

Nagel and reductionism argumentative essay examples

[Science](#), [Biology](#)



Reductionism is the application of deductive logic to formal scientific systems that eliminates obsolete or unnecessary theories, while still incorporating older ones that had been verified into the new synthesis. In psychology, for example, a physicalist would reduce the concept of mind to brain and various mental and emotional states to biological processes (Jones 145). Thomas Nagel thought that the earliest examples of reductionism during the Scientific Revolution and Enlightenment of the 17th and 18th Centuries were the most successful. This era of history produced many examples of homogeneous reductionism, such as the ancient theories of bodily humors giving way to William Harvey's circulation of blood of the laws of Galileo and Kepler being reduced to Newtonian mechanics. Reductionism is guided by materialist and empiricist assumptions, as well as Ockham's razor, and holds that the simplest explanation that fits all the known facts is probably the correct one. From the materialist viewpoint, only the physical universe exists, not God, an immortal soul or a non-physical mind, and in fact the mind and the brain are one in the same. Its version of the universe is composed of elementary particles that operate according to predictable mathematical laws. Nevertheless, Nagel thought that reductionism often fails for more complex systems of biology, psychology and society, and even in 'hard' sciences like chemistry and physics can be complicated by the need for bridge laws between the reducing and reduced theories (heterogeneous reduction). He therefore described himself as realist in his belief that the subjective domain existed as a fact in its own right, no matter whether humans will ever be able to explain or comprehend it adequately, and there may well be some facts that are simply never understood (Nagel 314).

Nagel notes that science already has an excellent understanding about the physical functions of the human organism, including its anatomy and physiology, but much less about internal mental states. Intelligent bats and aliens might learn even more, but they would still have little basis for comprehending purely subjective and internal mental experiences in the human mind (Nagel 314). Nagel finds it difficult to understand the “ objective character of an experience apart from the particular point of view from which its subject apprehends it” (Nagel 315). No human could ever comprehend the experience of a bat unless they could see the world from a bat’s point of view, which is impossible. Physicalism has a clear meaning in that “ mental states are states of the body; mental events are physical events” and this theory is not inadequate or unreasonable merely because we do not yet know how these states function (Nagel 316). Current reductionist and materialist theories cannot resolve this problem because “ we are completely unequipped to think about the subjective character of experience without relying on the imagination” (Nagel 317).

Other physicalists and reductionists who regarded the mind as a complex physical-chemical organ also had difficulty explaining its internal moods, thoughts, desires and memories in purely biological terms. Human beings are undoubtedly conscious and have experiences, and these are not simply related to neurons or DNA. David Armstrong was a physicalist, and argued that consciousness was both an internal state and a physical state in the central nervous system, and concerns “ simply the scanning of one part of our central nervous system by another” (Armstrong 266). No better theory of the mind can exist than the materialist or physicalist one because “ man is

nothing but a physic-chemical mechanism" (Armstrong 259). Gilbert Ryle was another famous materialist and reductionist who denied that any 'ghost in the machine' existed or that the immortal soul somehow operated the physical body. Like Nagel and Armstrong, though, he conceded that explaining the link between bodies and minds was very difficult. Behaviorists had come to understand that expressions indicate moods and emotions, while vision, hearing and motion are all based on sensory inputs being received by the mind, but no one could actually measure and observe mental processes at the time Ryle was writing in 1949 (Ryle 252). He did not regard the mind as purely mechanical device, but as a complex organ that operated on the basis of cause and effect. If the mind was not a ghost or ethereal entity operating a body, it was more a kind of internal-governing motor of the body whose laws of operation were mostly unknown. These laws need not be purely deterministic, however, and Ryle rejected both idealism and materialism because they made an artificial distinction between the mind and body (Ryle 257). The antireductionist David Davidson made a similar argument and denial "the irreducibility of the mental level to any level governed by laws" (Jones 152).

Nagel and the antireductionists are rightfully skeptical that fields like psychology and philosophy will eventually be reduced to 'hard' sciences, which seems very plausible given the difficulties that even the most uncompromising physicalists have encountered in this area. Reductionism has proved most problematic in the 'softer' sciences like biology, economics, and psychology, and attempts to reduce the mind to the brain or behavior to predictable mathematical laws have not been successful. As

Davidson declared, each type of science had its own autonomous, irreducible minimum and this type of pluralism “ will exist as long as there is science” (Jones 16). This has not precluded computer scientists, theorists of artificial intelligence and neuroscience from attempting to create thinking machines, androids and robots that will simulate human behavior and perhaps even develop qualities of initiative, emotion, judgment and creativity. If this ever occurs, then the softer sciences may indeed come to resemble physics and chemistry, which were the first fields to be separated from theology and metaphysics in the 17th and 18th Centuries and develop their own sets of predictable mathematical laws. Nagel is also correct that reductionism has even proved more difficult than expected in these fields, though, such as reducing thermodynamics to statistical mechanics or Mendel’s laws of inheritance to molecular genetics. Turning the study of the mind, behavior and society into hard sciences may even turn out to be impossible, no matter what new developments occur in genetics, mechanics and computer technology.

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