopher advocated order and rationality in method, Descartes the scientist did not always adhere to his own philosophy. Had he been as critical of his own theories as he was of those of others, including Galileo's, he would surely have seen that his theories on the make up of the cosmos, which revolved around a system of major and minor vortices, were clearly disproved by recorded observations. Further, his proposed anatomical theories, while complex and interesting, were untenable as the explanations for real phenomena.

Despite his shortcomings as a scientist, Descartes made many valuable contributions to science, mathematics, and most of all, philosophy. The Cartesian philosophy was the first complete and coherent philosophical system of modern times. It quickly attracted a following, and even was adopted by the clergy in many cases. Gradually, however, science exposed the errors in Descartes' scientific claims, and his following dwindled. However, Descartes had laid the foundation of modern philosophy, and left behind him a long chain of thinkers who believed that truth could be reached with the power of the human mind.

While Bacon was well respected in his time, it was not long before others began to poke holes in his philosophy, citing elements which were left out, and the lack of applicability in many cases. Yet despite Bacon's faults as a philosopher and failures as a scientist, the world owes him a great debt. Bacon observed the vices and misconceptions clung to by the scholastics of his time, and advocated the focus on ethics and logic, free from the restricting influence of the Church and many of the accepted ancient thinkers. He clearly and vigorously denounced the misconceptions and errors that had held scientific progress back during the Middle Ages, and thus expressed the spirit of the Scientific Revolution. His ideas on the cooperation and interaction of the fields of science factored greatly into the later establishment of the Royal Society in London and similar societies elsewhere, where scientists from different fields collaborated to advance science and technology as a whole. His thoughts on ethics were an inspiration to Enlightenment thinkers, who continued to advocate the practical application of Bacon's ethical code. Whatever his failings, Bacon succeeded in rousing the enthusiasm and spirit of logical inquiry of the scientists of his day and beyond. It is a further measure of respect to Bacon that a few of literary scholars, unbelieving that a mere commoner could have written Shakespeare's great plays, have attributed the works of Shakespeare to Bacon.

**THE NEW ORGANON**

**Francis Bacon**

Aristotle - (384–322BC). Aristotle wrote widely on almost every subject from ethics to politics to natural history, and dominated Western thought up to and beyond the Middle Ages. Medieval Aristotelian philosophers, who taught in universities or "schools," were often known as Scholastics. Many later scientists and philosophers worked in a fundamentally Aristotelian way. Bacon seeks to **end the dominance of Aristotle** by attacking his methodology and central premises; he argues that his dominance results from prejudice and from the authority of others, not from the merits of his philosophy. Bacon was not the first anti- Aristotelian philosopher, but he is among the most strident.

Axioms - Terms or statements that can be accepted as truthful. Bacon's method seeks to derive general axioms from sense impressions and experiments through a series of intermediate axioms.

Gilbert - William Gilbert (c1540–1603). Gilbert was Elizabeth I's physician, and published studies of electricity and magnetism. He published De Magnete in 1600, in which he argued that the world was a huge magnet with north and south poles. Bacon criticizes Gilbert's work as an example of the empirical style of philosophy, which focuses on a limited series of experiments and encourages the mind to develop unsubstantiated general theories. See Idols of the theater.

The Great Renewal - The Great renewal (or "instauration") of the arts and sciences was the broad project of which Bacon's New Organon forms a part. Bacon intended his Great Instauration to be in six volumes. It was a hugely ambitious project, one that aimed to redefine the logical foundations of science, to demolish the foolish notions that prevented scientific progress, to propose a new methodology, and ultimately benefit mankind immeasurably. The New Organon begins with an outline of the whole project, which was never completed.

**Idols of the cave** - The second of the "idols." Idols of the cave result from an individual's tastes and prejudices. Your education, the books you have read and the company you keep all distort your perception of nature. As a result, human perceptions of nature vary widely, simply because all men are different.

**Idols of the marketplace** - The third type of "idol." Idols of the marketplace come from men's association with others, and chiefly through words and language. Language is ambiguous, and often confuses our understanding of nature.

**Idols of the theatre**  - The fourth type of "idol." Idols of the theatre come from various philosophies; Bacon argues that all philosophies are no better than stage-plays. Bacon identifies various forms of this idol; sophistic, empirical and superstitious philosophy. Sophistic philosophy is personified by Aristotle, who was more concerned with clever but foolish arguments than with natural phenomena. Empirical philosophy as practiced by Gilbert concentrates on a narrow range of experiments to the exclusion of everything else. Superstitious philosophy is a corruption of philosophy by superstition and false religion. It is the worst form of error.

**Idols of the tribe** - The first of the series of "idols," or obstacles, that Bacon feels humans need to overcome in order to reason clearly. Idols of the tribe result from failings in human sense perception, and are general to all people.

Induction - The alternative logical method that Bacon proposes to replace Aristotle's syllogism. Essentially, induction begins by considering things as they appear in the world, then proceeds by a long series of intermediate steps to formulate general axioms about these things. Bacon details the various steps in this process, which begins with the collection of information about the things one is studying, then the formulation of initial impressions, then the use of privileged instances, in the first Book of The New Organon.

Organon - Bacon's New Organon or Novum Organon, refers to one of Aristotle's works. The Organon, or "Instrument for rational thinking" set out Aristotle's views on logic, which Bacon sees as useless for modern scientific inquiry. His work seeks to improve upon Aristotle by presenting a new logical method. Bacon sees his work as an "instrument for rational thinking" because his Organon sets out a carefully-defined process that any scientific investigator can follow; the investigator is not required to deviate very much form this protocol. It is essentially a machine for thinking about the natural world.

Privileged instances - Bacon identifies privileged instances as examples or occurrences of a given nature that reveal it with great precision and clarity. They allow the scientist quickly to identify the characteristics of that nature, after he has done the basic work of assembling tables of difference and similarity, and making a first harvest or interpretation. Essentially, they guide the investigation towards its conclusion. Bacon identifies twenty-seven such instances. His explanation of these instances emphasizes the role of experiment and observation within them. For example, after assembling information about a nature, the fourteenth privileged instance—crucial instances or "instances of the finger post"—help the investigator to decide to which of two similar natures the nature he is considering should be assigned. See induction.

Syllogism - The syllogism is the central building block of Aristotle's logic. It works by deriving a third term from two accepted premises, e.g: A. Socrates is a man B. All men are mortal. C. Socrates is mortal. Term C. must be true if we accept that terms A. and B. are also true. Syllogisms essentially rely on certain facts being accepted as absolutely true. Bacon argues that they are useless for scientific inquiry because, amongst other things, they rely on words that might be poorly defined or too abstract. Moreover, Bacon questions the essential truths that form the basis of the syllogism. Syllogisms, according to Bacon, are also divorced from practice and the active part of science. Induction is a far better method.

**DISCOURSE ON METHOD**

**Rene Descartes**

Overall Analysis and Themes

Descartes lived and worked in a period that Thomas Kuhn would call a "paradigm shift": one way of thinking, one worldview, was slowly being replaced by another. Descartes's work, while part of the new paradigm, still has one leg in the old mode of thought.

The old, waning worldview was scholastic Aristotelianism. The Aristotelian paradigm had a conception of the mind, of knowledge, and of science that may seem very alien to us today, but this conception held sway over Western thought for about two thousand years.

According to the Aristotelian tradition, the mind proper—what is exclusively "inside the head"—is **limited to reason and understanding**. Sensory perception, imagination, will, and so on, make reference to things outside the mind and so are not purely mental. Rather, they are the link that connects us to the outside world. According to Aristotle, there is no distinction between what I perceive and what is "out there." **Thus, sensory experience gives us direct and immediate knowledge of objects in the world.**

Science, in this worldview, is a matter of taking the immediate evidence of sensory experience and deducing certain conclusions from it. The sensory experience is indubitable, and the deductions are logical, so all scientific knowledge is based on absolute certainty.

One of Descartes's most significant contributions to the scientific revolution is his conception of sensory experience, imagination, and will as being just as much subjective mental phenomena as reason and understanding. His systematic doubting questions how it is that we can be certain about what we perceive. Descartes draws a sharp distinction between what our senses report to us and what is "out there."

This re-conception of the mind shakes the foundations of Aristotelian scholasticism. If sensory experience is no longer self-evident, then we can no longer deduce certain scientific truths from these observations. Essentially, Descartes makes us sharply aware of what goes into a scientific observation. It is not a purely neutral and objective act of seeing the world as it is; it is an interpretive act that must be undertaken with great care and circumspection.

The scientific paradigm that we have today owes a great deal to Descartes. Today, we have taken Descartes's method one step further. Now, we conclude that we can never have absolute certainty in the sciences. All we can hope for are sound theories that are supported by careful observations.

Descartes himself does not reach this conclusion. To a large extent, he is still set on finding certainty. His search for certainty, beginning with the famous line "I am thinking, therefore I exist," has largely defined the course of a great deal of philosophy since his time. We can debate whether Descartes is right in having found certainty in this claim, and we can debate what kind of knowledge this is, but it seems clear that it is not a kind of knowledge that is applicable to science as a whole. In finding this certainty, Descartes hopes to rebuild science in the Aristotelian method of deduction from certain first principles. In hindsight, this effort may seem a bit misguided.

Though his philosophy of science may be a bit askew, the philosophical method Descartes uses in part four of the Discourse has proven extremely valuable. His method of skeptical doubt has raised important philosophical questions concerning how we can be certain of, or even know, anything at all. His re-conception of what the mind is has largely defined the shape of Western psychology and philosophy ever since. His assertion that he is essentially a thinking thing and that his mind is distinct from his body has also raised a number of important philosophical questions: what is my relationship with my mind? What is my relationship with my body? If they are distinct, what is the causal connection between the two? And so on. Effectively, Descartes frames the questions that have preoccupied what we now call "modern philosophy.”

Descartes claims to have found a particularly effective method of guiding his reason that has helped him to make many significant discoveries in his scientific research. He undertakes to explain his method by means of autobiography: he tells the story of his intellectual development and of how he came upon this method.

He developed his method largely in reaction to the schooling in Aristotelian philosophy that he received at the hands of the Jesuits. He had been told that he would find knowledge and certainty in his schooling, but came out thoroughly dissatisfied. He had found no certainty, only ever-increasing doubts, so he left school, and traveled the world, learning about different people and different customs.

The real turning point comes on November 10, 1619, when he spends a day alone in a room with his thoughts. He decides to call into doubt all his former beliefs and opinions, holding on only to certain guiding principles and certain moral maxims that would help him live productively during this period of doubt. Applying these principles to algebra and geometry he has great success, discovering analytic geometry.

After nine years of travel, he settles in Holland and begins a systematic philosophical investigation. He finds he can doubt pretty much everything except the fact that he exists. The very act of doubting suggests to him that he must exist, or else he would not be able to doubt. He concludes: "I am thinking, therefore I exist." His knowledge of this claim is a "clear and distinct perception": it is not something that he learns through reasoning, but something that he simply knows because he is incapable of doubting it. He concludes further that he is essentially a thinking thing, and that his soul is distinct from his body. He also provides two arguments to prove the existence of God.

Descartes claims he has also developed a set of scientific principles that have allowed him to make a great many discoveries. He had initially planned to publish these in a work entitled The World, but suppressed the manuscript when he learnt of Galileo's condemnation by the Inquisition. Instead, he provides a brief summary of the sorts of things he discusses in that work. He claims that he would rather remain free from controversy during his lifetime so that he can devote his energy to further research rather than bitter disputes. The three essays—on optics, meteorology, and geometry—are meant to serve as examples of how his method can be applied. He also hopes that his publication of these essays will lead others to contribute their thoughts in those fields as well.

**Leviathan Hobbes**

Leviathan rigorously argues that **civil peace and social unity are best achieved by the establishment of a commonwealth through social contract**. Hobbes's ideal commonwealth is ruled by a sovereign power responsible for protecting the security of the commonwealth and granted absolute authority to ensure the common defence. In his introduction, Hobbes describes this commonwealth as an "artificial person" and as a body politic that mimics the human body. The frontispiece to the first edition of Leviathan, which Hobbes helped design, portrays the commonwealth as a **gigantic human form built out of the bodies of its citizens, the sovereign as its head.** Hobbes calls this figure the "Leviathan," a word derived from "sea monster" and the name of a monstrous sea creature appearing in the Bible; the image constitutes the definitive metaphor for Hobbes's perfect government. His text attempts to prove the necessity of the Leviathan for preserving peace and preventing civil war.

Hobbes begins his text by considering the elementary motions of matter, arguing that every aspect of human nature can be deduced from materialist principles. Hobbes depicts the natural condition of mankind--known as the **state of nature--as inherently violent and awash with fear**. The **state of nature is the "war of every man against every man," in which people constantly seek to destroy one another**. This state is so horrible that human beings naturally seek peace, and the **best way to achieve peace is to construct the Leviathan through social contract.**

Book II details the process of erecting the Leviathan, outlines the rights of sovereigns and subjects, and imagines the legislative and civil mechanics of the commonwealth. Book III concerns the compatibility of Christian doctrine with Hobbesian philosophy and the religious system of the Leviathan. Book IV engages in debunking false religious beliefs and arguing that the political implementation of the Leviathanic state is necessary to achieve a secure Christian commonwealth.

Hobbes's **philosophical method in Leviathan is modelled after a geometric proof, founded upon first principles and established definitions**, and in which each step of argument makes conclusions based upon the previous step. Hobbes decided to create a philosophical method similar to the geometric proof after meeting Galileo on his extended travels in Europe during the 1630s. Observing that the conclusions derived by geometry are indisputable because each of constituent steps is indisputable in itself, Hobbes attempted to work out a similarly irrefutable philosophy in his writing of Leviathan.

Commonwealth - A multitude of people who together consent to a sovereign authority, established by contract to have absolute power over them all, for the purpose of providing peace and common defense.

Contract - Also called "covenant" or "social contract," contract is the act of giving up certain natural rights and transferring them to someone else, on the condition that everyone else involved in making the contract also simultaneously gives up their rights. People agreeing to the contract retain only those rights over others that they are content for everyone else to retain over them.

First Principles - The fundamental and irreducible facts of nature that are established by philosophical definition and upon which philosophical arguments may be built. According to Hobbes, first principles are not discovered by observation or experiment but are decided by philosophical debate and social consent.

Law of Nature - A general rule discovered by reason that forbids a person from doing anything destructive to her own life and gives her the right of self-preservation. The laws of nature state that human beings must strive for peace, which is best achieved by contract.

Leviathan - A metaphor for the state, the Leviathan is described as an artificial person whose body is made up of all the bodies of its citizens, who are the literal members of the Leviathan's body. The head of the Leviathan is the sovereign. The Leviathan is constructed through contract by people in the state of nature in order to escape the horrors of this natural condition. The power of the Leviathan protects them from the abuses of one another.

Materialism - The philosophy of materialism states that physical matter and its motion explain all phenomena in the universe and construct the only reality that human beings can experience.

Natural Man - An inhabitant of the state of nature. Natural men are the main characters of the narrative within Hobbes's text, who escape from their natural condition by making a contract with each other to engineer the Leviathan. Although they are "men," the term also includes women (though the gender significance of this term should not be entirely ignored).

Natural Philosophy - Natural philosophy is the study of nature and the physical universe, and was the intellectual endeavour that eventually led to the historical development of modern science. Natural philosophers such as Francis Bacon and Robert Boyle believed that natural philosophy should derive inductively the workings of nature from natural history. Hobbes believed that natural philosophy should derive deductively the workings of nature from established first principles.

Plenum - Hobbes used the term "plenum" to refer to his conception of the universe; according to this conception, the universe is wholly material in nature, making possible the condition of a vacuum in space. The assumption that the universe is a plenum is an important aspect of Hobbes's materialism.

Sovereign - The person, or group of persons, endowed with sovereignty by the social contract. The sovereign is the head of the Leviathan, the maker of laws, the judge of first principles, the foundation of all knowledge, and the defender of civil peace.

Sovereignty - Supreme authority over a commonwealth. Sovereignty is owed complete obedience by its subjects. Hobbes describes sovereignty as the soul of the Leviathan.

State of Nature - The "natural condition of mankind" is what would exist if there were no government, no civilization, no laws, and no common power to restrain human nature. The state of nature is a "war of all against all," in which human beings constantly seek to destroy each other in an incessant pursuit for power. Life in the state of nature is "nasty, brutish and short."

**Second Treatise John Locke**

The Second Treatise of Government remains a cornerstone of Western political philosophy. Locke's theory of government based on the sovereignty of the people has been extraordinarily influential since its publication in 1690--the concept of the modern liberal-democratic state is rooted in Locke's writings.

Locke's Second Treatise starts with a **liberal premise of a community of free, equal individuals, all possessed of natural rights**. Since these individuals will want to acquire goods and will come into inevitable conflict, Locke invokes a **natural law of morality to govern them before they enter into society**. Locke presumes people will understand that, in order to **best protect themselves and their property, they must come together into some sort of body politic and agree to adhere to certain standards of behaviour**. Thus, they **relinquish some of their natural rights to enter into a social compact.**

In this civil society, the people submit natural freedoms to the common laws of the society; in return, they receive the **protection of the government**. By coming together, the people create an **executive power** to enforce the laws and punish offenders. The people entrust these laws and the executive power with authority. When, either through an abuse of power or an impermissible change, these governing bodies cease to represent the people and instead represent either themselves or some foreign power, the people may--and indeed should--**rebel against their government and replace it with one that will remember its trust.** This is perhaps the most pressing concern of Locke's Second Treatise, given his motivation in writing the work (justifying opposition to Charles II) and publishing it (justifying the revolution of King William)--**to explain the conditions in which a people has the right to replace one government with another.**

Locke links his abstract ideals to a deductive theory of unlimited personal property wholly protected from governmental invention; in fact, in some cases Locke places the sanctity of property over the sanctity of life (since one can relinquish one's life by engaging in war, but cannot relinquish one's property, to which others might have ownership rights). This joining of ideas--consensual, limited government based upon natural human rights and dignity, and unlimited personal property, based on those same rights, makes the Second Treatise a perfectly-constructed argument against absolutism and unjust governments. It appeals both to abstract moral notions and to a more grounded view of the self-interest that leads people to form societies and governments.

The Second Treatise of Government **places sovereignty into the hands of the people**. Locke's fundamental argument is that **people are equal and invested with natural rights in a state of nature in which they live free from outside rule**. In the state of nature, natural law governs behaviour, and each person has license to execute that law against someone who wrongs them by infringing on their rights. People take what they need from the earth, but hoard just enough to cover their needs. Eventually, people begin to trade their excess goods with each other, until they develop a common currency for barter, or money. Money eliminates limits on the amount of property they can obtain (unlike food, money does not spoil), and they begin to gather estates around themselves and their families.

People then exchange some of their natural rights to enter into society with other people, and be protected by common laws and a common executive power to enforce the laws. People need executive power to protect their property and defend their liberty.The civil state is beholden to the people, has power over the people only insofar as it exists to protect and preserve their welfare. Locke describes a state with a separate judicial, legislative, and executive branch--the legislative branch being the most important of the three, since it determines the laws that govern civil society.

They have the right to dissolve their government, if that government ceases to work solely in their best interest. The government has no sovereignty of its own--it exists to serve the people.

To sum up, Locke's model consists of a civil state, built upon the natural rights common to a people who need and welcome an executive power to protect their property and liberties; the government exists for the people's benefit and can be replaced or overthrown if it ceases to function toward that primary end.

**Kant**

Philosophy may be divided into three fields: physics (the study of the physical world), ethics (the study of morals), and logic (the study of logical principles). These fields may involve either "empirical" study of our experiences, or "pure" analysis of concepts. "Metaphysics" is the study of pure concepts as they relate to moral or physical experience.

People generally presume that moral principles must apply to all rational beings at all places and all times. Moral principles must therefore be based on concepts of reason, as opposed to particularities of culture or personality. The goal of the Grounding for the Metaphysics of Morals is to develop a clearer understanding of moral principles, so that people may better avert distractions.

Several general principles about moral duties may be advanced. First, actions are moral if and only if they are undertaken for the sake of morality alone (without any ulterior motive). Second, the moral quality of an action is judged not according to the action's consequences, but according to the **motive that produced it**. Third, actions are moral if and only if they are undertaken out of respect for the moral law (as opposed to some other motivation such as a need or desire).

Since specific interests, circumstances, and consequences cannot be considered, the **moral "law" must be a general formula that is applicable in all situations**. Rather than commanding specific actions, it must express the principle that actions should be undertaken with pure motives, without consideration of consequences, and out of pure reverence for the law.

The formula that meets these criteria is the following:

**we should act in such a way that we could want the maxim (the motivating principle) of our action to become a universal law**.

**People have a decent intuitive sense for this law. Still, it is helpful for philosophy to state the law clearly so that people can keep it in mind.**

It is nearly impossible to find examples of pure moral actions. Nearly every action we observe can be attributed to some interest or motivation other than pure morality. Yet this should not discourage us, for moral principles come from reason, not from experience. Indeed, moral principles could not come from experience, for all experiences depend on particular circumstances, whereas moral principles must have absolute validity, independent of all circumstances.

Because it applies in all circumstances, reason's fundamental moral principle may be called the "categorical imperative." The categorical imperative may be expressed according to the same formula as the moral law: **act only in such a way that you could want the maxim (the motivating principle) of your action to become a universal law.** When people violate the categorical imperative, they apply a different standard to their own behaviour than they would want applied to everyone else in the form of a universal law. This is a contradiction that violates principles of reason.

The categorical imperative may also be formulated as a requirement that we must not treat other rational beings as mere means to our own purposes. Rational beings have the capacity to pursue predetermined objectives ("ends") by means of their will, **yet in pursuing their goals they never think of themselves as mere means to another purpose;** they are themselves the purpose of their actions- -they are "**ends in themselves.** **If we treat other rational beings as mere means, we contradict the fact that all rational beings are ends in themselves. In this case, our principles could not be universal laws, and we would violate the categorical imperative.**

Another way of stating the point that rational beings are ends in themselves is to say that rational beings are simultaneously the authors and the subjects of the principles they execute through their will. The categorical imperative may also be formulated as a requirement that we act only according to principles that could be laws in a "kingdom of ends"--that is, a legal community in which all rational beings are at once the makers and subjects of all laws.

The argument so far has established what the moral law is, but has not demonstrated why we feel we should be moral. The basis for morality is the concept of freedom. Freedom is the ability to give your own law to your will. When we follow the demands of some need, desire, or circumstance, we are in a state of "heteronomy"; our will is determined by something outside of ourselves. When we follow the categorical imperative and chose maxims that could be universal laws, we are in a state of "autonomy"; we use reason to determine our own law for ourselves. In other words, we are free.

Freedom of the will can never be demonstrated by experience. It is a principle of reason that everything we understand may be explained on the basis of prior conditions. In other words, the world we observe and understand is a world governed by the principle that every event was caused by another event. Yet this world is nothing more than the picture that reason develops in making sense of "appearances." The world of "things in themselves"--the objects underlying appearances--may have different qualities, including freedom of the will. We can have no knowledge of things in themselves. Thus freedom of the will may be neither proven nor disproven. All that we may know is that we have a concept of freedom of the will, and that morality may be based on this concept.

Empirical - Based on or relating to observational evidence. Thus an empirical fact would be a fact substantiated by evidence.

Enlightenment - A period in European intellectual history from the later seventeenth century to the early nineteenth characterized by confidence in reason and a willingness to challenge traditional assumptions.

Reason - The capacity for logical analysis and argument. "Reason" in this sense is related to the term "reasoning," which refers to logical deliberation or argument, and to the notion of giving "reasons" for one's beliefs. Enlightenment thinkers like Kant believed that reason could provide clear answers to basic philosophical, scientific, and political questions.

Will - The faculty that enables us to pursue a course of action and influence events in the world, as in "freewill," "an act of will," "impose your will on someone.”

Over the course of the Commentary sections on the specific chapters, we have reviewed a number of criticisms of Kant. Some philosophers have argued that in practice our moral beliefs are based on intuitions, not on reason. Hegel pointed out that moral beliefs can never be unconditional because moral questions must be resolved in the context of the society in which we live. ##Nietzsche## argued that reason is not the source of moral freedom, but is rather an impediment to free choice.

The common thread of all these criticisms is that Kant's position is too abstract to be useful. As human beings, we live in a particular place at a particular time. It is not necessarily possible or desirable for us to separate our rationality from the other features of our personality. We may reason about issues in abstract terms, and we may imagine the situations of other people, yet our starting point must always be our own life situation.

It is a typical feature--a common "mistake," if you will--of Enlightenment thinking to presume that we can ignore our own particularities and discover universal principles of reason. This "mistake" may have been possible because Enlightenment philosophers came from a relatively homogeneous culture (that of eighteenth-century Europe) and from a relatively homogeneous class position (one of relative financial security). This homogeneity may have led Enlightenment thinkers to oversimplify certain questions, presuming that their answers were "rational" when they in fact depended on cultural assumptions.

On the other hand, Kant's philosophy--and Enlightenment philosophy in general-- is by no means a philosophy of privilege. Indeed, Kant's ideas are radically egalitarian. According to Kant, moral truths are not received from on high through divine revelation or inspiration. Rather, they are based on reasons that make sense to all people (indeed, all rational beings) who bother to think about them. The passion with which people espouse moral views suggests that many people continue to share Kant's view that moral principles must be absolute and universal. Late twentieth-century people may be more aware of diversity than Kant was. As a result, we may have less confidence than him that what makes sense to us will make sense to other people. Nevertheless, in our day as in Kant's, people do tend to think that there is more to their moral beliefs than mere cultural prejudice.

Like all great philosophers, Kant's arguments have provoked a wide range of responses, positive and negative. Whatever we make of Kant's views, it would be difficult to underestimate the historical impact of his "Copernican Revolution" in philosophy. Even today, nearly two hundred years after his death, Kant's arguments remain a powerful presence in philosophy.

**THE COMMUNIST MANIFESTO**

**Karl Marx and Friedrich Engels**

The Communist Manifesto reflects an attempt to explain the goals of Communism, as well as the theory underlying this movement. It argues that class struggles, or the exploitation of one class by another, are the motivating force behind all historical developments. Class relationships are defined by an era's means of production. However, eventually these relationships cease to be compatible with the developing forces of production. At this point, a revolution occurs and a new class emerges as the ruling one. This process represents the "march of history" as driven by larger economic forces.

Modern Industrial society in specific is characterized by class conflict between the bourgeoisie and proletariat. However, the productive forces of capitalism are quickly ceasing to be compatible with this exploitative relationship. Thus, the proletariat will lead a revolution. However, this revolution will be of a different character than all previous ones: previous revolutions simply reallocated property in favor of the new ruling class. However, by the nature of their class, the members of the proletariat have no way of appropriating property. Therefore, when they obtain control they will have to destroy all ownership of private property, and classes themselves will disappear.

The Manifesto argues that this development is inevitable, and that capitalism is inherently unstable. The Communists intend to promote this revolution, and will promote the parties and associations that are moving history towards its natural conclusion. They argue that the elimination of social classes cannot come about through reforms or changes in government. Rather, a revolution will be required.

The Communist Manifesto has four sections. In the first section, it discusses the Communists' theory of history and the relationship between proletarians and bourgeoisie. The second section explains the relationship between the Communists and the proletarians. The third section addresses the flaws in other, previous socialist literature. The final section discusses the relationship between the Communists and other parties.

Terms

Bourgeoisie - Composing the class of modern Capitalists, the bourgeoisie are the employers of wage laborers, and the owners of the means of production.

Means of production - The means of production include not only the physical instruments of production (tools, machines, etc.), but also the methods of working (skills, forms of cooperation, division of labor, etc.), and knowledge that can be applied to production (science, etc.).

Mode of production - The economic structure of society that defines people's mode of living. It consists of the means of production as well as the relations of production.

Proletariat - The class of modern wage-laborers. They do not have their own means of production, and therefore they must sell their own labor in order to survive.

Relations of production - The necessary relations between people as required for a certain form of material production. The relations of production refer to the distribution of the means of production, the forms of possession (collective and individual private property), and the distribution of the product.