

Naturalism

In philosophy, **naturalism** is the "idea or belief that only natural (as opposed to supernatural or spiritual) laws and forces operate in the world." Adherents of naturalism (i.e., naturalists) assert that natural laws are the rules that govern the structure and behavior of the natural universe, that the changing universe at every stage is a product of these laws.

"Naturalism can intuitively be separated into an ontological and a methodological component." "Ontological" refers to the philosophical study of the nature of reality. Some philosophers equate naturalism with materialism. For example, philosopher Paul Kurtz argues that nature is best accounted for by reference to material principles. These principles include mass, energy, and other physical and chemical properties accepted by the scientific community. Further, this sense of naturalism holds that spirits, deities, and ghosts are not real and that there is no "purpose" in nature. Such an absolute belief in naturalism is commonly referred to as *metaphysical naturalism*.

Assuming naturalism in working methods as the current paradigm, without the unfounded consideration of naturalism as an absolute truth with philosophical entailment, is called *methodological naturalism*. The subject matter here is a philosophy of acquiring knowledge based on an assumed paradigm.

With the exception of pantheists—who believe that Nature is identical with divinity while not recognizing a distinct personal anthropomorphic god—theists challenge the idea that nature contains all of reality. According to some theists, natural laws may be viewed as so-called secondary causes of God(s).

In the 20th century, Willard Van Orman Quine, George Santayana, and other philosophers argued that the success of naturalism in science meant that scientific methods should also be used in philosophy. Science and philosophy are said to form a continuum, according to this view.

Origins and history

Naturalism first arose in classical Indian philosophies, was the foundation of two (Vaisheshika, Nyaya) of six orthodox schools and one (Carvaka) heterodox school of Hinduism. The Carvaka, Nyaya, Vaisheshika schools originated in 7th, 6th, and 2nd century BCE, respectively.

Naturalism is most notably a Western phenomenon, but an equivalent idea has long existed in the East. Though unnamed and never articulated into a coherent system, one tradition within Confucian philosophy embraced a form of Naturalism dating to the time of Wang Chong in the first century, if not earlier, but it arose independently and had little influence on the development of modern naturalist philosophy or on Eastern or Western culture.

The ideas and assumptions of philosophical naturalism were seen in the works of the Ionian School pre-Socratic philosophers. The earliest presocratic philosophers, such as Thales,

Anaxagoras or especially the atomist Democritus, were labeled by their peers and successors "the *physikoi*" (from the Greek φυσικός or *physikos*, meaning "natural philosopher," borrowing on the word φύσις or *physis*, meaning "nature") because they investigated natural causes and gave explanations for natural events, often excluding any role for gods in the creation or operation of the world. These early philosophers subscribed to principles of empirical investigation that strikingly anticipate naturalism. This eventually led to fully developed systems such as Epicureanism, which sought to explain everything that exists as the product of atoms falling and swerving in a void.

Plato's world of eternal and unchanging Forms, imperfectly represented in matter by a divine Artisan, contrasts sharply with the various mechanistic Weltanschauungen, of which atomism was, by the fourth century at least, the most prominent... This debate was to persist throughout the ancient world. Atomistic mechanism got a shot in the arm from Epicurus... while the Stoics adopted a divine teleology... The choice seems simple: either show how a structured, regular world could arise out of undirected processes, or inject intelligence into the system. This was how Aristotle (384–322 bc), when still a young acolyte of Plato, saw matters. Cicero (*On the Nature of the Gods* 2. 95 = Fr. 12) preserves Aristotle's own cave-image: if troglodytes were brought on a sudden into the upper world, they would immediately suppose it to have been intelligently arranged. But Aristotle grew to abandon this view; although he believes in a divine being, the Prime Mover is not the efficient cause of action in the Universe, and plays no part in constructing or arranging it... But, although he rejects the divine Artificer, Aristotle does not resort to a pure mechanism of random forces. Instead he seeks to find a middle way between the two positions, one which relies heavily on the notion of Nature, or *physis*.

—*R. J. Hankinson, Cause and Explanation in Ancient Greek Thought*

With the rise and dominance of Christianity in the West and the later spread of Islam, naturalism was generally abandoned by intellectuals. Thus, there is little evidence for it in the Middle Ages. The reintroduction of Aristotle's empirical epistemology as well as previously lost treatises by Greco-Roman natural philosophers during the Renaissance contributed to Scientific Revolution which was begun by the medieval Scholastics without resulting in any noticeable increase in commitment to naturalism. In this period, some naturalists adhered to a distinct doctrine, materialism, which became the only category of naturalism widely defended until the 20th century, when advances in physics resulted in widespread abandonment of prior formulations of materialism.

By the late Middle Ages the search for natural causes had come to typify the work of Christian natural philosophers. Although characteristically leaving the door open for the possibility of direct divine intervention, they frequently expressed contempt for contemporaries who invoked miracles rather than searching for natural explanations. The University of Paris cleric Jean Buridan (a. 1295-ca. 1358), described as "perhaps the most brilliant arts master of the Middle Ages," contrasted the philosopher's search for "appropriate natural causes" with the common folk's habit of attributing unusual astronomical phenomena to the supernatural. In the fourteenth century the natural philosopher Nicole Oresme (ca. 1320–82), who went on to become a Roman Catholic bishop, admonished that, in discussing various marvels of nature, "there is no reason to take recourse to the heavens, the last refuge of the weak, or demons, or to our glorious God as if

He would produce these effects directly, more so than those effects whose causes we believe are well known to us."

Enthusiasm for the naturalistic study of nature picked up in the sixteenth and seventeenth centuries as more and more Christians turned their attention to discovering the so-called secondary causes that God employed in operating the world. The Italian Catholic Galileo Galilei (1564–1642), one of the foremost promoters of the new philosophy, insisted that nature "never violates the terms of the laws imposed upon her."

During the Enlightenment, a number of philosophers including Francis Bacon and Voltaire outlined the philosophical justifications for removing appeal to supernatural forces from investigation of the natural world. Subsequent scientific revolutions would offer modes of explanation not inherently theistic for biology, geology, physics, and other natural sciences.

Pierre Simon de Laplace, when asked about the lack of mention of intervention by God in his work on celestial mechanics, is said to have replied, "I had no need of that hypothesis."

It was not until the early modern era and Age of Enlightenment that naturalism, like that of Benedict Spinoza, David Hume, Denis Diderot, Julien La Mettrie, and Baron d'Holbach, among others, started to emerge again in the 17th and 18th centuries.

19th century physics added electromagnetic force fields, and in the 20th century matter was found to be a form of energy and therefore not fundamental as materialists had assumed. (See History of physics.) In philosophy, renewed attention to the problem of universals, philosophy of mathematics, the development of mathematical logic, and the post-positivist revival of metaphysics and the philosophy of religion, initially by way of Wittgensteinian linguistic philosophy, further called the naturalistic paradigm into question. Developments such as these, along with those within science and the philosophy of science brought new advancements and revisions of naturalistic doctrines by naturalistic philosophers into metaphysics, ethics, the philosophy of language, the philosophy of mind, epistemology, etc., the products of which include physicalism and eliminative materialism, supervenience, causal theories of reference, anomalous monism, naturalized epistemology (e.g. reliabilism), internalism and externalism, ethical naturalism, and property dualism, for example.

The modern emphasis in naturalism primarily originated in the ideas of medieval scholastic thinkers during the Renaissance of the 12th century. The current usage of the term naturalism "derives from debates in America in the first half of the last century. The self-proclaimed 'naturalists' from that period included John Dewey, Ernest Nagel, Sidney Hook and Roy Wood Sellars."

Currently, metaphysical naturalism is more widely embraced than in previous centuries, especially but not exclusively in the natural sciences and the Anglo-American, analytic philosophical communities. While the vast majority of the population of the world remains firmly committed to non-naturalistic worldviews, prominent contemporary defenders of naturalism and/or naturalistic theses and doctrines today include J. J. C. Smart, David Malet Armstrong, David Papineau, Paul Kurtz, Brian Leiter, Daniel Dennett, Michael Devitt, Fred

Dretske, Paul and Patricia Churchland, Mario Bunge, Jonathan Schaffer, Hilary Kornblith, Quentin Smith, Paul Draper and Michael Martin, among many other academic philosophers.

According to David Papineau, contemporary naturalism is a consequence of the build-up of scientific evidence during the twentieth century for the "causal closure of the physical", the doctrine that all physical effects can be accounted for by physical causes.

Etymology

The term "methodological naturalism" for this approach is much more recent. According to Ronald Numbers, it was coined in 1983 by Paul de Vries, a Wheaton College philosopher. De Vries distinguished between what he called "methodological naturalism," a disciplinary method that says nothing about God's existence, and "metaphysical naturalism," which "denies the existence of a transcendent God." The term "methodological naturalism" had been used in 1937 by Edgar S. Brightman in an article in *The Philosophical Review* as a contrast to "naturalism" in general, but there the idea was not really developed to its more recent distinctions.

Description

According to Steven Schafersman, naturalism is a philosophy that maintains that;

1. Nature encompasses all that exists throughout space and time;
2. Nature (the universe or cosmos) consists only of natural elements, that is, of spatiotemporal physical substance—mass—energy. Non-physical or quasi-physical substance, such as information, ideas, values, logic, mathematics, intellect, and other emergent phenomena, either supervene upon the physical or can be reduced to a physical account;
3. Nature operates by the laws of physics and in principle, can be explained and understood by science and philosophy;
4. The supernatural does not exist, i.e., only nature is real. Naturalism is therefore a metaphysical philosophy opposed primarily by Biblical creationism".

Or, as Carl Sagan succinctly put it: "*The Cosmos is all that is or ever was or ever will be.*"

In addition Arthur C. Danto states that Naturalism, in recent usage, is a species of philosophical monism according to which whatever exists or happens is *natural* in the sense of being susceptible to explanation through methods which, although paradigmatically exemplified in the natural sciences, are continuous from domain to domain of objects and events. Hence, naturalism is polemically defined as repudiating the view that there exists or could exist any entities which lie, in principle, beyond the scope of scientific explanation.

Assumptions needed for science from naturalism

According to Kuhn, all science is based on an approved agenda of unprovable assumptions about the character of the universe, rather than merely on empirical facts. These assumptions—a paradigm—comprise a collection of beliefs, values and techniques that are held by a given

scientific community, which legitimize their systems and set the limitations to their investigation. Alfred North Whitehead wrote, "All science must start with some assumptions as to the ultimate analysis of the facts with which it deals. These assumptions are justified partly by their adherence to the types of occurrence of which we are directly conscious, and partly by their success in representing the observed facts with a certain generality, devoid of *ad hoc* suppositions." Priddy notes that all scientific study inescapably builds on at least some essential assumptions that are untested by scientific processes. For naturalists, nature is the only reality. There is no such thing as 'supernatural'. The scientific method is to be used to investigate all reality, including the human spirit: "The great majority of contemporary philosophers would happily... reject 'supernatural' entities, and allow that science is a possible route (if not necessarily the only one) to important truths about the 'human spirit'."

Naturalism is the implicit philosophy of working scientists, that the following basic assumptions are needed to justify the scientific method:

1. *that there is an objective reality shared by all rational observers.* "The basis for rationality is acceptance of an external objective reality." "Objective reality is clearly an essential thing if we are to develop a meaningful perspective of the world. Nevertheless its very existence is assumed." Our belief that objective reality exist is an assumption that it arises from a real world outside of ourselves. As infants we made this assumption unconsciously. People are happy to make this assumption that adds meaning to our sensations and feelings, than live with solipsism." Without this assumption, there would be only the thoughts and images in our own mind (which would be the only existing mind) and there would be no need of science, or anything else."
2. *that this objective reality is governed by natural laws;* "Science, at least today, assumes that the universe obeys to knowable principles that don't depend on time or place, nor on subjective parameters such as what we think, know or how we behave." Hugh Gauch argues that science presupposes that "the physical world is orderly and comprehensible."
3. *that reality can be discovered by means of systematic observation and experimentation.* Stanley Sobottka said, "The assumption of external reality is necessary for science to function and to flourish. For the most part, science is the discovering and explaining of the external world." "Science attempts to produce knowledge that is as universal and objective as possible within the realm of human understanding."
4. *that Nature has uniformity of laws and most if not all things in nature must have at least a natural cause.* Biologist Stephen Jay Gould referred to these two closely related propositions as the constancy of nature's laws and the operation of known processes. Simpson agrees that the axiom of uniformity of law, an unprovable postulate, is necessary in order for scientists to extrapolate inductive inference into the unobservable past in order to meaningfully study it.
5. *that experimental procedures will be done satisfactorily without any deliberate or unintentional mistakes that will influence the results.*
6. *that experimenters won't be significantly biased by their presumptions.*
7. *that random sampling is representative of the entire population.* A simple random sample (SRS) is the most basic probabilistic option used for creating a sample from a population. The benefit of SRS is that the investigator is guaranteed to choose a sample that represents the population that ensures statistically valid conclusions.

Metaphysical naturalism

Metaphysical naturalism, also called "ontological naturalism" and "philosophical naturalism", is a philosophical worldview and belief system that holds that there is nothing but natural elements, principles, and relations of the kind studied by the natural sciences, i.e., those required to understand our physical environment by mathematical modeling. Methodological naturalism, on the other hand, refers exclusively to the methodology of science, for which metaphysical naturalism provides only one possible ontological foundation.

Metaphysical naturalism holds that all properties related to consciousness and the mind are reducible to, or supervene upon, nature. Broadly, the corresponding theological perspective is religious naturalism or spiritual naturalism. More specifically, metaphysical naturalism rejects the supernatural concepts and explanations that are part of many religions.

Methodological naturalism

Methodological naturalism concerns itself with methods of learning what nature is. These methods are useful in the evaluation of claims about existence and knowledge and in identifying causal mechanisms responsible for the emergence of physical phenomena. It attempts to explain and test scientific endeavors, hypotheses, and events with reference to natural causes and events. This second sense of the term "naturalism" seeks to provide a framework within which to conduct the scientific study of the laws of nature. Methodological naturalism is a way of acquiring knowledge. It is a distinct system of thought concerned with a cognitive approach to reality, and is thus a philosophy of knowledge. Studies by sociologist Elaine Ecklund suggest that religious scientists in practice apply methodological naturalism. They report that their religious beliefs affect the way they think about the implications - often moral - of their work, but not the way they practice science.

In a series of articles and books from 1996 onward, Robert T. Pennock wrote using the term "methodological naturalism" to clarify that the scientific method confines itself to natural explanations without assuming the existence or non-existence of the supernatural, and is not based on dogmatic metaphysical naturalism (as claimed by creationists and proponents of intelligent design, in particular by Phillip E. Johnson). Pennock's testimony as an expert witness at the *Kitzmiller v. Dover Area School District* trial was cited by the Judge in his *Memorandum Opinion* concluding that "Methodological naturalism is a 'ground rule' of science today":

Expert testimony reveals that since the scientific revolution of the 16th and 17th centuries, science has been limited to the search for natural causes to explain natural phenomena.... While supernatural explanations may be important and have merit, they are not part of science." Methodological naturalism is thus "a paradigm of science." It is a "ground rule" that "requires scientists to seek explanations in the world around us based upon what we can observe, test, replicate, and verify.

Views

Alvin Plantinga

Alvin Plantinga, Professor Emeritus of Philosophy at Notre Dame, and a Christian, has become a well-known critic of naturalism. He suggests, in his evolutionary argument against naturalism, that the probability that evolution has produced humans with reliable true beliefs, is low or inscrutable, unless their evolution was guided (for example, by God). According to David Kahan of the University of Glasgow, in order to understand how beliefs are warranted, a justification must be found in the context of supernatural theism, as in Plantinga's epistemology. (*See also supernormal stimuli*).

Plantinga argues that together, naturalism and evolution provide an insurmountable "*defeater* for the belief that our cognitive faculties are reliable", i.e., a skeptical argument along the lines of Descartes' Evil demon or Brain in a vat.

Take *philosophical naturalism* to be the belief that there aren't any supernatural entities - no such person as God, for example, but also no other supernatural entities, and nothing at all like God. My claim was that naturalism and contemporary evolutionary theory are at serious odds with one another - and this despite the fact that the latter is ordinarily thought to be one of the main pillars supporting the edifice of the former. (Of course I am *not* attacking the theory of evolution, or anything in that neighborhood; I am instead attacking the conjunction of *naturalism* with the view that human beings have evolved in that way. I see no similar problems with the conjunction of *theism* and the idea that human beings have evolved in the way contemporary evolutionary science suggests.) More particularly, I argued that the conjunction of naturalism with the belief that we human beings have evolved in conformity with current evolutionary doctrine... is in a certain interesting way self-defeating or self-referentially incoherent.

Robert T. Pennock

Robert T. Pennock contends^[45] that as supernatural agents and powers "are above and beyond the natural world and its agents and powers" and "are not constrained by natural laws", only logical impossibilities constrain what a supernatural agent could not do. He states: "If we could apply natural knowledge to understand supernatural powers, then, by definition, they would not be supernatural". As the supernatural is necessarily a mystery to us, it can provide no grounds on which to judge scientific models. "Experimentation requires observation and control of the variables.... But by definition we have no control over supernatural entities or forces." Science does not deal with meanings; the closed system of scientific reasoning cannot be used to define itself. Allowing science to appeal to untestable supernatural powers would make the scientist's task meaningless, undermine the discipline that allows science to make progress, and "would be as profoundly unsatisfying as the ancient Greek playwright's reliance upon the *deus ex machina* to extract his hero from a difficult predicament."

Naturalism of this sort says nothing about the existence or nonexistence of the supernatural, which by this definition is beyond natural testing. As a practical consideration, the rejection of supernatural explanations would merely be pragmatic, thus it would nonetheless be possible, for an ontological supernaturalist to espouse and practice methodological naturalism. For example, scientists may believe in God while practicing methodological naturalism in their scientific work. This position does not preclude knowledge that is somehow connected to the supernatural.

Generally however, anything that can be scientifically examined and explained would not be supernatural, simply by definition.

W. V. O. Quine

W. V. O. Quine describes naturalism as the position that there is no higher tribunal for truth than natural science itself. In his view, there is no better method than the scientific method for judging the claims of science, and there is neither any need nor any place for a "first philosophy", such as (abstract) metaphysics or epistemology, that could stand behind and justify science or the scientific method.

Therefore, philosophy should feel free to make use of the findings of scientists in its own pursuit, while also feeling free to offer criticism when those claims are ungrounded, confused, or inconsistent. In Quine's view, philosophy is "continuous with" science and *both* are empirical. Naturalism is not a dogmatic belief that the modern view of science is entirely correct. Instead, it simply holds that science is the best way to explore the processes of the universe and that those processes are what modern science is striving to understand. However, this Quinean Replacement Naturalism finds relatively few supporters among philosophers.

Karl Popper

Karl Popper equated naturalism with inductive theory of science. He rejected it based on his general critique of induction, yet acknowledged its utility as means for inventing conjectures.

A naturalistic methodology (sometimes called an "inductive theory of science") has its value, no doubt.... I reject the naturalistic view: It is uncritical. Its upholders fail to notice that whenever they believe to have discovered a fact, they have only proposed a convention. Hence the convention is liable to turn into a dogma. This criticism of the naturalistic view applies not only to its criterion of meaning, but also to its idea of science, and consequently to its idea of empirical method.

— *Karl R. Popper, The Logic of Scientific Discovery, (Routledge, 2002), pp. 52–53, ISBN 0-415-27844-9.*

Popper instead proposed that science should adopt a methodology based on falsifiability for demarcation, because no number of experiments can ever prove a theory, but a single experiment can contradict one. Popper holds that scientific theories are characterized by falsifiability.

See also

- Daoism
- Deism
- Empiricism
- Epicureanism
- Hylomorphism
- Liberal naturalism

- Materialism
- Metaphysical naturalism
- Naturalistic pantheism
- Physicalism
- Religious naturalism
- Scientism
- Sociological naturalism
- Supernaturalism
- Alfred North Whitehead
- Vaisheshika