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## Behavior Theory and Biblical Worldview (Chapter 2 from the Human Reflex)

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## PART II

Major Issues:

A Biblical Perspective

## 2. Behavior Theory and Biblical Worldview

THIS CHAPTER considers the question of whether there are fundamental inconsistencies between behavior theory and the biblical worldview.\*

### A HISTORICAL PERSPECTIVE

To properly understand some of the issues involved in discussions of the relationship of science to Christian faith in the 1980s, it will be helpful to consider some of the historical developments that have led to our present viewpoints and perspectives. Although the fact is not now widely recognized, the Christian Church was at the forefront of the development of modern science. Fundamental to the development of science was the view that God created a world that had intrinsic order, that God commanded human beings to have "dominion" over the world, and that our ability to effectively exercise this control over our world required an understanding of its operation.<sup>1</sup>

Beyond the role of the Christian worldview in the rise of modern science, the Church also played a major role in the emergence of institutions of higher education. Harvard, Yale, Princeton, Columbia, Stanford, and virtually all of the major universities in the United States (prior to the establishment of the "land grant" universities in the late nineteenth century) were founded by various religious organizations.<sup>2</sup> Historically, then, the widespread notion

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\* In so doing, it will be necessary to examine some rather abstract and philosophical issues. At the same time, however, an effort will be made to preview some of the practical implications of these issues that will be examined in greater detail in later chapters. Although the material is intrinsically complex, for the purposes of this chapter, the issues have necessarily been simplified.

that a religious worldview is inconsistent with a scientific worldview must be seen as a recent phenomenon. A number of factors have contributed to this development.

A major emphasis of enlightenment philosophy was to seek to reject and discredit supernatural worldviews. This philosophical perspective developed in the context of an era that was widely influenced by Platonic thought. In the Platonic worldview, which is essentially dualistic, reality is considered to include two spheres: the material realm and the spiritual realm. The material realm, which includes the real world, is held to be imperfect, transitory, a shadow of the world of ideas, spirit, and "forms." This world of forms is seen as the real world—permanent and perfect.

Ironically, Platonic dualism also played an important role in influencing the development of modern materialistic naturalism. Once mind and matter were viewed as separate and distinct entities, it became possible to pose the question as to which was more real. Modern scientific naturalism essentially resolves this question by affirming the existence of the material world and denying the existence of the spiritual. Although Plato clearly saw the spiritual realm as more real and more important, his separation of material and spiritual contributed to the development of scientific naturalism.

A second response to Platonic dualism is spiritualism, the view that all that exists is spiritual in nature, and that the physical is illusory. This view is fundamentally incompatible with science, though it seems to lie at the heart of the humanistic-existential movements in modern psychology.<sup>3</sup>

The enlightenment philosophers generally rejected supernatural worldviews and affirmed naturalistic views. In this context, the notion of the "God-of-the-gaps" emerged, in which supernatural and naturalistic explanations were viewed as competing explanatory principles. Thus, as scientific knowledge grew, the realm of phenomena left to be explained by supernatural and spiritual concepts shrank: "Every advance of knowledge meant necessarily that Christianity was deprived of some of its truth and that step by step God was removed from the scheme of things."<sup>4</sup> Eventually, God was proclaimed to be dead; that is, God as an explanatory cause was no longer needed once naturalistic explanations could be given for virtually all major phenomena.<sup>5</sup>



Behavioral psychology is rooted firmly in the tradition of naturalistic explanation. Technically, this viewpoint is referred to as materialism. Materialism affirms the existence of matter but denies the reality or existence of mind and spirit. Such a view, then, inevitably denies the existence of God. It views all of reality as material, the result of mindless, meaningless, random processes: the summation of nothing + time + chance is the ultimate explanation. Human beings are viewed as either complex animals or as machines. With such a view, as we shall see, there is no room for notions such as human dignity, and moral values are ultimately meaningless.

In contrast to the materialistic emphasis common to modern science and behavioral psychology, the biblical view affirms the reality of the supernatural and of reason, as well as pronouncing the physical creation to be "very good." While the Bible affirms both physical and spiritual reality, they are not viewed in a dualistic manner. The biblical perspective affirms a fundamental unity of spirit and matter, mind and body. Before we explore this thesis, two areas of concern must be examined: (1) biblical teachings that seem to be consistent with behavioral findings; and (2) teachings that appear to pose problems in reconciling biblical and behavioral perspectives.

### **SCRIPTURES COMPATIBLE WITH A BEHAVIORAL VIEWPOINT**

John Carter and Richard Mohline suggest that there should be consistency between God's Word and God's world:

(a) All truth is God's truth, therefore, the truths of psychology (general revelation) are neither contradictory nor contrary to revealed truth (special revelation) but are integrative in a harmonious whole. (b) Theology represents the distillation of God's revelation of Himself to man in a linguistic, conceptual, and cultural media man can understand and which focuses primarily on man's nature and destiny in God's program. (c) Psychology as a science is primarily concerned with the mechanisms by which man functions and the methods to assess that functioning. Nevertheless, the content of psychology as a science (including theory) provides a statement on the nature and functioning of man.<sup>6</sup>

This section will consider a number of parallels between biblical teachings and principles that have been discovered through behavioral research.

#### THE REINFORCEMENT PRINCIPLE

The principle that a person must work to eat is woven throughout the Bible, from the story of Adam and Eve, who were cast out of the Garden of Eden and sentenced to earn their food by the sweat of their brows,<sup>7</sup> to the New Testament Epistles, which emphasize that those who refuse to work should not expect to be fed.<sup>8</sup> In this basic notion that both man and beast are to be rewarded for their efforts,<sup>9</sup> something akin to the reinforcement principle is revealed as a fundamental teaching in Scripture.

The concept of reinforcement in biblical teachings, can also be seen in the examples of encouragement and in the instruction to encourage others.<sup>10</sup> These parallel the behavioral emphasis on the importance of social reinforcement in human behavior, and as such are not only an examples of reinforcement, but also of social influence.

#### PUNISHMENT

Punishment as an important principle in human behavior is repeatedly revealed in the Bible. In casting Adam and Eve out of the Garden, God punished them; moreover, as a result of their action, they experienced natural punishment in coming to know of their nakedness and in their alienation from each other and from God. In giving the Law under Moses, explicit punishments were provided for various offenses.<sup>11</sup> Before entering the land of Caanan, the Israelites were reminded of the Law and the covenant they had made with God. They were further promised that if they kept the Law, God would bless them, while God would curse them if they transgressed against the Law and broke their covenant with him.<sup>12</sup> The biblical teaching of punishment is further elaborated in the many proverbs that teach the use of punishment, including the explicit use of a rod and beating to discipline children.<sup>13</sup>

#### SOCIAL INFLUENCE

Psychologist Albert Bandura and his colleagues have amply demonstrated the important role of social influence processes in human behavior.<sup>14</sup> Biblical parallels to Bandura's findings may be seen in the biblical instruction to make a practice of associating with fellow believers,<sup>15</sup> and in avoiding association with those who

do not share this viewpoint.<sup>16</sup> In Proverbs, there is the explicit suggestion that we will learn the way of those with whom we associate.<sup>17</sup> There is also an indication that children come to be like their parents, a possible outworking of the principles of social influence.<sup>18</sup>

#### TEACHING AND PRACTICING GODLINESS

Another biblical principle which is consistent with some of the principles of behavioral psychology is the indication that learning about God requires teaching. Children are to be brought up with discipline and instruction;<sup>19</sup> learning about God requires that one be taught.<sup>20</sup> Further, this teaching is ideally to go on in the context of normal daily experiences, not in isolation from them.<sup>21</sup>

In addition to the indications that biblical principles must be taught, there is also a suggestion that for them to become a way of life, they must be practiced.<sup>22</sup> This parallels the behavioral notion that learning involves doing.

#### EVALUATION OF BEHAVIOR

In contrast to other theoretical systems, behavioral psychologists tend to minimize the role of thinking and language, especially as a cause of behavior. One of the implications of the behavioral approach (which views both language and nonlanguage behaviors as under the control of explicit environmental events) is that language and nonlanguage behavior may be independently controlled and thus inconsistent. It is interesting that the biblical criteria for evaluating Christian maturity emphasize people's actions and overt behavior more than their words; "You will know them by their fruits" (i.e., actions).<sup>23</sup> The biblical criteria for selecting spiritual leaders also emphasize their actions. Similarly, we see clear teachings in the Bible that evidence of a relationship with God will be clearly manifested in a person's actions.<sup>24</sup>

#### SELF-CONTROL

Self-control, a common theme in the behavioral literature, is presented in the Bible as a basic principle of spiritual development. Self-control is also presented as evidence of the Holy Spirit's working.<sup>25</sup> The Scripture clearly teaches that some of the consequences of a response do not follow it immediately in time;<sup>26</sup> interestingly,

this same notion lies at the root of the concern for self-control in behavioral psychology.

#### **SUBSTITUTING POSITIVE BEHAVIOR**

The view that one of the most effective ways of eliminating a problem response is to replace it with a constructive alternative is advocated by behaviorists, and is clearly present in a number of biblical teachings which suggest the need to replace sinful behaviors with new, God-honoring ones. Biblical teachings which suggest that simply punishing or seeking to eliminate problem behaviors in some other way is not likely to be effective<sup>27</sup> correspond well with behavioral principles.

#### **PROBLEM AREAS FROM A BIBLICAL PERSPECTIVE**

Various critics have raised a number of objections about the implications of a behavioral perspective for Christian faith. These include (1) the behavioral emphasis on determinism versus, the biblical notions of freedom, responsibility, and personal choice; (2) the distinction between being and doing; (3) the nature of humanity; (4) the ethics of reinforcement; and (5) the argument that behavioral psychology offers an alternative worldview that is materialistic, atheistic, and thus essentially anti-Christian. We will examine each of these objections in turn.

#### **FREEDOM**

The issue of freedom and control has been a dominant—if controversial—theme in the behavioral literature. Although behaviorists are generally united in arguing that all behavior is the product of natural causes, some behaviorists teach self-control procedures and profess to help people become free. As we shall see, the problem stems from a subtle but pervasive equivocation in which the word “free” is used in different ways on different occasions.

Skinner has argued repeatedly that freedom is an illusion and that all behavior is determined by natural causes: “Personal exemption from a complete determinism is revoked as scientific analysis progresses, particularly in accounting for the behavior of the individual.”<sup>28</sup>

Critics of Skinner’s views of freedom have not been lacking. Psy-

chologist Carl Rogers, for example, in a published debate, criticized Skinner for his failure to leave room for responsible personal choice.<sup>29</sup> From an explicitly Christian perspective, psychologist J. H. Brink faults behavioral psychologists for their use of efficient cause or mechanistic determinism, arguing that such a view leaves no room for freedom. He suggests, "It is extremely questionable whether conscious beings who conceptualize and employ deterministic principles for the sake of valued goals can themselves be understood solely within the framework of these same deterministic principles."<sup>30</sup>

Francis A. Schaeffer, theologian and Christian apologist, objects: "By autonomous man Skinner means the notion that man is not a part of the cosmic machine, that something in man stands in contrast to the cosmic machine and allows man to make real choices. This is just the sort of man which Christians must affirm. . . ."<sup>31</sup> To Schaeffer, man may undergo conditioning, but "he is not only the product of conditioning. Man has a mind; he exists as an ego, an entity standing over against the machine-like part of his being."<sup>32</sup>

Psychologist Mary Stewart Van Leeuwen joins in criticizing Skinner and behaviorists from a Christian perspective. She points out that *Skinner holds to a materialistic determinism as an assumption*. Such an assumption is not without empirical support; indeed, Skinner at times admits that this view is a "worthwhile scientific assumption."<sup>33</sup> Van Leeuwen goes on to point out that since Skinner's determinism is not a fixed scientific conclusion, it follows that faith plays an important role in his adoption of this viewpoint.<sup>34</sup>

Thus freedom, in the sense of behavior that is not completely under the control of efficient mechanistic natural causes, is repeatedly denied by Skinner, and by many of his colleagues as well. However, freedom is affirmed in a second sense in the behavioral literature. Skinner describes freedom as the absence of control by other individuals. He argues that children become free of their mothers when they learn to tell time and acquire their own clocks to tell them when it is time to go to school.<sup>35</sup>

Skinner also uses the word freedom to imply the absence of aversive stimulation.<sup>36</sup> This type of freedom may be furthered through education (which Skinner describes as control) in two ways: (1) by reducing the aversive features of the natural environment, such as

developing more efficient heating and cooling systems; and (2) by teaching effective techniques of self-management, so that we are able to effectively deal with the remaining aversive features of the natural environment. A related aspect of freedom is the avoidance of delayed aversive effects, which follow behaviors that are initially followed by reinforcement.

When we are able to experience positive events and avoid unpleasant events, we may "feel free." But, Skinner notes, control by positive and pleasurable events is nonetheless control. He goes on to suggest that this experience of feeling free is itself a product of the person's history of conditioning.<sup>37</sup>

Skinner addresses two criticisms about his views of control and rejection of freedom. First, some critics argue that Skinner's view means that we have no control over our own destiny. "The fact is, however, that men control both their genetic and environmental histories, and in that sense they do, indeed control themselves. . . . We have reached the stage . . . in which man can determine his future with an entirely new order of effectiveness."<sup>38</sup> The second criticism is that such a view as Skinner's entails a loss of individuality. Skinner counters that, due to individual uniqueness in genetic makeup and environmental experience, individuality will continue, and could be enhanced systematically if we chose to do so.<sup>39</sup>

For Skinner, then, all human behavior is under the control of efficient causes. But we are "free" to the extent that we are able to escape the control of others and to escape from the experience of aversive stimulation. Further, we are free to shape our own destinies, through the application of behavioral techniques to the social order.

#### BEING VS DOING

Behavioral approaches tend to focus exclusively on behavior, or doing, while biblical teachings tend to emphasize qualities of being. It can be argued that a central thesis in biblical teachings and Christian theology is that Godly behavior is a response of gratitude for what God has done in providing salvation freely through Jesus Christ.<sup>40</sup> Central to the doctrine of Grace is the view that outward behavior, or works, are peripheral rather than central to a relationship with God.<sup>41</sup>

### THE NATURE OF HUMANITY

Critics such as Francis Schaeffer focus on the evolutionary pre-suppositions and the deterministic and reductionistic qualities of behavioral approaches, which imply that people may be understood as stimulus-response machines, without the need to postulate such higher process as mind and thought. Their principle objection to the behavioral viewpoint is that it leaves no room for freedom, responsible choice, the moral concept of right and wrong, and the image of God in man. Central to this objection is the view that we are beings created by God in his image, with the capability of freely choosing our actions, and with the responsibility of accounting to God for what we do.<sup>42</sup> According to philosopher Arvin Vos, "Behavioral psychology cannot disown its commitment to the thesis that the environment alone is a cause in human affairs. This thesis contradicts what is both implied in and asserted by biblical principles, namely, that man is an agent, free and responsible, also influenced by the environment."<sup>43</sup>

### BEHAVIORISM AS WORLDVIEW

Materialism, reductionism, and determinism, when advanced as a behavioral philosophy or worldview rather than simply as useful scientific assumptions—are seen by critics as antithetical to the Christian worldview.

Scientism is the view that the scientific model is the only acceptable approach to knowledge. It implies that knowledge can only come from a systematic study of the world around us by means of the methods of science, specifically observation and experimentation. Such a view is naturally objectionable to those who believe in divine revelation as a source of knowledge. Although scientism is not specifically mentioned by critics from a Christian perspective, this is surely a basic issue in the frequent negative response.<sup>44</sup>

### BEHAVIOR THEORY: A CHRISTIAN PERSPECTIVE

In Chapter 1, it was suggested that three basic assumptions were required before scientific discovery could be carried out; (1) that the world exists; (2) that it can be apprehended by the human intellect; and (3) that it operates in an orderly, predictable, or law-

ful fashion. To these we will now add one other: that the techniques of natural science (i.e., observation) are suited to discovery of the fundamental orderliness of the world. In addition to these assumptions, adherents of a biblical worldview also assume that God exists, that he is creator and sustainer of the natural order, and that the qualities of the natural order assumed above are a fundamental facet of God's creation.\*

In a discussion of the issues involved in understanding the relationship between psychology and Christianity, psychologist Robert E. Larzelere compares behaviorist assumptions with the presuppositions of Christian psychology, as delineated by Gary Collins, a psychologist who has written extensively on psychology and Christianity.<sup>46</sup> These presuppositions include expanded empiricism, modified reductionism, Christian supernaturalism, determinism and free will, and biblical absolutism. Table 2-1 summarizes the two sets of assumptions.

**Table 2-1. Basic Presuppositions of Behaviorism and Christian Psychology**

<i>Behaviorism</i>	<i>Christian Psychology</i>
empiricism	expanded empiricism
reductionism	modified reductionism
naturalism	Christian supernaturalism
determinism	determinism and free will
relativism	biblical absolutism

SOURCE: Adapted from Collins, 1977

#### **EXPANDED EMPIRICISM**

According to Collins, the first assumption of Christian psychology is expanded empiricism, which involves recognition of two basic limitations to a strict empiricism. First, empiricism assumes that accurate observation is possible; expanded empiricism recognizes the role of subjectivity in empirical observations. The scientist introduces a subjective element into the process of discovery in the form of personal commitment, and in the perspective from which

\* Some scholars who have studied the emergence of modern science are convinced that a biblical worldview was fundamental to adoption of the four basic assumptions listed above, and formed the philosophical backdrop which was crucial to the emergence of a scientific approach to understanding and controlling our world.<sup>46</sup>



the scientist approaches the collection of data, including choice of problem area, methodology, types of observations, and the interpretive process.<sup>47</sup> Second, expanded empiricism acknowledges the legitimacy of other forms of knowing, including rational deduction and divine revelation. Expanded empiricism thus recognizes the scientific process as a legitimate source of knowledge, but affirms that other ways of acquiring knowledge are equally legitimate. It stands in opposition to what we earlier called scientism.

#### MODIFIED REDUCTIONISM

Broadly stated, reductionism is an approach to science that seeks to develop explanations for phenomena at the simplest possible level. In practice, many scientists approach their disciplines with the assumption that if the phenomena of the discipline can be fully explained at a given level, then explanations at more complex levels are not required. The following list illustrates a progression from more complex to simpler levels of explanation: philosophical, psychological, biological, chemical, physical. Pressed to the limit, the implication of reductionism is that all of science becomes physics at some future time when physical explanations can be given for all of the phenomena in which we are interested. Were this to happen, of course, there would no longer be any need for psychology; for this reason, most psychologists are limited reductionists who object primarily to explanations at supernatural levels.

An alternative view to reductionism is *modified reductionism*, the view that explanations at different levels are complementary. It has been suggested by engineer/physicist Richard H. Bube<sup>48</sup> and neuropsychologist Donald M. MacKay<sup>49</sup> that explanations at any given level may be exhaustive without detracting from or invalidating explanations at other levels. For example, in explaining the events involved when a child reaches for a banana, eats it, and digests it, we may focus on the behavioral level and talk about how banana in the mouth reinforces reaching and grasping. Alternatively, we may discuss the biological processes of hunger, salivation, chewing, swallowing, and digesting. We may also discuss the physical properties of the banana, in terms of the parts of the light spectrum that it reflects, its weight and mass, its molecular and atomic composition, and so on. The point that Bube and MacKay emphasize is that we may take any or all of these perspectives; no

single perspective encompasses all aspects of the phenomenon. Bube goes on to suggest that in terms of ultimate importance, the most abstract or general level is actually the most significant.

#### CHRISTIAN SUPERNATURALISM

*Christian supernaturalism* acknowledges the possibility of something outside of the natural order. For the Christian, this "something" is God, who is believed to be the creator and sustainer of the universe.<sup>50</sup> We turn now to a discussion of some of the implications of this thesis for a Christian perspective on behavioral psychology.

#### ***Both/And: God Works Through Means***

It has been noted that many of the leaders of the scientific revolution were Christian, and that their religious convictions probably played an important role in shaping the attitudes and assumptions necessary for scientific research. In our time, however, Christianity is often assumed to be vaguely or even specifically antiscientific, possibly because of the frequent objections to evolution and scientific naturalism.

One of the major factors behind this dramatic reversal is the God-of-the-gaps notion, which holds that any phenomenon in human experience may be explained by either natural or supernatural accounts, but not by both. This view probably developed from the thesis, advanced by proponents of the Christian perspective, that events that could not be explained in naturalistic terms must be explained supernaturally. Conversely, opponents of the Christian perspective contended that for events that could be explained naturally, supernatural explanation was superfluous. Naturalistic and supernaturalistic explanations were thus perceived as competing theories.

As scientific explanations were developed for an increasing range of phenomena, supernatural explanations decreased. Thus as the influence of science grew, the role of God in explaining natural events diminished, until God was ultimately pronounced "dead."<sup>51</sup> Faith in the naturalistic explanation was such that, for many, it was no longer necessary to appeal to God; some, like philosopher Anthony Flew, seemed willing to rule out the idea of God altogether.<sup>52</sup>

However, this either/or mind set is a mistake: *it is possible to*

have both naturalistic and supernaturalistic explanations for the same events, and neither diminishes the other.<sup>53</sup> The results of a recent study by psychologist Robert J. Ritzema will be helpful in explaining this thesis.

Ritzema investigated the kinds of explanations students offered for events that had no readily apparent cause.<sup>54</sup> In analyzing the results of his study, Ritzema notes that explanations may be classed into two intersecting sets of categories: (1) explanations in terms of the presence or absence of natural causes; and (2) explanations in terms of the presence or absence of divine causes. These categories are summarized in Figure 2-1.

**Figure 2-1. Explanations of Causation**

DIVINE CAUSE	No	1 Chaos (Absence of Cause)	2 Naturalistic Explanation (Nature Alone)
	Yes	3 Supernatural Explanation (Miracle)	4 Providential Explanation (God + Nature)
		No	Yes
		NATURAL CAUSE	

SOURCE: Adapted from Ritzema, 1979; 1980

The first quadrant of Figure 2-1, "chaos," represents situations in which neither natural causes nor divine causes are present. Unless some third source of causation is predicated, choice of this viewpoint implies that events are unpredictable and chaotic. Science would not be possible under such circumstances. The second quadrant, "naturalistic explanation," represents the attribution of causation solely to natural events and processes. The third quadrant, "supernatural explanation," represents attribution of causation solely to divine causes, or miracle. The fourth quadrant, "providential explanation," represents situations in which causa-

tion is attributed simultaneously to natural causes and divine causes. For both supernatural events and chaotic events, no prediction is possible. Thus scientific explanation is necessarily limited to natural explanation and providential explanation.

**Providence** The theological word "providence" is used here to refer to explanation of events that are the result of both divine and natural causes. According to the *New Bible Dictionary*,

Providence is normally defined in Christian theology as the unceasing activity of the Creator whereby, in overflowing bounty and goodwill, He upholds His creatures in ordered existence, guides and governs all events, circumstances, and free acts of angels and men, and directs everything to its appointed goal, for His own glory. This view of God's relation to the world must be distinguished from: (a) pantheism, which absorbs the world into God; (b) deism, which cuts it off from Him; (c) dualism, which divides control of it between God and another power; (d) indeterminism, which holds that it is under no control at all; (e) determinism, which posits a control of a kind that destroys man's moral responsibility; (f) the doctrine of chance, which denies the controlling power to be rational; and (g) the doctrine of fate, which denies it to be benevolent.<sup>55</sup>

The concept of providence implies that pure chance is ruled out as an explanation, because all natural events are controlled through God's providential action. Even the outcome of casting lots is under the disposition of God.<sup>56</sup> Such a view also implies that God normally acts through means of the natural processes of the created order, but it does not limit God to this mode<sup>57</sup>; secondary causes or natural laws are simply the operating principles of the world that God created.

[He] endowed matter with these forces and ordained that they should be uniform. . . . He is independent of them. He can change, annihilate, or suspend them at pleasure. He can operate with or without them. The "Reign of Law" must not be made to extend over Him who made the law.<sup>58</sup>

**Miracle** The question of miracle is largely outside the scope of our present discussion; however, several comments should be made regarding its nature. First, since miracles (at least by some definitions) involve events that occur apart from natural process (e.g., creation *ex nihilo*), they are events that cannot be investigated by scientific methods.

Second, the whole question of the defining properties of a miracle is subject to debate. Some would consider events in which God acted through the natural order (providential events), but which are of great significance in terms of nature and timing, to be miraculous. For example, the use of a strong wind to roll back the Red Sea so the Israelites could cross over on dry ground, then allowing the water to roll back and drown the Egyptians, is considered by many to be miraculous, even though natural processes were involved.<sup>59</sup>

Third, the definition of miracles as events that occur apart from natural processes is itself significant. At one time, it was common to define miracles as a violation of natural law by God. Since natural laws have come to be understood as descriptive, probabilistic statements rather than prescriptive laws, there has been a shift toward defining miracles in terms of events that are "inexplicable" in terms of natural laws.<sup>60</sup> It is important to realize that supernatural events need not be viewed as violations of natural law any more than converting the gasoline engine to accept natural gas as fuel is a violation of the laws of automobile operation.

Finally, *the concept of miracle is essential to the Christian worldview; our conceptual schema provides a means by which miracles may be readily conceptualized, either in terms of supernatural explanation (e.g., creation ex nihilo) or providential explanation (e.g., using the wind to blow back the Red Sea).*

**God and Nature** The viewpoint of radical behaviorists, such as Skinner and his colleagues, is that all phenomena involving behavior have exclusively natural explanations, or what we have here called "naturalistic" explanations. By contrast, the biblical view is that all events have a divine explanation, and must be either supernatural or providential in character. Thus science, since it is inherently limited to the study of recurring phenomena, is in the realm of providential explanation.

The Christian perspective on behaviorism, then, must reject both exclusive naturalism and exclusive supernaturalism as equally unbiblical, and equally incorrect as explanations of events. *If it is acknowledged that God generally works through means involving the natural order, then most events can be classed as providential.* This implies (1) that God is ultimately responsible, but that he works through natural processes in causing events to happen; and

(2) because natural processes are involved, such events may be the subject matter of scientific investigation. Discovering natural causes for events does not rule out God's active involvement in their occurrence; rather, these natural processes are viewed as processes both ordained and sustained by God.

#### FREEDOM AND DETERMINISM

##### *Science as Probabilistic*

At the philosophical level, science is founded on a logical fallacy, namely, affirming the consequent. Thus, *from a logical standpoint, we can never prove that a scientific hypothesis about causal relationships is correct*; we can only gather evidence that is consistent with the hypothesis. The more data that is gathered to support the hypothesis, the more consistent the data, and the more "relevant" the data, the more probable the hypothesis becomes. But it can never be proved in a logical sense.<sup>61</sup>

The example in Table 2-2 illustrates the problem. If we begin with hypothesis that all of the eleven men in the room are wearing green socks, we can test it by checking the socks of one man; John. Since he is wearing green socks, we become more confident that our hypothesis is correct. If a second man is found to be wearing green socks, our confidence in our hypothesis increases. As we continue to check the men in the room, each time we find green socks we become more confident. Then we discover that the ninth man is wearing red socks. With this single negative instance our whole hypothesis is found to be incorrect. All is not lost, however. We may formulate a new hypothesis that reflects our new information: all men in this room are wearing green or red socks. We may then proceed to test this alternate hypothesis.

When developing scientific laws, however, it is not possible to check each occurrence of a given event to see if the predicted relationship holds in every instance. In examining the relationship between a pigeon's keypecking behavior and a contingent electric shock, for example, it is always possible to try one more time; it is in principle impossible to examine every peck. Thus we can never be certain that the proposed causal relationship between keypecking and contingent electric shock is necessarily (or logically) "true." The more times we have demonstrated that contingent

shock reduces keypecking, the more confident we become, the more probable it is, that the same relationship will be demonstrated when next we try. It is important to remember that *all scientific laws are probabilistic in this sense*.<sup>62</sup>

**Table 2-2. Logical Fallacy: Affirming the Consequent**

Hypothesis	1. All men in this room are wearing green socks.
Observations	2. John is in this room. 3. John is a man. 4. John is wearing green socks (I checked).
Conclusion	5. All men in this room are wearing green socks.

In actual practice, however, a scientific hypothesis is rarely discarded simply on the basis of one anomalous finding. The unexpected finding is first scrutinized to determine whether there is any plausible way of accounting for it without rejecting the initial hypothesis. Additional data, which might shed more light on the unexpected outcome, may then be sought. If further observations provide new instances of the same outcome, the hypothesis may be altered in some way to take it into account, much as we altered our hypothesis to include green and red socks. In general, the hypothesis is only discarded when: (1) a large body of anomalous data has accumulated and no modification of the theory seems readily able to explain the findings; or (2) an alternative theory exists, which is able to account for the data in a relatively simple and "elegant" fashion.<sup>63</sup>

### ***Determinism and Causality***

Determinism is the philosophy that all events, including acts of the will, are solely the product of preceding physical events. Determinism is associated with naturalistic explanation as a sole source of causation. Such a view implicitly denies divine causation in either supernatural or providential forms. As an alternative to determinism, then, Collins proposes "determinism and free will."

Skinner uses the word "functional" to describe the relationships between stimulus and response events, in part to avoid some of the issues involved in the concept of determinism. As we have noted,

however, Skinner's critics charge him with being deterministic in his perspective. While it is difficult to find where Skinner has stated a deterministic position in so many words, the following quotes certainly suggest a deterministic viewpoint, as does the overall content of Skinner's writings:

Until recently it was customary to deny the possibility of a rigorous science of human behavior by arguing either that a lawful science was impossible because man was a free agent, or that merely statistical predictions would always leave room for personal freedom. But those who used to take this line have become most vociferous in expressing their alarm at the way these obstacles are being surmounted.<sup>64</sup>

Similarly, "Man, we once believed, was free . . . but science insists that action is initiated by forces impinging upon the individual, and that caprice is only another name for behavior for which we have not yet found a cause."<sup>65</sup> In *Beyond Freedom and Dignity*, Skinner says:

Autonomous man is a device used to explain what we cannot explain in any other way. . . . To man *qua* man we readily say good riddance. Only by dispossessing him can we turn to the real causes of human behavior. . . . [Man] is indeed controlled by his environment. . . .<sup>66</sup>

Although in another context Skinner acknowledges that "Human behavior is controlled, not by physical manipulation but by changing the environmental conditions of which it is a function. *The Control is probabilistic* [emphasis added],"<sup>67</sup> it seems that his view is deterministic. Stated more generally, Skinner seems to believe that all events can be accounted for in terms of a deterministic and naturalistic explanation; it is precisely this that his critics find most objectionable. As Harvey Wheeler notes, "Most of Skinner's critics are really critics of the philosophy of behaviorism rather than of operant conditioning."<sup>68</sup> From a Christian perspective, certainly, this is the fundamental issue.

### ***Causality as a General Principle***

Causality is an assumption that is made before beginning the scientific endeavor.\* A causal relationship cannot be established

\* I prefer to use the word "causality" rather than determinism, since causality does not have the same implications of exclusive naturalism and the suggestion of necessitarianism.



between two events through scientific means, except in a probabilistic sense. Further, even the establishment of a causal relationship (whether in the probabilistic or necessary sense) between any number of individual events does not establish causality as a general principle. Even if it could be established that A causes B, and that F causes G as a logically necessary relationship, it would not follow that all events must have causes. In order to scientifically establish causality as a necessary condition, it would be necessary to examine every event and to show that each and every event was the result of a cause. Of course, this is in principle an impossible task.

Just as predictability is a necessary assumption for science *causality is also an assumption*, but with broader implications. *Causality cannot be established as a general principle* even if any number of specific instances of causal relationships could be established. This has tremendous practical significance. First, it is in principle impossible for freedom to be ruled out on the basis of scientific evidence. Second, the unexpected and even the miraculous likewise cannot be ruled out.

### ***Freedom, Responsibility, and Choice***

The issues of freedom, responsibility, and choice are central to the criticism of behavioral psychology from a Christian perspective. In their discussion of determinism, psychologists John D. Carter and Bruce Narramore discuss three types of determinism based on the distinction drawn by psychologist Paul Meehl: methodological determinism, empirical determinism, and metaphysical determinism.

It seems that no Christian need quarrel with "methodological determinism." . . . Christianity's problems with determinism begin with empirical determinism and become especially strong with metaphysical determinism . . . if a human being does have any measure of personal freedom . . . an alternative to metaphysical determinism will be essential if we are to come to a right understanding of the nature of reality.<sup>69</sup>

***Freedom*** In everyday usage, freedom is sometimes defined as the opposite of control. More common is the usage of freedom as the ability to do as one pleases. Technically, freedom is defined as: "(1) exemption from necessity, in choice and action; as, the *freedom* of the will; (2) philosophically, the status of the will as an un-

caused cause of human actions; also, sometimes, as with Hegelians, self-determination; spiritual self-fulfillment.”<sup>70</sup> In this second sense, freedom is, by definition, the opposite of determinism.

A third definition of freedom—freedom as choice—is more consistent with the use of freedom in the behavioral literature. This describes a situation in which two or more response alternatives are available, whether or not we are able to reliably predict which one will occur.

A fourth definition of freedom involves the conscious self-awareness that one has made up one’s own mind and entered into a course of action without coercion. Freedom in this sense neither affirms nor negates the possibility that other processes or events influence or cause the choice; this type of freedom, so far as we know, is limited to human actions.

When pressed to its limits, the philosophical definition of freedom that views will as an uncaused cause of human behavior suggests that a science of human behavior is not possible. Advocates of the free will position are generally willing to accept a methodological determinism that implies that human behavior may be studied as if it were determined; it also implies, however, that at least some human behavior is in principle unpredictable. Such a view is objectionable to most behavioral psychologists.

The issue of freedom is central to a Christian perspective on behavioral psychology. Many Christian critics argue that any view that advocates a deterministic position is antithetical to biblical teaching. Thus Carter and Narramore accept methodological determinism, but not empirical or metaphysical determinism. Such a view point is not universal, however. MacKay, for example, argues for a “logical indeterminacy,” in which he contends that even if human behavior were completely predictable from the perspective of an observer, we would not be obligated to act in the predicted fashion, and thus we are morally free.<sup>71</sup> The question we must confront, then, is whether determinism is contrary to biblical teachings.

***Freedom and the Bible*** In the English Bible, the word “freedom” is one of the translations of the Greek *eleutheria* and its cognates. In classical Greek, the word “freedom” was primarily used in a political sense. Under stoicism, the idea of freedom was transformed to mean a withdrawal from the apparent reality of

this world, and thus implied a freedom from ties to the material world, including feelings, emotions and the fear of death, and harmony with the cosmos or the gods. In the mystery religions, freedom involved initiation into the secret knowledge and rites of the order and freedom from the hopeless world through unity with the deity.

Biblical usage of the Greek roots for freedom transforms their meaning. In the Old Testament, freedom is used in the context of slavery and prisoners of war, and once with regard to exemption from obligations. Political use of the word freedom is foreign to the Old Testament, as translated into Greek in the Septuagint version; rather, freedom is identical with redemption and is connected with the acts of God. In later Judaism, especially the Maccabean period, freedom came to be understood primarily in the political sense.<sup>72</sup>

Freedom in the New Testament refers to a vital relationship to God in Christ. Political freedom, and freedom as a sense of power to do as one wishes, are not used in the New Testament. The New Testament idea of freedom is thus linked to the Old Testament idea, which sees freedom as connected to God as giver; this freedom is a freedom from the bondage of sin and its inescapable compulsion. "Liberation from the compulsion to sin . . . opens up the hitherto impossible possibility of serving God."<sup>73</sup>

Thus the Bible uses freedom in a theological sense that is inextricably bound up with a person's relationship with God. This is an entirely different concept from the philosophical concept of freedom; freedom in the sense of human will as an uncaused cause of human actions is not a biblical concept. "[The notion of freedom] implying that men's future actions are indeterminate and therefore in principle unpredictable, the Bible seems neither to assert nor to deny . . . but it does seem to imply that no future event is indeterminate relative to God, for He foreknows and in some sense foreordains all things."<sup>74</sup>

Scripture presents an interesting use of the terms freedom and slavery. Essentially, we are presented with two options: slavery to sin, or slavery to God through Christ. In this context, freedom is slavery to righteousness. Put differently, freedom involves being under the causal influence of the right controlling variables. In this context, "The historic debate as to whether fallen men have 'free

will' has only an indirect connection with the biblical concept of freedom."<sup>75</sup>

To elaborate, the biblical use of freedom is identical with redemption and connected with the acts of God. In the New Testament, freedom is neither political freedom nor unfettered ability to direct one's own life; throughout the Bible, freedom is connected with God as giver. Biblical freedom is freedom from the bondage to sin and its inescapable compulsion; it is also freedom from the "wages of sin." Paradoxically, to be free is to be a slave to Christ.<sup>76</sup>

**Freedom and Providence** The notion of providence implies that God is active in all natural events, directing them in a way that will accomplish his purposes. The expression "both/and" implies that providence includes the simultaneous action of God and the unfolding of natural events. In medicine, this is metaphorically represented by the picture of God guiding the hands of the physician. Such a view can be contrasted with the dualistic metaphor of the physician praying to God, and God acting only when the patient is finally beyond all human skill.

As applied to human behavior, the concept of providence implies that God so directs events that we freely choose; yet those choices, which God in his foreknowledge is able to anticipate, are nonetheless the individual person's doing and responsibility. God will call us to account for our actions. "God's control is absolute in the sense that men do only that which He has ordained that they should do; yet they are truly free agents, in the sense that their decisions are their own, and they are morally responsible for them."<sup>77</sup>

In relationship to God, one may take either of two courses of action: (1) sin and death; or (2) salvation and life. While God does not coerce anyone, he does provide—*providentially*—the events that bear on peoples lives. These events predispose some to one course of action, some to another, both *freely chosen*. God then provides the consequences that he chooses for each course of action: condemnation and the second death; blessing and eternal life. Implied in the biblical principle that the sins of the fathers are visited even on the children of the third and fourth generations is the idea that the very circumstances of our birth and family—events that are not of our choosing but of God's—predispose us to certain courses and outcomes in terms of our relationship with God.

Because scientific laws are descriptive and probabilistic, they cannot rule out freedom. Indeed, they do not really bear on the question of freedom-determinism as it has been posed in philosophy. Thus the whole question of freedom and determinism becomes moot from a scientific perspective.

If freedom is defined as above, it seems to follow that if we make "free and responsible" choices, our behavior is—at some level—unpredictable. Yet this is inconsistent with a biblical perspective; we have argued that from God's perspective, at least, it is possible to "foreknow" and hence to predict all behavior. What then do we mean by freedom, responsibility, and choice?

***The Paradox of Freedom*** Behavioral psychologists suggest that freedom involves possessing a varied repertory of behavior. Freedom is having the social skills to ask a girl for a date; freedom is being controlled by the discriminative stimuli of heat, redness, and flame and thus avoiding being burned; and freedom is being controlled by written words so that you can read the menu at a restaurant and thus get your favorite food. Freedom is also conceptualized as receiving adequate environmental support for preferred behaviors; in this last sense, freedom is more a characteristic of the environment than of the internal characteristics or experiences of the organism.

Freedom, then, is the ability to choose; it is the ability to choose which acts we will perform, and the ability to choose which consequences we wish to approach or avoid. However, we can only choose to perform acts that we have learned, and what we have learned is determined by our biogenetic characteristics and our experiences; similarly, we can only choose to avoid or approach consequences with which we are familiar. Thus both our choices of consequences and of actions are controlled by our prior experience.

Operant behavior is controlled in such a fashion that it produces cumulative effects over time. Initially, operant behaviors are relatively random and uncontrolled. As they meet with consequences, they come under control of consequent (and eventually antecedent) stimulus events. Subsequently, these behaviors become more and more controlled. Conversely, other behaviors become controlled by negation: as behavior Y becomes stronger, behavior Y<sup>1</sup> becomes less and less likely if it is not compatible with Y. For example, an infant is free to stick his hand into the fire without hesitation. An

adult has learned through experience to avoid contact with flame, and has repeated this action many times; the adult is no longer free to stick a hand into the fire, but is free to avoid the burn that would result.

One cautionary note is needed. Some behaviorists have suggested that having the ability to exert counter control can prevent being controlled by others, and hence is freedom. This is quite misleading. If someone approaches me and attempts to get me to do X, doing Y instead does not demonstrate lack of control. Quite the contrary; my response is clearly a function of their action, and hence controlled by them. Only if their behavior has no effect on me can it be said that I am not controlled by them. Technically, we would describe their behavior as having neutral stimulus value in such a circumstance.

The implication of the behavioral view of freedom is that one is most free when one's behavioral repertory is most varied and when it is most effectively under the influence of the environmental antecedents and consequences that bear on it. One is most free when one most effectively avoids unpleasant consequences and most effectively obtains positive consequences. If we take this view seriously, then freedom is not the absence of control; rather, *freedom is the presence of effective control over behavior*.

Psychologist Arthur W. Staats illustrates this point nicely. He argues that our language influences our other actions, and that the greater the consistency between language and the real world, the better the individual is able to predict and control events in the world. In short, a person whose language and nonlanguage behaviors reflect misperceptions about the world is not able to reason or respond most effectively.<sup>78</sup>

According to the Bible, Jesus claimed, "I am . . . the truth";<sup>79</sup> in another context, he said, "You shall know the truth and the truth shall make you free."<sup>80</sup> Staats's argument seems closely to parallel these words.

There are surprising similarities between the biblical and behavioral views of freedom and determinism. A study of Scripture suggests that it views human action as influenced by the experiences we undergo. Biblical examples of causal influence include (1) the teaching that response to God first requires hearing his Word proclaimed;<sup>81</sup> (2) the proverbs that suggest that association with evil

and angry men will result in our becoming like them, and that association with wise and godly persons will result in developing these qualities;<sup>82</sup> (3) the instruction to the Jewish people that they are to make meditation and discussion of God's law an intimate part of their daily lives so that they and their children will remember and obey God;<sup>83</sup> (4) the suggestion that God "visits the sins of the fathers on the children" even to the third and fourth generation (as we come to understand this in light of other Scriptures, God seems to be saying that fathers profoundly influence the kinds of people which their children become);<sup>84</sup> and (5) the history and prophecy of the Old Testament, which pictures God repeatedly sending judgment in the form of famine, drought, sickness, and defeat at the hands of their enemies when his people disobeyed; he also sent the prophets, with their warnings of judgment and doom, and rewarded with health, peace, and prosperity the intermittent response to these ministrations of God as his people return, to some degree, to obedient service to him.

It is also suggested that human will and choice is influenced by events in God's dealings with specific individuals. David's repentance and return to God resulted from a confrontation by the prophet Nathan.<sup>85</sup> Jonah decided to obey God after experiencing the storm, being cast into the sea, and being swallowed up by the great fish.<sup>86</sup> Pharaoh hardened his heart as God repeatedly confronted him with the opportunity to let Israel go; he finally let them go as a result of the plagues which God sent, then changed his mind once more.<sup>87</sup> God's use of means is also apparent in the story of Saul (later Paul), leading up to his conversion on the Road to Damascus.<sup>88</sup>

The thrust of these Scriptures is to suggest that our response to God is influenced by our experiences—that is, by causes. As we saw earlier, Scripture is not consistent with the philosophical view of freedom as uncaused actions, though it is consistent with the view that human choice is not controlled by physical or divinely imposed *necessity*.

It should be remembered that *freedom*, in the sense in which we have used it here, is *not the opposite of determinism*. The behavioral view of freedom includes the experience of choice and the effective avoidance of punishing events and experience of reinforcing events. In the biblical sense, freedom involves one significant addi-

tional element: freedom involves becoming a slave to righteousness. This implies that we are under control of God's commandments as antecedents, and experience God's blessings and the absence of God's judgment and punishment as consequences for our responses.

There is one other aspect of freedom to consider: the sovereignty of God. *Free will in the sense of unhampered or uncaused choice is a characteristic of God.* The freedom that we experience as humans is a limited freedom. It involves choosing in response to influencing events in our lives; such choices are in turn influenced by our past experiences of specific reinforcing and punishing events. By the sovereignty and providence of God, we mean that God is always free to act, unhampered by these causal influences. Indeed, the only factor that limits God's freedom of action is his own character. The notion of God's sovereignty implies not only that God is free to act, but that God is ultimately in control of the very events that influence our actions; he shapes them and directs them to accomplish his own purposes.

Thus there are laws of behavior just as there are physical laws. In each case, these laws are descriptions of orderly relations between events; in that sense, they are causal. However, we can respond as if those laws were not true, either out of ignorance or irresponsibility; in this sense we are free. Having acted in such an ignorant or irresponsible manner, however, we are not free of the lawful consequences that follow such action, and such effects are cumulative. If we walk out of a second story window without taking suitable precautions, we will lawfully meet the consequences attendant on a long fall and sudden stop. Of course, our "decision" to act is controlled by our prior experience (e.g., taking drugs that might warp our perceptions). Responsibility, from a biblical perspective, involves this aspect of facing the consequences of our actions, and applies both to the immediate physical consequences and to the consequences in our relationship to God.

#### **CAUSALITY AND CHOICE: THE CONVERGENCE OF BIBLICAL AND BEHAVIORAL VIEWS**

So far, two areas have been examined: the logical implications of the scientific concept of causality, and the behavioral and biblical



notions of freedom. One additional line of reasoning must be presented: the existential reality that people do make choices, and that they perceive themselves as active agents in the decision-making process. The question that must now be addressed is whether these two aspects of our experience, influence by external events and active decision-making, are incompatible or complementary explanations.\* This text proposes the thesis that *while human behavior is caused by external events, people actively make choices in their interactions with the environment*. Although this statement may seem logically difficult, it is fundamentally a question of perspective.

The data points overwhelmingly toward the conclusion that there is a reliable relationship between external events and behavior. Thus we can scientifically assert that events cause behavior. However, this does *not* say anything about the fundamental underlying relationships between those events at a metaphysical level.

This confusion arises for two reasons. First, in our everyday speech we use the word "cause" in a subtly but significantly different sense, which implies a physical or mechanical relationship between events rather than just an observed relationship. Our assumptions about the ultimate nature of the world enter into our understanding of the significance of the observed relationships in a fundamental and pervasive, albeit largely unconscious, way. For example, when we say "lightning causes thunder," we are not saying that we have observed that we can reliably predict the occurrence of thunder when we see lightning. Rather, we are saying (1) that, we have noticed frequently that thunder follows lightning; and (2) that there is some fundamental connection between these events that goes far beyond the simple observed coincidence of lightning and thunder, and implies a metaphysical assumption regarding the nature of the universe.

Thus it is clear that *there is a subtle and pervasive equivocation involved in the tendency to move beyond the scientifically observed*

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\* Christians are not agreed among themselves on the issue of freedom. Christian perspectives on this issue may be viewed as falling along a continuum from the Calvinistic, which views people as incapable of action in relationship to God and views God as the initiator of faith, to the Armenian, which views faith as a human response that we freely choose to make or refuse. In such a context, any position on the problems we have been considering is likely to incur some disapproval.

*relationship to a metaphysical explanation of the observations.* This feature is common to behavioral and everyday explanations; it is one of the reasons we have difficulty with scientific explanations and tend to see the concepts of causality and freedom as contradictory notions.

The second reason why scientific discussions of causality tend to pose problems is that scientists, like many people, are in practice lay philosophers. Many scientists hold very specific and explicit worldviews or metaphysics, which they cherish dearly. Others are less conscious of their worldviews, but are no less influenced by them. It is natural for us to explain scientifically observed relationships in terms of our worldviews. When worldviews are strongly held, this tendency becomes very pronounced. This is probably the reason that Skinner and other radical behaviorists take such strong positions with regard to mechanical explanations and deny so vehemently the reality of the "inner life."

The biblical and behavioral views of freedom show some striking parallels. The behavioral view of freedom leads to a paradox: One is most free when one's behavior is most controlled by environmental stimuli, such that one is able to maximize contact with positive reinforcement and minimize contact with aversive stimuli. The biblical view of freedom also leads to a paradox: the path to freedom is through becoming slaves to righteousness. In the biblical context, there are two additional nuances to the notion of freedom: (1) freedom involves a sense of choice; and (2) freedom is being guided by God's commandments, and as a consequence receiving God's blessings and escaping God's judgments. If we accept the view that God made our world and established the principles of its operation, and if we agree that the Bible is God's handbook and is designed to assist us in maximizing our access to reinforcement and minimizing our exposure to punishment (both in this world and in the New World that is to come), then *the behavioral view of freedom and the biblical view of freedom turn out to be remarkably similar.*

This leads to the conclusion that freedom and determinism are *perspectives*. Although it is sometimes impossible to specify clearly what the necessary and sufficient antecedent events are, this does not invalidate the claim that the particular choice was caused by events that preceded it. Nor does it imply that a different choice

would be made if we could reconstruct precisely the same conditions again. From the perspective of an agent, since one does not know in advance how one will act, one is free to choose. From the perspective of the observer, when one is able to predict the behavior of the agent (this is *always* true of God), the behavior is caused. These two perspectives need not be viewed as antithetical any more than the wave and corpuscular theories of light are viewed as antithetical when united in quantum physics. Rather, each perspective helps to shed some light on aspects of behavior, and both must be taken into account if we are to have an adequate understanding of human behavior.

The perspectival view advanced here is not new. Such a view seems to underlie the writing of psychologist Ronald Koteskey, who argues that we have both animal-like qualities and God-like qualities, and that a complete human psychology requires understanding both aspects.<sup>89</sup> Similarly, MacKay's main thesis seems to be that accounts of behavior must be given on several different levels, that each level of analysis is significant in its own right, and that the principles need not be the same from one level to another.<sup>90</sup> Bube holds essentially the same view.<sup>91</sup>

The view advanced here also captures some of the nuances and tension present in the biblical accounts, which teach that we are influenced by processes and events, and that we are to be held accountable before God. That different theologians have arrived at very different conclusions on this matter suggests some of the difficulty involved in seeking to apprehend the truth embodied in the biblical texts. The balance of this book, however, will assume the viewpoint described above, a position that closely approximates that of the Westminster confession of faith:

- I. God, the great Creator of all things, doth uphold, direct, dispose, and govern all creatures, actions, and things, from the greatest even to the least, by his most wise and holy providence, according to his infallible foreknowledge, and the free and immutable counsel of his own will, to the praise of the glory of his wisdom, power, justice, goodness, and mercy.
- II. Although, in relation to the foreknowledge and decree of God, the first cause, all things come to pass immutably and infallibly; yet, by the same providence, he ordereth them to fall out according to the nature of second causes, either necessarily, freely or contingently.

- III. God in his ordinary providence maketh use of means, yet is free to work without, above and against them, at his pleasure.
- IV. The almighty power, unsearchable wisdom, and infinite goodness of God, so far manifest themselves in his providence, that it extendeth itself even to the first fall, and all other sins of angels and men, and that not by a bare permission, but such as hath joined with it a most wise and powerful bounding, and otherwise ordering and governing of them, in a manifold dispensation, to his own holy ends yet so as the sinfulness thereof proceedeth only from the creature, and not from God, who being most holy and righteous, neither is nor can be the author or approver of sin.<sup>92</sup>

### OTHER ISSUES

Several philosophical issues remain to be addressed: the ethics of reinforcement, the problem of discrepancies between psychology and Christian faith, the role of faith, the significance of the biblical teaching that God looks at the heart, and some final issues regarding the nature of man.

#### ETHICS OF REINFORCEMENT

One of the objections raised to behavioral approaches is that the use of reinforcement is essentially bribery. This objection is especially likely to be raised when the behavior in question involves ethical or moral values. The argument is that, since the person ought to do X, he certainly shouldn't be rewarded for doing X; such a reward would be bribery.<sup>93</sup>

Bribery involves one of two conditions: (1) payment, gift, or reward for perverting judgment or corrupt behavior; or (2) increasing payment or reward in the face of cessation of performance of some expected response. Thus reinforcing or rewarding immoral behavior is bribery, but rewarding moral behavior is not; for example, reinforcing a person for failing to stop at red lights might be considered bribery, but rewarding the person for consistently stopping would not be bribery. In the second sense, if a child normally makes his bed for a nickel, increasing payment to a dime when he ceases would be an example of bribery. This latter form of bribery actually tends to strengthen the undesired response of ceasing to perform a customary response. If we understand the concept of bribery, it should be clear that reinforcement and bribery are discrete concepts.

#### THE PROBLEM OF DISCREPANCIES

While it has been argued that the truth of revelation and the truth of science as an understanding of God's creation are in principle a unified whole, it is possible that apparent or indeed real contradictions may emerge between our understanding of Scripture and our understanding of our world. The perspectival view that was just discussed has important implications in confronting these discrepancies.

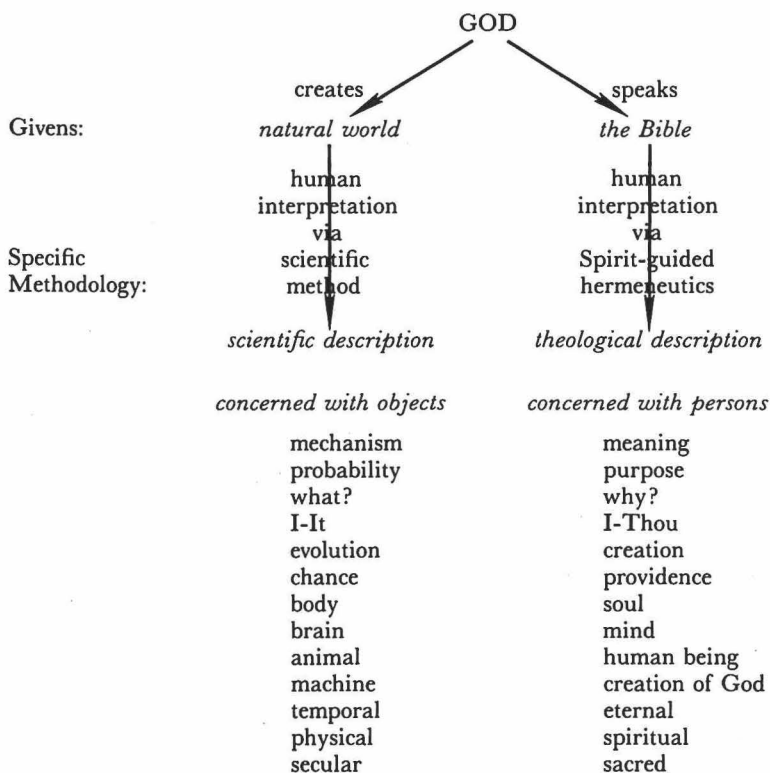
In seeking to compare and contrast science and theology, we must have a clear grasp of their nature and data bases. There are some important parallels between science and theology. Bube, who holds a both/and view much like that presented here, summarizes the relationships between science and theology in tabular form (see Table 2-3).<sup>94</sup> The real comparison is not between science and the Bible, but between nature and the Bible and between science and theology. Discrepancies between science and theology are real; but they are fundamentally a problem of limited human understanding rather than a problem of any inherent conflict at the level of the data sources involving God's manifestation of himself in the world and his Word. When conflict emerges between science and theology, we are challenged to recheck our interpretations: interpretations of the scientific data, and interpretations of the biblical data. Either could potentially be in error.

#### THE ROLE OF FAITH

A commonly held view among contemporary men and women is that faith is a peculiar and inexplicable attitude unique to religious people. Nothing could be further from the truth. One of the definitions of faith is, "Belief in something for which there is no proof."<sup>95</sup> In this sense, faith is essential to our daily lives, and is at the very root of science. Everyday faith is as mundane as setting the alarm before bed at night in the expectation that it will waken us at the appointed hour in the morning. Faith is proceeding through an intersection with the green light, confident that the car approaching on the cross street will stop.

It was noted that the process of scientific discovery requires several key assumptions. To act as if these assumptions were true involves faith. We also noted that final proof is not possible in science because of the very nature of the scientific verification pro-

Table 2-3. Relationship of Psychology to Biblical Revelation



## BUT ONLY ONE REALITY

The development and product of scientific and theological descriptions of the one given reality, emphasizing the need for "both/and" rather than only "either/or" approaches.

SOURCE: Bube, 1976.

cess; thus faith is the conviction that a relationship that was discovered last year still holds today: faith is the belief that reinforcement will strengthen a performance—that food made contingent on pecking will increase the rate of pecking in *this* hungry pigeon *today*. With this in mind, it is clear that Christianity should not be dismissed because it involves an element of faith.

#### **GOD LOOKS AT THE HEART**

A number of biblical teachings suggest that God's standard for evaluating humans involves an examination of what we are rather than of how we act. We noticed earlier that this seems to be a fundamental distinction between a biblical perspective and a behavioral approach to human behavior. In addressing the issues involved here, we must return to the concept of human nature that was then introduced in Chapter 2.

Biblical teachings present persons as psychophysical wholes. While a person may be conceptualized at an abstract level as consisting of a body, spirit, mind, and so on, these concepts tend to distort the fundamental unity of the human person that has been presented in Scripture and discovered through scientific research. Many teachings are addressed to this unity of human functioning: as a man thinks in his heart, so he is; out of the abundance of the heart the mouth speaks; faith is manifested through works; and so on. The sum of these teachings is that there is a fundamental unity between inner nature and behavior, between one's position in relationship to God and one's overt behavioral activities.<sup>96</sup>

Perhaps the key linkage between the biblical concept of the heart and overt behavior is that of motivation. The Bible presents the notion that one of the key effects of a saving relationship with God is a fundamental motivational change; although this change is internal, it will be manifested in a wide range of overt behaviors. The "new birth" can be thought of as a setting event that interacts in complex ways with a wide range of ongoing performances.

#### **THE NATURE OF HUMANITY**

In Chapter 2, it was noted that most behaviorists assume that humans developed from lower organisms through an evolutionary process, and are essentially stimulus-response machines that may be understood through naturalistic observation of overt behavioral processes without the need to postulate such higher processes as mind and thought. Actually, it is more accurate to distinguish among behavioral psychologists as radical, cognitive, ontological, or methodological.<sup>97</sup>

Radical behaviorists contend that human beings can be fully understood through study of overt behavior, and that there is no need

for psychology to talk about unobservable internal processes such as thought and feelings; Van Leeuwen has termed this view "mental processlessness."<sup>98</sup> By contrast, cognitive behaviorists see no difficulty in acknowledging the occurrence of cognitive processes; their behavioral leanings are reflected in a preference to conceptualize cognitive processes in behavioral terms; thus, in a sequence of cognitive responses, one cognitive event serves as a stimulus, the second as a response to it, the third reinforces the second, and so on. Cognitive processes, in turn, interact with external events much like any other class of responses.

Ontological behaviorists have adopted what we called earlier the philosophy of behaviorism. The worldview and scientific approach of ontological behaviorists are essentially synonymous. Methodological behaviorists, by contrast, approach the study of behavior with the same general methodology as do ontological behaviorists, but they have not adopted their scientific assumptions as a worldview. Methodological behaviorists may thus hold to a variety of worldviews, including that of Christianity.

Most radical behaviorists are also ontological behaviorists. Skinner is the most prominent example of a radical ontological behaviorist in the sense we have used it here. Skinner's view of people as stimulus-response machines seems to be not only his approach to science, but his basic philosophical credo. While cognitive behaviorists are less consistent in their adoption of ontological behaviorism, most of them are also ontological behaviorists. However, *it is possible to be a behaviorist, whether cognitive or radical, without adopting the philosophy of behaviorism.*

One additional issue that must be considered is evolution. A basic assumption in comparative psychology is that there should be similarity in the behavior of organisms as a function of their proximity on the phylogenetic scale. Thus study of rats, pigeons, or monkeys should help us to understand human behavior.

Most behavioral psychologists assume that evolution is the means by which humans developed. A biblical perspective affirms that God created people in his own image; many interpret biblical creation as contradictory to evolution. However, a biblical worldview need not be antithetical to the study of comparative psychology, regardless of the position taken on creation. If God created both humans and animals, and created them to live in a common envi-



ronment, then it seems likely that there would be similarities in the behavioral processes of organisms as a function of similarity in their biological structure and environmental conditions. Thus, *whatever one's position on the creation-evolution controversy, comparative psychology remains a meaningful and potentially fruitful enterprise.*

## NOTES

1. See Eugene M. Klaasen, *Religious Origins of Modern Science* (Grand Rapids, Mich.: Wm. B. Eerdmans, 1977); and R. Hooykaas, *Religion and the Rise of Modern Science* (Grand Rapids, Mich.: Wm. B. Eerdmans, 1972).
2. Christopher Jencks and David Reisman, *The Academic Revolution* (Garden City, N.Y.: Doubleday, 1968); see pp. 312 ff.
3. Ranald Macaulay and Jerram Barrs, *Being Human: The Nature of Human Spiritual Experiences* (Downers Grove, Ill.: InterVarsity Press, 1978), pp. 39-50 ff.
4. *Ibid.*, p. 138.
5. John A. T. Robinson, *Honest to God* (Philadelphia: The Westminster Press, 1963).
6. John D. Carter and Richard J. Mohline, "The Nature and Scope of Integration: A Proposal" *Journal of Psychology and Theology* 4 (1976): 3-14; p. 4.
7. Gen. 3:17-19.
8. 2 Thess. 3:6-12.
9. Cf. 1 Cor. 9:1-11.
10. Examples of encouragement include Phil. 1:3-7; 2 Thess. 1:2-7; 2 Tim. 1:3-5; an example of instructions to encourage others is Heb. 3:12-13.
11. Lev. 17-20.
12. Deut. 27-30.
13. E.g., Prov. 13:24; 22:15; 23:13-14; 29:15, 17.
14. Albert Bandura, *Principles of Behavior Modification* (New York: Holt, Rinehart and Winston, 1969).
15. E.g., Heb. 10:25.
16. Cf. Ps. 1.
17. Prov. 22:24-25.
18. See the discussion regarding Deut. 5:9-10 in Rodger K. Bufford, "God and Behavior Mod: Some thoughts Concerning the Relationships Between Biblical Principles and Behavior Modification, *Journal of Psychology and Theology* 5 (1975): 15.
19. Eph. 6:4.
20. Rom. 10:11-15.
21. See Deut. 6:6-9.
22. Phil. 4:9 instructs us to "practice" the things we are taught by spiritual leaders.
23. Matt. 7:20; see also James 2:14-26.
24. E.g., 1 John 2:3-6; 3:2-10.
25. See Gal. 5:22-23; see also Bufford, "God and Behavior Mod," pp. 17-18.
26. See Eccles. 8:11-13 and the related discussion in Bufford, "God and Behavior Mod," pp. 19-21.

27. Compare Eph. 4:17-33 with Matt. 12:43-45; see also Jay E. Adams, *The Christian Counselor's Manual* (Grand Rapids, Mich.: Baker Book House, 1973), pp. 176-216.
28. B. F. Skinner, *Beyond Freedom and Dignity* (New York: Alfred A. Knopf, 1971), p. 21.
29. Carl R. Rogers and B. F. Skinner, "Some Issues Concerning the Control of Human Behavior," in *Control of Human Behavior*, ed. R. Ulrich, T. Stachnik, and J. Mabry (Glenview, Ill.: Scott, Foresman and Company, 1966), pp. 301-316.
30. John H. Brink, "Free Will, Determinism, and Behavioristic Psychology," *CAPS Bulletin* 6 (1980): 11.
31. Francis A. Schaeffer, *Back to Freedom and Dignity* (Downers Grove, Ill.: InterVarsity Press, 1972), p. 34.
32. *Ibid.*, p. 36.
33. B. F. Skinner, cited in Mary Stewart Van Leeuwen, "The Behaviorist Bandwagon and the Body of Christ," *Journal of the American Scientific Affiliation* 31 (1979): 88-91; p. 88.
34. Van Leeuwen, "The Behaviorist Bandwagon."
35. B. F. Skinner, *The Technology of Teaching* (New York: Appleton-Century-Crofts, 1968), p. 173.
36. *Ibid.*, p. 172.
37. B. F. Skinner, *Cumulative Record: A Selection of Papers*, 3d ed. (New York: Appleton-Century-Crofts, 1972), p. 53.
38. *Ibid.*, p. 56.; Skinner, *Beyond Freedom and Dignity*, pp. 127 ff.
39. B. F. Skinner, *Cumulative Record*, pp. 56-57; Skinner, *The Technology of Teaching*, pp. 174 ff.
40. See 1 John 3:1-3 ff.
41. Merrill C. Tenney, ed., *The Zondervan Pictorial Encyclopedia of the Bible* vol. 2 (Grand Rapids, Mich.: Zondervan, 1975), pp. 799-804; see especially pp. 802 ff. Related Scriptures include Rom. 3:21-28, 5:20-21, 6:15 ff. and 11:6; Gal. 1:6-7, and 3:1-14 ff.; and Eph. 2:8-9.
42. Mark P. Cosgrove and James D. Mallory, Jr., *Mental Health: A Christian Approach* (Grand Rapids, Mich.: Zondervan/Probe Ministries, 1977), pp. 19-30.
43. Arvin Vos, "A Response to 'God and Behavior Mod,'" *Journal of Psychology and Theology* 6 (1978): 210-214.
44. Harvey Wheeler, "Introduction: A Nonpunitive World?" in *Beyond the Punitive Society*, ed. Harvey Wheeler (San Francisco: W. H. Freeman and Company, 1973), pp. 1-21.
45. Klassen, *Religious Origins of Modern Science*; Hooykaas, *Religion and the Rise of Modern Science*.
46. Robert E. Larzelere, "The Task Ahead: Six Levels of Integration of Christianity and Psychology," *Journal of Psychology and Theology* 8 (1980): 6; See also Gary Collins, *The Rebuilding of Psychology* (Wheaton, Ill.: Tyndale House Publishers, 1977).
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48. Richard H. Bube, *The Human Quest* (Waco, Tex.: Word Books, 1971).

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50. See Gen. 1:1 ff.; John 1:1-3; Heb. 1:3.
51. Robinson, *God is Dead*.
52. See Anthony Flew, *God and Philosophy* (New York: Dell, 1967). For a discussion of some of the issues involved in this position, see Stephen J. Wykstra, "The Problem of Miracle in the Apologetic from History," *Journal of the American Scientific Affiliation* 30 (1978): 154-163, and the related comments by Clark Pinnock on the same pages.
53. See Bube, *The Human Quest*; and MacKay, *The Clockwork Image*.
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56. Prov. 16:33.
57. This view is presented by the Westminster Confession of Faith, Chapter V, parts 2 and 3.
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59. David Basinger and Randall Basinger, "Science and the Concept of Miracle," *Journal of the American Scientific Affiliation* 30 (1978): 168.
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61. For a discussion of the logic of science, see Irving M. Copi, *Introduction to Logic* (New York: Macmillan Co., 1961), pp. 257 ff.
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63. T. S. Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1962).
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80. John 8:32.
81. Rom. 10:8-17.
82. Prov. 22:24-25.
83. Deut. 6:4-13.
84. Exod. 20:4-6.
85. 2 Sam., chapters 11-12.
86. Jon. 2:1-3:3.
87. Exod., chapters 7-14.
88. Acts, chapters 8-9.
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97. Van Leeuwen, "The Behaviorist Bandwagon."
98. *Ibid.*