

# MISSED OPPORTUNITIES IN DIALOGUE BETWEEN PSYCHOLOGY AND RELIGION

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In the Middle Ages, studies of the natural world, human behavior and theology were part of an interwoven body of knowledge. However, in modern times an increasing divide has separated science and religion. A careful review suggests that currents and accidents in intellectual and social history have served to unnecessarily foreclose lines of thought that might lead to rapprochement of religion with science, including psychology. Developments in Western views of epistemology and the philosophy of science have been a major factor in this estrangement. In the early modern period, flexible views of science (e.g. Bacon) were replaced by doctrinaire formulations emphasizing quantitative methodologies. Especially important was the development of positivism, which opened the door to a reductionistic naturalism that intended not only to reduce dialogue with religion but also to replace it with science. Within psychology, Freud and other early psychologists were eager to establish psychology as a "real" science and enthusiastically embraced the positivist perspective and rejected possible alternatives. Although this positivist approach is philosophically untenable, it continues to dominate psychology and obstruct dialogue between science and religion as well as progress in psychology as a whole. A return to a broader and more modest conception of science is warranted.

For many years, a number of scientific fields including psychology have taken an ambivalent or even hostile stance toward religion, especially Christianity. Recently, however, there has been at least a superficial change in this position. The past few years have seen an explosion in literature related to religion and science (e.g. Barbour,

1997; Russell, 2003;), As Reber (this issue) has noted, psychology has an especially pressing need for dialogue with religion, and contemporary work by theologians suggests that they also see a need to converse (e.g. Loder, 1998; Pannenberg, 1985; Ulanov, 2001). Yet there remains a hesitancy that is partly driven by professional concerns that religion and science are incompatible (Drees, 1999, p. 2).

Conversations between disciplines can proceed in different ways, the most substantive of which is *integration*. Gorsuch (2002a) defines integration as "when two or more disciplines are jointly brought to bear on the same issue so that decisions about that issue reflect the contributions of both disciplines" (p. 6). Integration requires two things: a positive attitude between two disciplines, and the identification of particular problems for conversation (Gorsuch, 2002a, p. 19). In this view, since psychology and religion share many interests, difficulties about integration must lie in the attitudes of each towards the other—in other words, the issue is a problem of mutual understanding. For Richardson (this issue), *hermeneutic dialogue* may provide the most fruitful model for overcoming these barriers and providing a non-assimilative approach to integration (Nelson & Slife, this issue).

From a historical perspective, negative attitudes between science and religion are a relatively recent development. This article will argue that negative attitudes are not inevitable, but are partly a product of outdated ways of thinking that continue to influence us.

## CONCEPTUAL STRUCTURES

The history of science and religion is largely a history of ideas, so we need to begin by looking at some key philosophical presuppositions that have affected their relationship. In modern science and psychology, these typically include *ontological assumptions of materialism and naturalism*, which in turn are related to *epistemological attitudes* toward science and non-science inquiry that can lead to the problem of *scientism*.

The author would like to acknowledge the help of Dr. Jeanne Brown and especially Dr. Kevin Mooney in their comments on a previous version of this article. Erin Klein, Patrick McClory and Michelle Sexton also contributed bibliographic assistance in the preparation of the manuscript. Correspondence regarding this article may be sent to James M. Nelson, Dept. of Psychology, Valparaiso University, Valparaiso, IN 46383. Email: jim.nelson@valpo.edu

### Materialism

*Materialism* is an old ontological category, going back to pre-Socratic philosophers like Democritus who saw the world as consisting exclusively of material entities. However, specific philosophic or scientific discussions of materialism are hard to find (Crane & Mellor, 1995). Materialists like Moser and Trout (1995) argue that it is because “materialism is now the dominant systematic ontology among philosophers and scientists, and there are currently no established alternative ontological views competing with it” (p. ix). As a result materialism often constitutes what Stam (1991) calls an “unspoken grammar” in research (p. 18).

While materialism is often thought of as a single philosophical category, in fact it encompasses a variety of specific positions. In *soft or nonreductive materialism*, material objects are thought to occupy a prominent but not exclusive role in the foundation of reality. Sometimes this takes the form of *methodological physicalism* (we can only study the world through physical entities). In *hard, reductive or eliminative materialism* only material substances are thought to be real. Hard materialism is widely accepted in modern science but questionable from a philosophical standpoint, as it has great difficulty accounting for things like subjectivity and first-person reference (Griffin, 2000, pp. 76-77; Madell, 2003; Nagel, 1986).

In the early modern period, materialism developed in the dualistic philosophy of Descartes, the writings of Hobbes and the empirical monism of Spinoza. The Cartesian dualistic approach has been particularly influential. Descartes held a *fully dualistic* position dividing the mental and physical into realms that are both important but have largely separate existences. Later materialistic philosophy has tended toward a *fractured dualistic* approach, dividing the world in the material and non-material entities and then labeling non-material phenomena like consciousness as “epiphenomena” or a type of “folk belief” (e.g. Churchland, 1995)

### Naturalism

*Naturalism* is a philosophical category that places the natural world in the center of our view of reality. Traditionally it has been assumed that naturalism—like materialism—comes in soft and hard varieties that involve varying levels of commitment to a naturalistic view. For instance, Numbers (2003) argues that it is

possible to hold a *methodological or soft naturalism* that involves a commitment to (1) an abstract approach to reality that sees a “true” description of the world as a set of law-like regularities, and (2) the production of “objective” empirical explanations from outside the phenomena without recourse to supernatural forces—especially theistic ones (Drees, 1999, p. 26). This form of naturalism is widely accepted, and has been supported by Christians throughout the history of science as a way of reconciling naturalism with religious beliefs and practices. However, as Slife (this issue) notes, methodological naturalism is not a consistent position, and individuals with no need to justify religion can move to a *metaphysical or hard naturalism* (Strawson, 1985, p. 1), the belief that (1) the material natural world is the only one that exists and therefore (2) the disciplines that study the basis of this world (such as science, and especially physics) will provide the ultimate route to truth.

The privileging of abstract lawfulness in naturalism has important implications. First, since laws operate at the level of groups or classes of phenomena rather than individual events (e.g. quantum behavior or the actions of particular persons), generality and abstraction are privileged over the particular and concrete. Second, the emphasis on law-like regularity invites comparisons between the world and a machine. In the early modern period, clocks were a favorite image, while in modern psychology the computer has become a dominant metaphor.

Mechanical interpretations of the world tend to *explain* how things work in an abstract way but are limited in their ability to help us *understand* the concrete and particular meaning of the world to us as persons (cf. Ricoeur, 1976, 1981). Polanyi (1962) nicely illustrates this difference using the example of a car. It is entirely possible to explain the potential functions of a car such as forward motion and production of polluting gasses by examining its mechanism, but understanding the meaning of a car to the person who drives it (e.g., as a way of getting to work) will not be captured by the mechanistic explanation. A complete knowledge of the world thus involves *both* explanation and understanding. Understanding is best produced in a hermeneutic approach to the world (Richardson, this issue).

### Ontology, epistemology and integration

While naturalism and materialism are conceptually separate, over time the hard versions of each have

become conflated, with important ontological and epistemological implications (Griffin, 2000, p. 37; Olafson, 2001, p. 5-6). An ontology of hard naturalism and materialism contain a number of assumptions that are seemingly incompatible with religions like Christianity, which maintain a theistic commitment to the continuing activity of God in the world (Griffin, 2000, pp. 35, 65; Richards & Bergin, 2003). Also, hard positions on naturalism and materialism have epistemological implications, limiting the scope of scientific inquiry and allowable methods of study. For instance, hard materialism excludes any potentially non-materialistic (e.g. spiritual) phenomena or more “subjective” methods that might discover evidence incompatible with reductive materialism (Griffin, 2000, p. 70-71). This leads one toward a hard *scientism* “the attitude that the only kind of reliable knowledge is that provided by science, coupled with a conviction that all our personal and social problems are ‘soluble’ by enough science” (Peacock, 1993, 7-8; cf. Stenmark, 2001, p. 8); in other words it is the belief that the domain of science has no boundary (e.g. Drees, 1999, p. 8). Hard naturalism and materialism can also lead to a reductionistic view of the unity of science, in which all phenomena are explainable from the view of physics, and should be studied by the same methodology.

It is crucial to note that philosophical positions such as hard naturalism or scientism are not “proven facts” but assumptions that affect integration in several ways. First, by definition they rule out softer versions of physicalism that might form the basis of attempts at integration (e.g., Murphy, 1998). Second, scientism eliminates the motive for a conversation with religion. If science can do everything, why look elsewhere? Third, hard versions of materialism, naturalism and scientism have rigid links between ontology and epistemology, making them closed systems that are inherently less open to critique. This is a serious problem for science; most scientists are committed to a search for truth, but scientism inhibits the critical process necessary for the pursuit of knowledge, leading scientists to make claims that are false and ultimately hindering the chance of gaining what they seek. On the other hand, rejection of these hard philosophical positions allows the scientist to recognize the validity of other ways of knowing—such as religious ones—and enter into a meaningful integration with benefits to both.

The beginning of an escape from our current situation lies in the past. History helps us to understand

how these problems become so deeply entrenched in our ways of thinking, suggests errors that need to be corrected, and helps us identify missed opportunities. In the case of psychology and religion, the key historical processes have their roots in the beginnings of modern science and the positivistic philosophies that arose from the French Enlightenment.

### EARLY MODERN SCIENCE AND RELIGION: BACON AND GALILEO

Science and religion have co-existed in Western civilization since classical Greek times. For most of that period the relationship was marked by peaceful coexistence and even cooperation. In the Middle Ages, studies of the natural world, human behavior and theology were part of an interwoven body of knowledge studied by all truly educated people (Grant, 1986; Lindberg, 1992); scholars like Thomas Aquinas (1225-1274) wrote about the essential unity of scientific and theological reasoning, and their mutual effect in gaining knowledge (e.g., Aquinas, 1273/1998, Pt. I, Q 79, Art 9).

Things began to change with the work of Francis Bacon (1561-1626). Bacon combined a respect for religion with concern about a lack of productive inquiry. He hoped that science would provide a better quality of life, positive societal changes (Bacon, 1627/1989; Rossi, 1997), and lead to “good works” like religion (Zagorin, 1998) but saw the lack of separation between science and religion as hindering the advancement of learning.

It is not often appreciated that religious motivations formed a basis for the work of Bacon and his contemporary, Galileo (Redondi, 1998). Bacon felt he must “begin from God” (Bacon, 1620/2000, I.93), and saw his role as a prophetic one of encouraging human fulfillment and announcing the coming of a new age (Webster, 1975; Whitney, 1986, p. 23-24). He grew up in a Puritan home; his ideas reflect Puritan and Calvinist influence and were seen as a natural part of their eschatology and ethics (Cohen, 1990; Perez-Ramos, 1998, p. 13), as well as positive views toward the role of reason and gaining knowledge of God through the study of nature (cf., Calvin, 1960, 1.5.1-2). This formed the basis of the generally positive reception for science among Anglican clergy and other Christians in the early modern period (Kocher, 1953). Like Galileo, Bacon displayed openness to different methodologies and set few limits on the type of phenomena worthy of investigation

(Bacon, 1620/2000, I.28, 30, 88; cf. Galileo, 1589/1992, p. 102; 1623/1957b, p. 244; 2001; Wallace, 1992, p. 73; Perez-Ramos, 1998, p. 16).

Despite the religious motivations behind his work, Bacon is well known for advocating separation between science and theology, a position widely held by his contemporaries (Zagorin, 1998, p. 49). Like Galileo he used the Christian analogy of two separate but equal books (Augustine, 400 A.D./1994, 32.20; Hess, 2003; Kocher, 1953, p. 41; Manuel, 1974, p. 48) which held that theological knowledge is based on revelation from God's book while science is based on evidence from the senses and nature's book (cf., Galileo, 1632/2001, p. 3). Separation between the books was essential, a view shared by later figures like Newton (Hess, 2003; Galileo, 1615/1957a, pp. 182, 193). "Divine and human testimony should be separate" (Bacon, 1605/2001, I.VIII.6) since there are two types of knowledge: divine revelation, and knowledge of nature which "consisteth in the notions of the mind and reports of the senses" (II.V.1). They should be separate, for "to seek heaven and earth in the word of God . . . is to seek temporary things amongst eternal; and as to seek divinity in philosophy is to seek the living amongst the dead, so to seek philosophy in divinity is to seek the dead amongst the living" (II.XXV.16).

Despite the separation, Bacon attempted to articulate a soft naturalism and scientism that left room for the possibility of dialogue or even occasional integration between science and religion. He drew a distinction between fact and value and left morality in the realm of religion rather than science (Bacon, 1605/2001, II.XXV.3), thus giving theology a unique role in any conversation. He thought the miraculous could not be conceived as part of the natural world and as such as no place in science (II.I.4), but he nonetheless accepted the presence of the miraculous without attempting a naturalistic reduction of it. The scriptures could lead to meditation on nature (I.VI.15) and in some limited ways nature could lead one to God, although science could not provide safe religious knowledge (II.VI.1), and attempts to derive natural philosophy from scripture were foolish (Bacon, 1620/2000, I. 65). Galileo echoed this openness in exhortations to use science as an aid to scriptural interpretation (Galileo, 1615/1989), although his emphasis on quantification departed from Bacon in ways that had a profound limiting effect on methodology (Galileo, 1623/1957b, pp. 237-238; Husserl, 1970, pp. 23-59).

However, Bacon's own value stances—perhaps inherent in his soft naturalism—tended to undercut the possibility for equal dialogue. He held a uniformly positive view of progress—the development of artillery is seen as equally good as the invention of ways to preserve food (Bacon, 1605/2001, I, IV, 12; Perez-Ramos, 1997). While he values religion as the other "book" he also privileges the values of progress over contemplation, explanation over understanding, and control or manipulation of nature for human ends over contemplative religious values. If power and control are the key values by which an ontology or epistemology are judged, and most major religions emphasize the otherness of power and control, religion thought is *prima facie* a less desirable explanation for the world. This privileges science over religion in any dialogue, making true integration a questionable enterprise despite the many elements in his thought that are conducive to dialogue and integration. As Richardson (this issue) argues, Bacon's value commitments of progress, control, and power continue to play a crucial role in psychology in the form of an influential "disguised ideology" of individualism and instrumentalism.

### POSITIVISM, SCIENCE, AND RELIGION

Beginning around 1800, positivism entered the picture as a philosophy of science and with it a more extreme version of naturalism and scientism. It originated with the work of Auguste Comte (1798-1857), but had its basis in the thinkers of the French Enlightenment like Saint-Simon (1808/1952a, 1813/1952b, 1825/1952c; Manuel, 1956; Standley, 1982), Condorcet (1795/1955) and Turgot (Goodell, 1994, p. 146; Manuel, 1962, p. 2; Pickering, 1993, p. 106). Their agenda was anti-religious, shaped by centuries of state-church repression, as well as the effects of religious wars and intolerance (Goodell, 1994, p. 18; Toulmin, 1990). Bacon's theories and Newton's amazing explanations of natural phenomena helped inspire in them a belief in progress through science and a strictly natural view of the world (Goodell, 1994, pp. 86-87), leading writers like Laplace to minimize or even suppress the openness to religion in earlier scientists like Newton (Austin, 1970; Jacob, 1986; Koyre, 1965, p. 21; Manuel, 1974, p. 14).

Comte's positive philosophy is a theory of knowledge that has three aspects. First, positivism refers to a positive process for gaining knowledge of natural



laws through sense experience. Second, positivism argues against non-scientific procedures for gaining knowledge, such as metaphysics or theology. Third, positivism emphasizes the positive progress of human learning and society. These ideas formed the basis of his famous *Course in Positive Philosophy* (1830-42/1998a), which spelled out the following positions:

- (1) *Positivistic empiricism*: The only true knowledge is scientific or positive knowledge; metaphysical (nonempirical) and theological approaches to gaining knowledge are useless and should be abandoned; this includes rejection of the introspective method, and with it the development of a field of psychology (Comte, 1830/1988, p. 184).
- (2) *Skepticism*: There is no such thing as absolute truth or knowing the true or final cause of things; the most we can know is "relations of succession and likeness" (Comte, 1830/1988, p. 135).
- (3) *Mechanistic naturalism*: All phenomena are subject to invariable natural laws; this makes possible the ultimate end goal of science, which is prediction and control: "the prevision of phenomena ... and our voluntary modification of them" (Comte, 1830/1988, p. 160).
- (4) *Reductionism*: We should explain things using few concepts; ideally a single concept
- (5) *The unity of science*: The scientific methodology can and should be extended to the study of individuals and groups. Fields of study are interlinked in a hierarchical manner, with physics at the bottom and psychology as a branch of physiology.
- (6) *Social reform*: Application of positive principles would result in highly desirable changes in education and the social order, including the elimination of traditional religion.

Like Bacon, Comte had an idealistic view of progress. He felt his greatest contribution lay in his formulation of the Law of Three Stages of human evolution, which included "the primitive theological state, the transient metaphysical, and the final positive state" (Comte, 1830-42/1998a, p. 285). The passing away of theological thought was assured, a consequence of inevitable social evolution (p. 199). Science could work to eliminate theology (pp. 161-163), and will push it aside, for "true science has no other aim than the establishment of intellectual order, which is the basis of every other" (p. 212). He predicted that a new order would lead to the replacement of absolute ideas with relativism (p. 220) and the elimination of theological doctrines which obscure progress (p. 225). Comte's later work also contained the outline for a positivist religion to replace Christianity (Comte, 1851-54/1998b, pp. 381-398, 448-476).

It is difficult to disagree with the assessment of John Stewart Mill (1969) that positivism represents an extreme form of naturalism, as well as a kind of hard scientism (p. 270). The positivist view of history envisions the destruction of religion, not dialogue with it.

## POSITIVISM AND PSYCHOLOGY

While doctrinaire Comtean positivism did not fare well after his death (Pickering, 1993, p. 585; Simon, 1963), aspects of his thought became tremendously influential and fueled the conflict view of science and religion (e.g. White, 1901). Positivism had a huge impact on psychology in its formative years, and continues to dominate the field as Slife (this issue) and many others have noted (e.g., Stam, 1991). These tendencies entered psychology through a number of routes, including (1) the standard 19<sup>th</sup> century philosophy of science articulated by John Stewart Mill, (2) the work of Sigmund Freud, and (3) logical positivism. The positivist view of science offered a way of setting up psychology as a "true science" apart from philosophy and religion, rejecting the views of William James and others that this would lead to a "softer" science more conducive to dialogue (Bjork, 1983, p. 172; Coon, 2002; Edie, 1987, p. 26-28; Fuchs, 2002; James, 1897, p. 131; 1912, pp. 132-133; 2003, p. 44; Pitkin, 1996; Seigfreid, 1990, p. 66; Taylor, 1998)

### *John Stewart Mill (1806-1873)*

Mill became a primary figure in the philosophy of science through the publication of his *System of Logic* (1872), which was the basic manual of scientific reasoning in the 19<sup>th</sup> century at the time that psychology was forming as a scientific discipline. He saw himself as presenting a universal system of inquiry that perfected Bacon's project of induction (Perez-Ramos, 1988, p. 23). Mill was also one of Comte's chief popularizers in England. They both had a personal commitment to atheism (Pickering, 1993, pp. 11, 523) and the replacement of traditional theological beliefs with a scientific culture (e.g. Mill, 1998). Mill gave a favorable review to many aspects of positivism, including the Comtean picture of history and the plan for establishing an atheistic Religion of Humanity in place of a transcendent Christianity (Mill, 2002, p. 327; 1969, p. 341; Raeder, 2002).

Mill believed that all scientific knowledge begins with empirical "single facts" rather than metaphysical

ideas (2002, pp. 248, 370, 395). He advocated the use of the "Hypothetical Method" and especially the experimental method for science (p. 384), although in the case of psychology, the "science of the mind" (1969, p. 265), he felt it needed to be applied differently because behavior is a different type of subject matter, subject to individual variability according to the character and circumstances of each person (2002, p. 553-554). He had a strong view of quantification, with quantified experimental work serving as the gold standard of scientific inquiry (p. 146): Ultimately he felt that "all causes operate according to mathematical laws ... the laws of quantity become the grand instrument for calculating forward to an effect or backward to a cause" (p. 406).

### *Sigmund Freud*

Freud's views on religion were influenced by his personal experiences and the opinions of others who shared his antipathy toward religion, as well as the positivist and materialist views of his teachers (Domenjo, 2000; Gay, 1998; Grotstein, 1992; Ramzy, 1977). Following a hard materialistic ontology, Freud developed a vision that psychology should be "a natural science: that is, to represent psychological processes as quantitatively determinate states of specifiable material particles" (Freud, 1953, p. 295). This hard materialistic and naturalistic basis of his theory continued to be a principle in his later work (Mackay, 1989, p. 222).

Freud's critique of religion echoed the Comtean Law of Three Stages by describing three systems of thought that have developed in human history, "animistic" (or mythological), religious and scientific (Freud, 1950, p. 97). The latter stage parallels the state of personal maturity when the pleasure principle has been renounced in favor of the reality principle (pp. 112-113) and "men have acknowledged their smallness and submitted resignedly to death and to the other necessities of nature" (p. 110). Religious beliefs are untrustworthy and not to be accepted (p. 33). Human reasoning, Logos, should be our god (Freud, 1961, p. 70), as "scientific work is the only road which can lead us to a knowledge of reality outside ourselves" (p. 40). Fortunately, "a turning-away from religion is bound to occur with the fatal inevitability of a process of growth" (p. 55). It is easy to see how this extreme scientism, when coupled with his basic materialism and naturalism, would be conducive to conflict with religion instead of conversation.

### *Logical positivism*

Logical positivism was the third route into psychology for positivism. It began as a movement to develop a unified science based on verifiable statements, and become the de-facto epistemology for psychology (Koch, 1992). Of the members of the group Herbert Feigl is most relevant to psychology. Feigl came to the US in 1930 and spent a year at Harvard with Edwin Boring at the time Skinner was completing his doctoral work. Eventually Feigl went to Minnesota where he was a colleague of Paul Meehl. Feigl edited or wrote extensively on the application of positivist concepts to psychology, including a reductive materialist approach to the mind-brain problem (Feigl, 1958). Their views on verification, reductionism and religion had a strong impact on attitudes toward any dialogue between psychology and religion.

### *Verification.*

In the logical positivist view of language and logic, meaningful sentences are statements of fact that can be verified in experience, or derived from statements that have previously been verified. Statements are thus either true or false, with no possibility of any intermediate condition, and meaning can be completely deconstructed into its component parts as in the early Wittgenstein's concept of atomic statements. This idea automatically excludes the paradox, tension and dialectical thinking are central to many religious beliefs, like the Christian doctrine of the Trinity (God is both three and one) or the concept of incarnation. It also seems unequipped to deal with the uniqueness and non-repeatability inherent in each individual life.

### *Reductionism and the Unity of Science.*

Logical positivists held a hard naturalistic position, accepting a hierarchy of sciences with physics at its base, and chemistry, biology, psychology and the social sciences on successively higher levels (e.g. Hempel, 2001). They generally treated psychology as a science, but were quite willing to engage in reduction of psychological phenomena. Hempel (1949; cf. Schlick, 1949a) argued that there was no inherent difference between psychology and the natural sciences. Minds, feelings and other internal phenomena could be said to exist as long as it was agreed that they were simply "abbreviations of physicalist statements." Carnap (1949) argued that

boundary lines between biology and psychology were due to prescientific issues like “old magical and later metaphysical mind-body dualism.” Because psychological phenomena were at their base material, physical operational definitions became crucial (Frank, 1977). Feigl (1949a) thought that the use of these definitions would not only clarify meaning but also purify science of any “pre-scientific or non-scientific” elements. Psychologists and other authors (e.g. Schlick, 1949b) used the operationalization theory of Perry Bridgman (1950, 1959, 1993), a Nobel laureate physicist who stressed the importance of replication in scientific work. This latter point is quite important with regards to integration, because some elements of religious experience are inherently non-replicable and thus by definition not scientific statements (Gorsuch, 2002b). Interestingly, Bridgman himself strongly opposed the use of his work in psychology as he felt that rigid operationalization would be unable to meaningfully represent important psychological phenomena.

It is important to note here that the kind of reduction proposed by the logical positivists was not a *methodological reduction* designed to simplify things so that we can understand them (a necessary part of understanding our world). Rather it was an *ontological reduction*, that things in their being are nothing more than a naturalistic category of reduction such as physical objects—a much more ambitious position.

### *Opposition to Religion and Metaphysics.*

Logical positivism pursued the Comtean view of religious thought as primitive and problematic, viewing metaphysical or theological ideas as unverifiable and thus nonsensical (Ayer, 1952; Ayer & Copleston 1994; Russell, 1997, 2001). Feigl (1949b) noted that one of the valuable aspects of logical positivism was its anti-metaphysical stance. In his view, “scientific explanations differ sharply from the pseudo-explanations of the animistic, theological or metaphysical types” because of their testability and parsimony. Positivists of course denied that they had any kind of untestable metaphysical or religious presuppositions underlying their work (Feigl, 1956)! He adopted a stance of conflict toward religion, arguing that anything based on metaphysical or theological views was incompatible with modern science, a remnants of or regressions to prescientific thought characteristic of “less mature phases of

intellectual growth” (Feigl, 1980). Non-scientific ways of knowing like “religious ecstasy” or artistic inspiration were not valid knowledge claims, although there might be a role for religion if it promoted positive human values.

### *The Failure of Logical Positivism.*

The logical positivist movement largely died out shortly after the mid-20<sup>th</sup> century for a number of reasons. Even the enthusiasts of the movement were unable to develop an atomistic, reductive doctrine of verification that was philosophically tenable. The positivist view of the world also sat uncomfortably with some of the views of modern physics. The black-and-white logic of positivism was at odds with the principle of complementarity of some physical phenomena (e.g. light, which acts as both a particle and a wave), and atomistic prediction was unable to account for the chaotic behavior found in dynamic systems (e.g. the weather). Positivist views of history, science and religion also came under scrutiny. Modern historians see the historical relationship between science and theology is much more complex than Comte’s position (Brooke, 1991), or that his view is just plain wrong. As Leahey (2002) notes, the idea that the Christian Middle Ages was a time of irrationality and ignorance “has been thoroughly discredited for over half a century and has no place in any responsible history of the West.” Philosophers (e.g. Kuhn, Feyerabend, Polanyi) have also questioned the status of science as a mechanical, objective enterprise, although many scientists remain unconvinced, especially by more extreme postmodern versions of criticism.

While positivism as a whole has been rejected, a kind of neo-positivist philosophy has emerged to take its place. This system retains many aspects of positivism like materialism and atomistic reductionism, but rejects rigid empirical verification in favor of a congruence doctrine, where statements are considered acceptable if they are congruent with other statements in the paradigm, or help explain how the core beliefs of the paradigm are not really threatened by empirical evidence that is un-supportive or contrary (Kuhn, 1996; Lakatos, 1978). This kind of reasoning can be seen in areas like modern evolutionary psychology, which often accepts “speculative but plausible” as adequate verification (e.g., Murphy & Stich, 2000, see especially pp. 70-71; cf., Root, 1993).

## IMPLICATIONS FOR INTEGRATION AND DIALOGUE

Most historians of psychology indicate that positivistic versions of naturalism have been our dominant philosophy of science. Although positivist ideas are no longer seen as viable in philosophy, positivist beliefs are still widely held by psychologists, appearing as an “unspoken grammar” (Stam, 1991, p. 18) and having a number of effects that greatly affect our ability to carry out integration or dialogue between psychology and religion.

First, positivism has made a hard naturalism and materialism the dominant ontology of psychology (Griffin, 2000; Leahey, 1991). The result is that the paradigms with the widest acceptance in psychology have been those with positivistic and mechanistic orientations, such as behaviorism (Yanchar & Hill, 2003). As we have seen, such models limit the possibility of dialogue, and in fact were sometimes constructed with the express intention of excluding religion. Eventually, scholars interested in true dialogue must confront the limitations imposed by naturalistic and materialistic assumptions. Psychology can also benefit from questioning these limitations, which further explanation at the expense of understanding.

Second, positivism influences epistemology in psychology. When early experimental psychologists were trying to establish a scientific professional identity for their field, they looked to Mill’s gold standard of scientific quantitative and experimental procedures (Gorsuch, 2002a, p. 48) and Bridgman’s theory of operationalization, even though Mill and Bridgman questioned their applicability to psychology. Hard materialism and naturalism privilege certain methodologies and a hard scientism assumes that scientific psychological knowledge should replace religious ideas. New knowledge is automatically assumed to be superior and investigations from non-positivist perspectives are devalued, ignoring the possibility that past knowledge and tradition (such as theological and metaphysical) might constitute different types of knowledge rather than a “primitive” point of view (Leahey, 2002, 1987; Scheler, 1970; Paranjpe, 1998). Because positivism gave priority to methodology over ontology, non-material phenomenon of interest to religion that could not be handled by positivist methodologies were excluded from consideration or reduced to material “equivalents,” fostering a “cult of empiricism” (Toulman, 1992), and excluding important questions from consideration (Gadamer,

1981, p. 11). This is bad for psychology in general as well as integration. As Taylor (1998) notes, “historically much of normative experimental laboratory psychology as it is practiced in the universities today has not evolved past late 19<sup>th</sup> century Newtonian mechanics in its theories, whereas in its methods it continues to follow an outmoded 1930s definition of the physical sciences.” A return to the original Baconian vision of a science that encourages broad inquiry and flexible methodology would offer important advances over the current situation.

Third, positivist views of science and religion have influenced psychology toward a conflict model of relation. Although long ago set aside by historians, analogs of Comte’s Law of Three Stages are still held by writers like Paul Churchland (1995; 1996, pp. 16-18) and E. O. Wilson (1978, pp. 192-193, 200-201), fostering confrontation between science and religion. Outmoded views such as these persist in part because of an uncritical acceptance of the positivist and to some extent Baconian values they embody: the privileging of prediction and control (Feigl, 1956) and abstract mechanistic explanation over the concrete understanding of the world at a level where it is actually lived. The view that a particular paradigm will ultimately explain everything given enough time is also detrimental to psychology in general, as it blinds investigators to the limitations of their point of view and the need for a paradigm shift to truly account for all the data at hand. Among a number of possibilities, hermeneutic approaches (Richardson, this issue) seem especially well suited to advance not only the vital dialogue between science and religion but also the field of psychology as a whole.

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