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Gordon Clark on Science and Behaviorism

Introduction

There is little question that, in this present life, the Christian will commonly face opponents who are eager to threaten the truth claims of the Biblical worldview. What is more, it happens to be the very nature of the Christian religion that all who do not embrace it, that is, intellectually assent to its propositions, necessarily oppose it, even if they are not so "eager." "Whoever is not with me is against me," declared Christ, the object of our faith. Opposition though, while having in common an Antichristian worldview, comes in many different flavors, various styles, and competing epistemologies. Indeed, the world longs for a doctrine which they can hold on to, anything that will prevent them from accepting the truth of Christianity. While the Christian would be wise to refer to this as a prime example of Total Depravity, the non-Christian lusts for this false doctrine. They seek to undermine the Christian position quite often and we are disappointed to discover that many, Christians (so-called) included, fall for their efforts. And yet, as will be demonstrated in paragraphs following, the wisdom of this world is foolish. Thus, the great battle of our times is a foolishness that has persuaded the masses against the Wisdom of God revealed in His Scriptures. A fascinating battle indeed.

It is in this context that we consider Gordon H. Clark, the man John Robbins has referred to as "America's Augustine." The student will happily note that Clark was one of the most comprehensive scholars that Christianity has ever produced. From ethics and politics to soteriology and epistemology, Clark has understood that the Christian perspective is adequate to address all of reality. Further, it is the *only* philosophical system that is adequate. And thus, when prevalent subjects such as science and psychology "eagerly seek" to dismantle Christianity, Clark is ready with a reply. It is these two specific fields that we will cover at this present time. Addressing the topics of science in *The Philosophy of Science and Belief in God* and the more narrow issue of Behaviorist Psychology in *Behaviorism and*

Christianity, Clark has offered a stunning defense of the Christian worldview by ably revealing the contradictions, confusions, and intellectual dishonesties in these two fields. It is no easy task to succinctly and accurately summarize a position while at the same time pointing out its flaws, especially with the complicated topics that Clark faces here. But it can hardly be denied that in these books, Clark is at his very best.[i]

"The Philosophy of Science and Belief in God"

We must be thankful that Clark understood that to discuss science without first having a Philosophy of Science would cause the discussion to be incomplete. Indeed, without an overall view of what science is, what it should be used for, how can any meaningful discussion proceed? And yet, as Clark noted in his introduction, "Many scientists have an enormous amount of detailed technical information about electrodynamics and quantum theory, and yet lack an overall view… of science" (Clark, 18). As will be indicated below, one major difference between the Christian worldview and many who depend on "science," is that the former places science within a "general philosophy" while the latter group have made science their "general philosophy;" a move that will ultimately undermine the essence of their position.

With this in mind, as Clark explains, "the major part of the present study, as it traces the history of science from older theistic constructions to more recent anti-religious positions, will be an attempt to say what science is: an attempt, in other words, to sketch a philosophy of science" (Clark, 18). It is by this philosophy of science that we can ask: what is it good for?

The Philosophy of Science and Belief in God (originally published in 1964) is a work whose relevance has not gone away. We live in an age where the advocates of science have, among other things, vocalized their belief that science has disproved religion, rendered Christianity a worldview of the past, and, as Clark says of skeptic philosopher David Hume, "ruled out both miracles and God" (Clark, 17).

The Problem of Motion

While these are quite provoking claims, in order to at the same time question their accuracy and develop a philosophy of science, Clark begins with the ancient Greeks and their attempt to understand the concept of motion. He writes: "If there were no motion, there would be no science. Physics could exist in the absence of electricity, and zoology does not absolutely require butterflies. But neither can do without motion. Be it physics or zoology, the phenomena examined are either the causes and effects of motion, or the motions themselves" (Clark, 20).

As important as motion is for scientific inquiry, it presents some major problems that the ancient Greeks recognized, but have yet to be dealt with, even today when "science" reigns supreme. "Most people simply take motion for granted and do not think about it" (Clark, 20). Can motion even be justified? Or must we be forced, as Clark intriguingly suggests, "to conclude that motion is impossible?" (Clark, 23). When we observe the "simple phenomenon of a marble rolling across a table (Clark, 19)," can such motion be explained at all?

To answer these inquiries, Clark gives an overview of ancient Greek consideration. Zeno the Eleatic noted, with his famous story of Achilles and the tortoise, that in a race where the tortoise was given a head start, Achilles could never truly pass up the tortoise even despite his renowned speed. For every time he reached the point where the tortoise was, the tortoise, in all his slowness, would have moved at least a small bit. Again Achilles would aim for the precise spot of the tortoise, but again the tortoise will have moved. Achilles was bound for defeat. For are there not an infinite number of points between Achilles and the tortoise? Surely Achilles could not logically reach the bounds of infinity and thus pass the tortoise!

The implications are obvious. Regarding the marble that rolls across a table, is it not true that the marble, just like Achilles, must cross an infinite number of points if it is to reach its destination?

Further, must it not also cross an infinite number of points before it reaches the midpoint to its "destination?" And are there not an infinite number of "midpoints?" Can the marble then even move at all? If we cannot decide on a solution to Zeno's problem, Clark wonders (with humor) if "we may be forced to conclude that motion is impossible. And where would science be then, poor thing?" (Clark, 23).

But Zeno was not alone in his deliberation of motion. If Zeno discovered that motion might indeed be impossible, it was Heraclitus before Zeno who's "slogan… was, 'All things flow" (Clark, 23). And thus he reached a conclusion opposite to the result of Zeno's logic. All things flow, all things are constantly changing, and nothing remains at rest. His example was that "one cannot step into the same river twice" (Clark, 23). For not only is the river (and its river bank) in constant movement, but so is the individual who stepping into this river.

But if everything is in constant and universal motion, then what could possibly be meant by "river?" There must be something that does not change, for otherwise how can it be recognized as a river? How could we discuss this flowing stream of water? Indeed, by what amount of logic can we even refer to a river as a "flowing stream of water" unless there is *something* that remains unchanged? The fundamentals of communication are thus abolished by the "Heraclitean flux." Plato recognized as much and, when he questioned Heraclitus' disciple Kratylus about the fact that opinion and consistency becomes impossible if everything is ever changing, Kratylus was left to answer Plato with a "waving of the hand" (Clark, 24). And yet, how else could he have answered? Surely not with words that are meaningless due to the ever changing nature of the mind itself.

Kratylus' consistency had rendered intelligence and meaning impossible. "All things flow," noted Heraclitus. But this phrase too becomes meaningless under such a worldview. And so, in self-defeat and contradiction, the Heraclitean flux becomes utterly nothing. And "nothing" is non-existent. Truly, to quote Gordon Clark again, "if everything is changing, nothing exists" (Clark, 25). Thus,

"changing is unreal and reality is unchanging" (Clark, 25).

"Reality is unchanging." Have we then retreated back to Zeno? Where is science now? "Poor thing."

So then, if we can neither say that nothing moves or that everything always moves, who can help to lead us out of our predicament? For science is impossible without motion.

Clark takes us next to Aristotle, perhaps the most famous philosopher of Greek antiquity. "Aristotle agrees that if everything were always changing, nothing would exist and knowledge would be impossible. Therefore, he concludes, something must exist that does not change" (Clark, 25). It is vital for our discussion that we note, as does Clark, that Aristotle is not attempting to dismiss Heraclitus simply because he has a desire to claim that knowledge is possible. Rather, Aristotle recognizes, and Clark emphasizes, that unless Heraclitus is wrong, that is, unless "something exists unchanged," science itself cannot be studied. To reiterate, motion depends on *something* existing unchanged, science depends on motion, and therefore science depends on *something* existing unchanged. Clark gives the example of a "green leaf turned brown:"

> "When we express an instance of motion or change, we say the green leaf turned brown…. In every case something must remain unchanged during the change. A leaf can turn brown only if it is the same leaf at both ends of the change.
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> […]
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> Suppose it were not the same leaf…. Then we would have seen a green leaf and a little later a brown leaf but there would have been no change, for nothing would have changed from green to brown" (Clark, 25).

The importance of our present discussion is this: in order for us to determine our overall philosophy of science, we must first have an idea of what science is, and we must know its limits and boundaries. Therefore, with an analysis of Aristotle and his denouncement of Zeno and Heraclitus, we

aim to discover whether science is even possible, given that it depends so heavily on the concept motion; a concept we have yet to justify intellectually.

Clark was right to note that neither the extremes of Zeno nor Heraclitus could provide us with the foundations of scientific inquiry. But did Aristotle solve the problem? Can Aristotle provide a solution to the mystery of motion which can be used as the basis for the modern scientific claims that God does not exist? Our philosophy of science depends on the answer.

Aristotle sets himself apart from Zeno, Heraclitus, and their contemporaries by beginning with a courageous effort toward a definition of motion. Clark explains that "the pre-Socratics had failed to unravel the enigma of motion chiefly because they did not know what *motion* is [*italics* are Clark's]. Their halting hints were faulty as definitions" (Clark, 28). In Aristotle's *Physics III*, he "formulates the definition of *motion* three times" (Clark, 28). Unfortunately however for both Aristotle and the dignity of science, he was ultimately unsuccessful in his attempt at a definition. The second of the three definitions defined "motion as the actuality of the movable...." But this is problematic, for "how could one know what *movable* means, that is, able to move, unless one first understood motion?" (Clark, 28). And thus the second definition is unhelpful due to its circularity.

As for the first and third definitions, *motion* was defined "in terms of *potentiality."* While this might seem fine to the reader, Clark points out that, when looking for a clarification of the word *potentiality*, we find that Aristotle has defined that word "in terms of motion" (Clark, 29). And thus, we have still not overcome Aristotle's disappointing circularity in his attempt to define motion –that concept which is so very necessary for science!

As we near the end of Clark's first chapter *Antiquity and Motion*, we note his "disturbing conclusion" in all of this: "The problem of motion remains unsolved." We have failed to justify it. Aristotle's ancient rival Democritus had suggested that, rather than try to demonstrate motion, we must simply assume it. We must see motion as our presupposition, or, to use Clark's phrase, our

"indemonstrable axiom" (Clark, 26). But not only have the Greeks failed to demonstrate motion, their inability to define it "has annihilated Democritus as well as Aristotle."

For how can one assume what has yet to be defined? Was Clark on to something in his concluding sentence, namely, that "perhaps motion, and science along with it, is just nonsense"? (Clark, 31).

A Shift in Scientific Method

Today, one rarely conflates the allegedly separate areas of philosophy and science. While the previous discussion of Greek antiquity was quite philosophical and seemingly "unscientific," it is the modern era of science which began to separate philosophy from science. That is to say, modern science has separated itself from the ancient and medieval world by shifting its method. The so-called scientific method, largely developed by the likes of Galileo, was centered on actively and intentionally experimenting. As Clark infers, we must not assume, as is commonly done, that the Aristotelian era was deductive as opposed to modern science's inductive method. Rather, both deduction and induction were used by the ancient Greek philosophers as well as the modern scientists.

Indeed, it is important to understand that the new method of science included experimentation that was deliberate and sought out. Clark provides a useful illustration that will be drawn on more fully later in this essay.

> "Galileo, for example, although his study of the pendulum may have started accidentally, did not wait to observe some chance body fall from whatever height it happened to be. […] He deliberately rolled marbles down and inclined trough which he had carefully smoothed and polished. […] The experimenter does things to the material he is examining. He cuts it, or heats it, or dissolves it in acid, or passes an electric current through it, or what not.
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> […]
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> Not only did Galileo prepare his trough and roll the marbles down, but what is more, he varied

the length of their descent. This means he measured the distances; he measured the times also. And he made these measurements for the purpose of manipulating them mathematically" (Clark, 44).

Thus the Renaissance era scientific revolution had begun and the scientific method was born. No more was Achilles' failure to pass the tortoise a problem. The alleged glories of experimentation did not wait for solutions to be offered to Zeno or Heraclitus. And perhaps Aristotle too had wasted his time on definitions. In the words of Clark, the "new generation" did not care "to prove that motion occurs nor would they waste time on futile definitions or explanations of motion in general" (Clark, 33).

It was the initiation of this method which began to undermine the Aristotelian understanding of nature. For it was through Galileo's effort by experimentation to understand the nature of the pendulum swing that he determined that "a body moving in a horizontal plane will continue in motion at the same velocity, without any further force applied to it, unless it is retarded by an external force in the opposite direction" (Clark, 35). But this conception of motion, which would later be turned into the law of inertia by Sir Isaac Newton, contradicted the very basis of Aristotle. While Aristotle saw nature as such that motion was caused by a change that took place within the body itself, Galileo and Newton realized that change was not occurring in the body, but rather, a change in motion was caused by "an external force." The quality of the body itself was not changed, but something acting on the body caused the change.

Thus it was by the new method of science that the history of science passed from medieval to modern. Our relevant question then, is whether or not the new method of science brings us any closer to a philosophy of science. The new system is the basis of the majority of claims today that "God does not exist." But are such claims even warranted given this new basis? We must therefore deal with this new system if we are to both defend the faith and declare a philosophy of science as a whole.

Under the scientific method of experimentation, scientific law is the result of prediction and a subsequent verification. What is the source of this prediction? The answer to this is mathematical deduction. "Mathematics is the soul, or… the 'mainspring,' of modern science" (Clark, 44). It was by mathematical formulations that the concept of inertia was given a law and gravity was used as the explanation for planetary motion in an era of much heated debate. There are two chiefly important ideas here that are necessary to expound upon. Clark addresses these over the course of his second chapter titled *Newtonian Science,* and we will here attempt to summarize them. The first is the word "explanation;" and the second is the phrase "mathematical formulations."

It is important to keep in context the fact that Clark was pursuing to demonstrate that Newton's discoveries were, after Newton, used by others who desired to use them beyond their intended (and logical) application (Clark, 54). For it was not Newton who denied the existence of a "higher power," but rather it was those who came after him. Newton was sure that gravity could be used to describe why the planets orbited around the sun, but he was also sure that gravity could not explain the original "positions of the orbits themselves." Thus, he wrote that the solar system "could only proceed from the counsel and dominion of an intelligent being." Our two "chiefly important ideas" are then a crossroads of sorts and how we understand them will help us to determine our philosophy of science.

What is Meant by Scientific Explanation?

It was Newton who was able to solve many of the problems relating to planetary orbit that frustrated his contemporaries and predecessors. The problem that thousands of years of astronomy could not overcome was how the planets could move in circular orbits. It is true that Copernicus made magnificent headway by "working out a heliocentric astronomy" (Clark, 37) and Kepler expanded on that with his laws of planetary motion, but they were not able to explain *why* the planets move as they do. Why do they "fall forward" in their motion and rotate around the sun rather than simply move in a

straight line, past the sun, toward the edge of the universe (if there is one) like Galileo's law of inertia indicates should happen? It was Newton that gave the world the concept of gravitation, a word that, even today, can be used by any seven-year-old to answer the question: "why does the rock fall to the ground when one lets it go?" Indeed, the answer to the question of a falling body is the same as the answer to the question of planetary motion. Gravity is said to be the cause of both.

Now, we must mimic Clark in noting that there is a necessary distinction between an explanation and a description. We cannot say that gravity *explains* the motion of the planets, for we do not know what, exactly, gravity is in and of itself. It is certainly, to use Clark's vocabulary, invisible and intangible. And we therefore must ask whether it is "useless as an explanation of motion" (Clark, 39). We do not even have the information available to answer the question, "what is the cause of gravity?" Newton did not know and famously noted "*Hypotheses non fingo*" (I frame no hypothesis). It is here too that Clark points out that Newton attributes the placement of the planets to "an intelligent and powerful Being." But this is no explanation; indeed, Newton refused to explain gravity. And how could he? Gravity is unobservable.

We are, however, interested with Clark in the implications of this refusal. "What does this refusal mean? If gravitation cannot be explained, can gravitation explain anything else? What is meant by scientific explanation?" (Clark, 40). When we answer that a stone drops to the ground "because of gravity," what, exactly is meant? Have we explained what happened? Clark applies the law of gravity to "freely falling bodies" by writing that,

> "The body falls with an acceleration of thirty-two feet per second per second. Now, to substitute the law itself for its name, the question, Why does a stone fall? Is answered by saying it falls because it falls with an acceleration of thirty-two feet per second per second. But how does a statement of the rate of the fall explain what makes the stone drop in the first place? […] Does it not become clear upon reflection that the law of gravitation is not an explanation? It

explains neither the fall of the stone nor the revolution of the planets" (Clark, 41).

Rather than being an explanation then, the law of gravity is a statement of fact. Clark writes: "A statement of fact is not an explanation: it is the very thing that needs to be explained." So then, while it is true that the scientist has written out laws of nature, we must realize that these laws do not give explanations at all. They certainly aim to describe what is happening, and perhaps this is a noble cause, but once we realize this, it surely puts a damper on science if we want it to explain the universe.

Clark has shown that scientific law is not good enough to explain reality because science only seeks to answer questions of *how* (i.e. *How* does a body fall? Answer: with an acceleration of thirty-two feet per second per second). Therefore, the scope of science is narrower than many might suppose. And further, since "*how* is not the only question that can be legitimately asked," there must be other fields of study that address what science does not. Thus it is illegitimate to claim that science itself does away with God completely. Science cannot explain anything ultimately, but rather, focuses on description.

What about the nature of the description, the "scientific law" itself? We turn there next.

The Limits of Experimentation and Mathematics

Our second consideration concerns what is meant by mathematical formulations and their role in experimentation. We have already mentioned that,

> Not only did Galileo prepare his trough and roll the marbles down, but what is more, he varied the length of their descent. This means he measured the distances; he measured the times also. And he made these measurements for the purpose of manipulating them mathematically."

But Clark continues here to say,

> One of [Galileo's] mathematical analysis showed that varying the velocity with the distance presupposes infinite speed; and since this is impossible, he assumed that the velocity increases

> with the time. From this assumption, this law, this mathematical equation, it can be deduced that a body falls four times as far in two seconds as in one. Later scientists used more mathematics; indeed, they invented more mathematics to use" (Clark, 44).

Thus, these mathematical formulations are the results of the creation of laboratory conditions and have not stemmed from a real world observation. The trough was prepared, the lengths were chosen, the marble was crafted, and even mathematics needed to be invented to keep up with the plethora of experiment. It is quite curious then, given these pristine conditions, that one could venture to apply the results of these experiments to real world nature. Has the scientist "proven" anything? He has done well in tracking the velocity and motion of a marble on a trough, a bob on a pendulum, but would it perhaps be too much to ask that the scientist find us these perfectly crafted and prepared materials in nature?

Clark then is correct in noting that, rather than discovering these scientific laws, the laws are more accurately seen as constructions. Brilliantly constructed no doubt, but constructed no less. Mathematics then is useful in observing and tracking our marbles and bobs, but our problem is that we have not shown that mathematics is useful in constructing a worldview. And thus the claim that mathematics, upon which modern science is built, is the basis for studying all of reality is a claim that cannot be sustained. Or as Clark says: "Therefore, since the Newtonian laws do not describe the actual workings of nature, they cannot be used as a satisfactory demonstration of the impossibility of God and miracles" (Clark, 55).

The problem with mathematical formulations does not stop there. While physics depends completely on mathematics, we must also demonstrate, leaning heavily on Clark, that mathematics gives us no absolute answers even in pristine conditions. If we are correct in saying this, what, then, are the prospects for physics?

Let us look at the technique of experimentation in pursuit of a scientific law. Gordon Clark writes: "Whatever the experiment may be, all measurement is the measurement of the length of a line." He explains what he means by giving some examples:

> If a scientist is attempting to determine the boiling point of fluid, he measures the length of the mercury in a thermometer. If he is interested in the specific gravity of this or that, he measures the distance between a zero mark on a balance and another mark on a scale."

As a good proponent of the scientific method, the scientist will conduct the experiment numerous times, each time ending with another measurement. He would perhaps even say that the more experiments he does, the more measurements he takes, the more accurate will be his findings. He then concludes his experiments and finds that his measurements are all different from each other. Indeed he has a collection of differing numbers! Clark puts it like this: "a list of different readings is an inescapable result of measuring" (Clark, 55).

Truly then, the scientist cannot stop here. For no law can be written which depends on readings that differ from each other. Clark reveals what is done in the next step toward a law of physics. "[The scientist] adds [the readings] and divides by the number of readings; that is, he computes the arithmetic mean." But why, Clark asks, is the arithmetic mean chosen as the next step? Are there not two other types of averages; namely, the mode and the median? On what ground is the mean considered and not the other two? "Whatever answer is attempted, clearly nothing in the observational data has dictated its choice" (Clark, 55). That is to say, for all the praise that the scientists lavish on themselves for being completely "empirical" and "sticking to the facts," it seems that they have already contributed something non-empirical to their experiment.

And thus, there is another example of the scientist constructing, but not discovering, an aspect of their experiment. Not only have they created an unnatural condition, but they have also begun to look for conclusions based on a method that they themselves, apparently at their whim, have imputed

into the data.

But Clark is not done yet. Each reading must be subtracted from the average mean so as to discover their differences. And each difference must be added together and divided by the number of readings so as to discover the mean of the differences. At this point, to clarify, the scientist has computed both the mean of the readings as well as the mean of the differences between the mean of the readings and the readings themselves. So again, the scientist has, at his own discretion, added to his experiment a step which has not been justified by the observed data. That is to say, on his way toward a law of physics, he has twice chosen an average based on his own desires. So much for absolute empiricism.

But again, Clark has more to say. The scientist must plot his values on a graph so that he can make a law out of them. Clark uses the following example of a value: 19.31 ± .0025. The 19.31 is the original mean. The ± .0025 is known as the variable error. Thus, to plot these results of the experimentation is to make a mark at the 19.31 point. But the variable error suggests that the result might not be right on that 19.31 point, but rather could be twenty-five ten-thousandths greater or lesser than that. How can this be plotted? With a line. To continue with our example, Clark suggests that we say we are looking at the force of gravity between two bodies. And thus a line which represents the readings has with it another line on the other axis that represents the "corresponding range of… force" (Clark, 56). We have just drawn a rectangular area on the graph. And each of our experiments has its own area on this graph, and we therefore have a graph with as many rectangular areas as experiments.

We are finally ready to produce a law of physics. The scientist "passes a curve through these areas, and this curve he calls a law" (Clark, 56). But where do we draw the curve? Once we draw a curve, we realize that there was room for us to draw it elsewhere. In fact, to quote Gordon Clark, "it is to be particularly noted that through a series of areas an infinite number of different curves may be passed" (Clark, 56). Empirically, no one can say that we must draw one specific curve. So which do we

choose? Clark continues by writing:

> "In other words, so far as observation is concerned, the scientist could have chosen a law other than the one he actually selected. Indeed, his range of selection was infinite; and out of this infinity he chose, he did not discover, the equation he accepts" (Clark, 56).

How can the scientist choose the correct "law" out of an infinite number of choices? Truly this is not possible. And if it is not possible, we should agree with Clark when he concludes, "therefore, all the laws of physics are false." The laws of physics are false and these laws are not based on empirical observation alone, contrary to the claims of the scientists. Mathematical formulations then, while wonderful for keeping track of our laboratory experiments, are not at all able to lead us to absolute laws. Proving that God does not exist seems a bit more problematic now. And surely we have made headway on our quest toward a philosophy of science; namely, that the scientific method cannot create a comprehensive and consistent worldview.

Newton Misapplied: The Rise and Fall of Mechanism

What happens when we take the mathematical laws, assume they are absolute, and assume further that they are capable of interpreting all of reality? We get mechanistic philosophy. The universe is a grand machine and nothing can happen except that which is mathematically predictable. In other words, by taking the laws of physics and applying them everywhere, many have assumed that they could move this into a worldview. "What was startling, disturbing, and controversial was the extension of the mechanical ideal to all phenomena, including life, and especially human life" (Clark, 45).

The implications of mechanism are important. For if the entirety of nature is a machine, then so is the person. Whereas the Christian worldview teaches that a person is a soul, that is to say that his person is not physical, the mechanistic philosophers quickly realized that a soul must be unnecessary. Reality, after all, is a machine. The human needs no soul. If this is true, the argument must merely be extended to "conclude that the universe needs no God" (Clark, 46). And what of thoughts? Are those

not the work of a mind that is not physical? Mechanism here too denied the Christian worldview in noting that "The brain secretes thought as the liver secretes bile" (as quoted by Clark in Clark, 46). By misapplying Newton's laws by extending them beyond the laboratory, the atheistic revolution was in sight.

As we have discussed, it is simply dishonest to apply the laws of physics, that is, the laws of laboratory conditions to the real world; both for the reason that these laws have not even been observed in nature and also for the reason that they are, in fact, not laws at all. There is absolutely no empirical justification (and this is what science demands –facts!) for applying the scientific method to issues of religion, spirituality, ethics, and politics. As we have shown above, "Newtonian science... cannot validly support these conclusions. The picture of science is itself mistaken, and its extension to religious affairs is unwarranted" (Clark, 54).

And yet, this also the mechanists have done. If reality is a machine, then there can be no other understanding of issues except those justified by mathematical formulations. Religion? There is no divine Being. Ethics? "It is wrong always, everywhere, and for anyone, to believe anything upon insufficient evidence" (Clark, 52).[ii] Politics? As we will see below in our review of Behaviorist psychology, tyranny is justified. We have thus ventured away from science as a narrow study and toward science as a worldview. As Clark asks, "How does one arrive at the view that the universe is a mechanism? It is certainly not a valid deduction from experience. Rather it is a leap of faith" (Clark, 56). We are not too bold to say that science had become the god of the twentieth century.

But as is true of all false gods, eventually it fell apart and today lies in ruin. If mechanics as a worldview depended on Newton's groundbreaking laws of motion, what might happen if it was realized that the Newtonian laws could not be sustained? What happens is that mechanics collapses and we are left in bitter skepticism. And this is exactly what happened.

Newton's first law of motion presupposed a fixed point by which one could measure a straight line. But where could a fixed point be found? His theory of gravitation argues that all particles are constantly and continuously interacting with each other. So then the laws of gravity were incompatible with the law of inertia, a troubling contention to be sure. Indeed, we cannot find in nature a fixed point by which to draw a straight line so that a body can move toward it. For not only is the present position of the body itself constantly changing, but so is the destination. Clark clarifies our point:

> "As there are no visible points in the heavens other than the stars [which are not fixed], it remains forever impossible to discover a straight motion, if indeed there is one. Perhaps the planet Mars is moving in a perfectly straight line toward some invisible, hypothetical point in space, carrying the whole solar system along with it; but if it is, we could never know it because we cannot fix that point. Therefore, the idea of rectilinear motion must be dropped from science" (Clark, 59).

Without a fixed point, the absolutism and dogmatism that the mechanists held in high regard is swept away. Whereas Newton, with his ingenious bucket of water experiment, made a distinction between the absolute and relative conceptions of rest, motion, and space, later scientists Ernst Mach and Hans Reichenbach put forth that all is relative. Newton's mistake, we find, is that he failed to consider that what he called *absolute* in his experiment was, in actuality, *relative* to still another point, somewhere in the universe, perhaps a star. In other words, the flaw in Newton's conclusion was that he assumed absolute space and absolute motion where it was not, in fact, justified. It was Einstein who recognized the implications of this and thus greatly impacted the world of science with his theory of relativity.

Post-Newtonian experimentations with light have produced conclusions that are even more astounding. The great debate since the seventeenth century regarding the nature of light was whether light is corpuscular, that is, made up of small particles that travel in a straight line, or it is actually a wave. Newtonian mechanics would indicate that the speed of light in air would be greater than the

speed of light in water if light is a wave. However, if light is corpuscular, the speed of light would be greater in water than air. After Foucault carried out an experiment in 1850 in hopes that we might have an answer, it was discovered that the light traveled faster in air. And thus, light is a wave!

And yet, in 1902, Phillip Lenard conducted another experiment. We will use Clark's succinct summary of this one:

> Suppose a source of light shines upon a copper plate: The energy set up in the plate per unit of time can be measured. If the distance between the plate and the source of light is gradually increased, the amount of energy decreases. Now, on the assumption that light is a wave-motion, this decrease continues infinitely toward zero. If, however, light is a particle, and the source emits so many particles per unit of time, the decrease will not decrease uniformly to zero because the energy absorbed by the plate can never be less than the energy of a single particle. The experiment showed that the energy does not decrease uniformly toward zero, but on the contrary decreases to one and then drops suddenly to zero.

And thus, light is a particle!

This contradiction may be puzzling, but it must be remembered that our first experiment rested on the assumption that Newtonian mechanics was, in fact, true. So then, the conclusion of the first experiment in the nineteenth century, namely, that light is a wave, failed to consider the eerie possibility that Newtonian mechanics could not be upheld after all. Where, then, does that leave mechanistic philosophy, "poor thing?"

Perhaps we speak parenthetically when we note that scientists today, unsure of which theory of light is true, use both. Now, they certainly cannot both be true but as Clark suggests, "they both prove useful" (Clark, 63).

The intersection here of the truth and usefulness of science is where we will bring our consideration of science to a close. For we now have almost all that we need to put together a

philosophy of science. Newtonian mechanics has failed as a worldview, as it cannot function as a proof or basis for absolutes. Clark writes: "The dogmatic assertion of absolute truths, the exclusion of all non-observational data, the idea that science really discovers how nature works have been amply refuted" (Clark, 64). Since science cannot rationally produce anything dogmatic, and indeed proponents of such have largely been swept away, we must choose between an acceptance of skepticism and a completely different view of science altogether. We have shown that science and the scientific method are not worth using as a foundation for a worldview of all reality. If science is to still be used to establish truth, we must become skeptics. If science is our only hope, then we can truly know nothing absolutely. Mathematical formulations which stem from the laboratory and incompatible theories of motions which are used together today have shown us that to put faith in science as a general philosophy is quite contrary to reason and logic.

But what if we gave science another purpose? What if, rather than relying on science to produce a general philosophy, we instead use it for something more practical? Surely it should be agreed that without science, this essay could have not even been typed on a computer and printed from an electronic printer. Moreover, the fact that the present author was able to drive the essay to the post office, pay for postage with a debit card, and call the folks at work with a cell phone to let them know traffic was heavy, depends heavily on scientific progress. This we affirm. Indeed, many of the great advancements and innovations of this last century, the present century, and even the next can be attributed to science. So therefore, while the laws of science are always false, we still hold that science is useful. Science is the means by which we "can utilize nature for our needs and wants" (Clark, 76). This understanding of nature is a more practical application of a theory of science known simply as Operationalism.

We do not seek absolute truth by scientific means, for such a goal is unattainable. Clark's application of Operationalism "is not put forward as a general epistemology, and most certainly not as a

universal relativism. […] On the contrary, Operationalism is here offered absolutely as a philosophy of science. Instead of being the sole gateway to all knowledge, science is not a way to any knowledge – unless, as was just said, it is a knowledge of what to do in a laboratory. But knowledge of nature, No" (Clark, 76). This "knowledge of what to do in a laboratory" has certainly produced many wonderful gadgets. The current author is using one now. Thank God for science.

While it is beyond the scope of this essay to make a lengthy positive assertion of the best general philosophy, since we have established that science does not operate in this way, it will suffice to say that Christianity, the worldview based on the Christian Bible is our conviction. As the Scripture says of itself, "Thy Word is Truth" (John 17:17). It is this truth that is absolute and undeniable.

"Behaviorism and Christianity"

When we discussed above that many followers of Newton had extended his laws to all of reality and, among other things, removed the necessity of the soul from the individual, we referred to this trend as the rise of mechanistic philosophy. The offshoot of this philosophy sowed the seeds for the rise of a psychology that dismissed everything about the person that was immaterial. Thought, rather than being a cognitive function of the mind and an effort of consciousness, was reduced to a physical occurrence. Indeed, as shocking as this might sound to the unacquainted reader, a thought, for the so-called Behaviorists, is seen as an act of physical motion --as physical as speaking itself. And since there could certainly be no soul or spirit for the Behaviorist, which is the psychological subspecies of a naturalist philosophy, the person was entirely material and thus was not immortal. He, as everything else that is real, is simply a machine. Such are the implications of a mechanistic worldview.

We will now discuss and consider Gordon Clark's overview of Behaviorism and, instead of sectioning this review by separating the various Behaviorist proponents as Clark as done, we will rather section it by its primary teachings. Clark summarizes the Behaviorist psychology by looking into four key

figures in its development: John B. Watson, Edgar A. Singer, Jr., Gilbert Ryle, and B.F. Skinner. Following a summary of these four, interspersed with critique and criticism, he takes offers a devastating rebuttal against the system of Behaviorism. Next, he takes the time to peer into the teachings of a so-called "Christian Behaviorist" named Donald M. Mackay, and then concludes with a thoughtful theological analysis of this individual. Here, we too will look into the thought of each of the above figures but will structure our overview differently.

The Aim of the Behaviorist: A New Psychological Method

It is important to remember that, for the Behaviorist, all that is to be known must first be observed. Observation requires the use of the "test-tube" and an "objective" or outside point of view; that is, one cannot observe the behavior or activity of a person by reflecting on himself. And thus, as a psychology, Behaviorism rejects the utilization of any introspection, the method of the earlier psychologists. Clark quotes John Watson to say: "No one has ever touched a soul or has seen one in a test tube" (Clark, 94). Clark follows this up to point out that "the reference to touching and seeing presupposes that sensation is the test of truth" (Clark, 94). Therefore, from the very inception of the psychological theory of Behaviorism, we discover unsurprisingly that methodologically, Behaviorism seeks to be strictly empirical like their Newtonian predecessors. Of course, this should not shock the reader given that we have already stated as much about the mechanistic worldview, which is the foundation for Behaviorism.

That introspection is dismissed in Behaviorism is important in studying its historical development, but some Behaviorists have taken the position that early advocates, such as Watson, have overstated it. For example, B.F. Skinner, quoted by Clark, tells us that "Early Behaviorists wasted a good deal of time, and confused an important central issue, by attacking the introspective study of mental life" (Clark, 126). In this, we realize that one of the outcomes of nearly a century of Behaviorism is a grand attempt to redefine terms. Behaviorism shifted away from Watson's opinion that the Behaviorist

"dropped from his scientific vocabulary all subjective terms such as *sensation, perception, image, purpose*, and even *thinking* and *emotion* as they were subjectively defined" (Clark, 95). Hence, when the later theorists used such words, it should be remembered that the meanings of these words have changed. To reiterate, whereas the early theorists desired to reject certain terms, the later theorists simply redefined them. Clark is careful to mention that "this causes confusion, because the employment of common terms gives people the impression that the Behaviorists are talking about commonly received meanings in conformity with good English usage. To understand them aright, the ordinary reader should substitute the word *chemistry* when he finds *perception* or *thought* in their writings" (Clark, 95).

So then, the field of psychology, according to the Behaviorists, should be narrowly concerned with behavior because, rather than sensation, perception, and the rest of these terms, behavior can actually be observed. Behavior refers to "what the organism does or says… saying is doing [that is, moving the larynx and tongue] –that is *behaving*" (Clark, 95).[iii] Any other method of psychology is a deviation from the principle that observation is the only way to discover the person. In this way, behaviorism became a reaction against the various forms of mentalist psychology.

We have noted that the Behaviorist adheres to an empirical epistemology –that is, things must always be observed. Not only do they adhere to this as an epistemology, but they also seek to make this the method of their own psychological theory. Thus, a psychologist must observe the individual in the same sense than any person must observe his subject, any subject. Indeed, man, like nature, is fully a machine to be examined.

Life and Soul

If a man is fully a machine to be examined, the soul, as it is immaterial, does not exist. And further, since a soul or mind are not bodies that are extended into space, they should not be referred to as being "inside the body" as is commonly said. Gilbert Ryle is quite assertive on this point and

"abusively" (Ryle's word) defies any other view as "the dogma of the Ghost in the Machine." That is to say, Ryle claims that it is an impossible suggestion for any nonmaterial aspect of a person to have an effect on the physical body.

Accordingly, Clark's summary of Singer's position on this issue is that, on the very demands of observational empiricism, the soul itself cannot be asserted to exist in every person. Clark infers from Singer that, "the analogy that as my soul controls my body, so the similar motions of another body require an unobservable soul, is an analogy based on a single instance and therefore has no value" (Clark, 104). In other words, perhaps alluding to David Hume, Singer questions whether an individual can, upon the assumption that he himself has a soul that directs the body, logically extend that assumption so that it applies to all other persons. There is certainly no observation in this extension and therefore the assumption of the soul does not help us to explain behavior. But that, of course, is not to mention that Singer himself does not in the first place "assume that any soul produces my bodily motions" (Clark, 104).

If thinking is physical motion, and the soul does not exist because it is immaterial, what then is life? Is life too built on material and motion? It would seem so: "There is no 'life' that must be added to a body to make it alive. Life is just the body's behavior" (Clark, 104). This concept is given an analogy; namely, that "heat was once explained as a body, caloric, that permeated another body to make it hot. Now science has seen that heat is simply the behavior of the hot body" (Clark, 104) Thus, neither life nor heat are separate things that are added to a body, but rather are traits of behavior of the body which we observe, causing us to call those bodies "alive" or "hot."

What is observed in a living body by which we can realize the fact that it is alive? According to Singer, "there is nothing in the way of mechanism common to all that is or might be called living…." And he continues by saying that "the class of living-being has… a certain purpose common to its members, and only this purpose can be offered as the definition of life" (Clark, 107). Therefore, Singer denies that

life can be given a mechanical definition by asserting that mechanically speaking, there is nothing common to anything that can be described as having life. Conversely, he takes a teleological approach to describing the characteristics of the behavior known as life by asserting that all those in the class of life have a purpose in common.

The complications with both the non-existence of the soul and life-as-behavior are many. In the first place, we should note that the positive assertions of the scientific method, that is, observational experimentation, cannot in any way prove that the soul does not exist. Since observation can only deal with that which is observable, it is a leap of logic to declare that that which is non-material does not exist. The most the Behaviorist could possibly say is that the existence of the soul cannot be known. In other words, as Clark constantly mentions, the positive arguments for Behaviorism are actually underdeveloped, deficient, and incomprehensive. The Behaviorists spend much of their time arguing against the opposing styles of psychology and asserting their own principles, but hardly enough time giving their "proof" for their own view. As an example and perhaps in a different context, in his concluding remarks on Behaviorism, Clark writes that "the intellectualist therefore concludes that the argument for Behaviorism is distinctly deficient" (Clark, 140). Such statements are common throughout.

In the second place, the assertion that the body is simply a machine cannot be as dogmatically absolute as the Behaviorist would like. Even as Clark says of Ryle, the impossibility of the "Ghost in the Machine" dogma depends on the unproved assumption that the person is, in fact, a machine. To quote Clark, "let it be said here that there is no necessity of considering the human body or the physical world as a machine." And third, since the Behaviorist denies that the soul exists, so he also denies the very foundation for all of thought and knowledge. These ramifications will be discussed below in the following section.

But what is more, our struggle with the teleological approach to recognizing life is twofold. We will let Clark explain the first. "Singer has defined purpose as a result that occurs twice, or more, with

two or more bodies. If a bee stings a man and second bee stings a second, then the purpose of the two bees is to sting people. […] But if one falling stone splashes into a lake and another into another lake, shall we say that the purpose of stones is to splash? In other words, a Christian or Platonist will not be satisfied with Singer's underlying definition of purpose" (Clark, 107). As for the second example of our struggle, we must note that both his assertion denying a commonality of mechanism as well as his assertion affirming a commonality of purpose cannot be upheld by Singer's own principles; namely, that everything that is real is subject to the laws of mechanics. In other words, his denial that life can be classified mechanically contradicts the foundations of his Behaviorism.

It is important here to reinforce the Behaviorist's understanding of behavior. It is not their teaching that thinking and life produce certain behaviors that are to be observed but rather, it is that thinking and life *are* certain behaviors. Some behaviors we, for example, call running or hitting, and others we call thought. Even the consciousness itself is behavior. If asked "what aspect of behavior leads us to call certain object *conscious*," the behaviorist, or at least Edgar Singer, admits that they do not know. Indeed they may perhaps never know. But they certainly are sure of their assumption. In fact, Clarks quotes Singer to say, "I don't know what life means, nor what consciousness means…" (Clark, 103). It is this admission that leads Clark to declare: "Thus Behaviorism begins in blind faith." And further, since "Singer admitted that he does not know… what aspect of behavior leads us to call certain objects conscious, or even living… then Behaviorism is not based on observation. It is a subjective preference" (Clark, 104).

Thinking and Knowledge

If we are to refer to thinking at all, it must be a physical motion, that is, to use the Behaviorist's terms, a *behavior.* It was John Dewey who "somewhere compared thinking with digestion. Digestion is not itself the stomach; It is not a material thing. So too thinking or soul or mind is not a material, and much less an immaterial, thing: It is the functioning of the body" (Clark, 115). Many people are not used

to referring to a thought as a motion or a function. And yet, as Clark says about Watson, "he… identifies thinking as a sub-vocal speech. Thinking is precisely a motion of the larynx without a sound" (Clark, 95). Skinner expounds on this idea and, referring to thought as "verbal behavior," writes that "It has a special character only because it is reinforced by its effects on people" (Clark 132).

This leads us to another important aspect of Behaviorism. If thinking is a physical motion, verbal behavior, then knowledge too must be physical. For the behaviorist, knowledge is founded on the "conditioning" of one's environment. Thus, rather actively and voluntarily perceiving the environment, the Behaviorist holds that knowledge is more of a passive and mechanical response to the environment. That is to say, knowledge held in the mind should not be seen as dictating our actions and behaviors but rather that knowledge is the action or behavior itself. It is perhaps instructive to make mention of the fact that while the early behaviorists like Watson made behaviorism simply a method of psychology, it was the later Behaviorists like Skinner who actually expanded the principles and attempted to describe all that was actually happening in the body. For example, it was Skinner who noted that Behaviorism teaches "that the initiating action [of perception] is taken by the environment rather than by the perceiver" (Clark, 130).

Again, the denial of the human as active participant in the perceiving process leads us to further concern. If there is no perception in this sense, we discover, with the help of Clark, that "…only individual realities are knowable. There are no abstract ideas" (Clark, 131). How, then, can we turn "individual sensations… into universal concepts? Without universals, such as courage, liliaceae, and even red, the contents of the mind, if there be any mind at all, do not merit the name of knowledge. Without subjects and predicates there is no truth, and every predicate is a universal." In other words, if there are no universals, there are no predicates. And if there are no predicates, there is no truth. The Behaviorist, Skinner in particular, must therefore provide some sort of universal, although he does not seem to be able to do so. Simply redefining the word abstraction (as Behaviorists tend to do of many

words) does not solve the necessity of its traditional meaning.

That the mind and thought exist immaterially is a myth according to the Behaviorists. Gilbert Ryle says it like so: "When we describe people as exercising qualities of the mind, we are not referring to occult episodes of which their overt acts and utterances are effects; we are referring to those overt acts and utterances themselves" (Clark, 111). That is to say, any intelligence that is ever portrayed is not the product of mental consideration or deliberation, but rather the behaviors, the physical motions themselves can be called "intelligent." Clark gives this somewhat sarcastic example: "Bobby Fischer's[iv] genius consists in the motions of his fingers as they pick up chess pieces and put them down on other squares" (Clark, 111).

In seeking to further demonstrate the Behaviorist doctrine, Ryle attempts to show that the position of the mental intellectualist is "logically absurd" (Clark, 112). Here, Ryle wants to deny that intelligence consists of knowing certain propositions but is rather in the conditioned physical tendency to do things the right way. In other words, intelligence for Ryle is in "knowing *how* rather than knowing *that*" (Clark, 111). Here we find a prime example of the Behaviorist effort to redefine words. Moreover, as Clark notes, Ryle unfortunately fails to realize that the difference between knowing *how* and *that* is overstated and unimportant. Knowing *how* to do things is simply knowing *that* certain actions have certain results. But regardless, Ryle proceeds with his argument to display the absurdity of intellectualism.

Clark interprets Ryle's argument as such that if intelligence was a matter of mental "apprehension of truths," (knowing *that*) our problem is that we could never physically act intelligently. Ryle argues that, in Clark's words, an "overt physical action requires a prior intellectual act" (Clark, 112) but this intellectual act also requires a prior intellectual act. And thus, we face a problem of infinite regress. No one could "ever break into the circle." But Clark objects by noting that Ryle's assumption is that all internal and intellectual acts require a prior intellectual act. On what basis does Ryle assume

this? We agree that we cannot act physically without a prior act of the intellect, but it does not at all follow from this that intellectual acts must also precede intellectual acts.

What should be said of all of this? What are the implications of the claims that all thinking is behavior and all knowledge is simply a result of conditioning and various mechanical responses to environmental stimuli? The result is that the Behaviorists have rendered it impossible to know anything, communicate anything, and give any real meaning. Clark provides a revealing and quite necessary analogy to demonstrate the utter incoherence of the Behaviorist system. Since all thought is, for the Behaviorist, a physical motion, perhaps we can imagine Yankee Stadium as one person's body and the first pitch of a baseball game as a particular thought. This particular pitch, this thought, is an inside curve. Once the pitch as been thrown, we know that it is a motion that can never occur again as it did the first time. As Clark explains, "a given motion is a dated even and cannot occur twice. It may be that a pitch in the third inning is also an inside curve, but it is not the identical pitch. It has come fifteen minutes later. Then, too, its speed is not precisely the same, and the curve breaks about half-an-inch higher. That is to say, the same thought can never occur twice. If I think though *X* at 2:30 P.M., I cannot have the same thought at 3:00 P.M., or ever after. In other words, memory is impossible" (Clark, 139).

Clark also points out that the common reply will be that the second thought, while not identical, is in fact similar. But again Clark realizes that this very statement is a new thought. In the baseball game above, we have introduced a new pitch, perhaps a "knuckle ball in the fourth inning." But how can a completely different motion altogether make a connection between two previous motions that, because they occurred in the past, no longer exist? So therefore, "Behaviorism… cannot discover that two motions [two thoughts] are similar." What, then, has happened to meaning?

Clark has one more devastating point to add. It is clear that our Yankee Stadium scenario presents a problem for the Behaviorist, but we must remember that Yankee Stadium only represents one person. None of the pitches that ever occur there can be the same as the pitches with a different

ball at a baseball diamond in San Diego. "Since obviously a single pitch can never occur in two cities, it follows that two minds can never have the same thought." And therefore, "no one else can have the least idea of what Skinner and Ryle [and any other Behaviorist offering their theories] mean. And as the previous paragraph has shown, they themselves have no idea what they wrote, now that the writing is finished" (Clark, 140).

Thus, Clark has displayed that the Behaviorist system fails on its own claims. But we must not forget the even more problematic foundation of Behaviorism: empiricism. Specifically, the Behaviorist touts his emphasis on observation and experimentation. And so, Clark has some quite relevant questions that should be posed to them, relating to the methods. Among them: "What, experimentally, are the precise chemical reactions that you identify as the idea of the square root of minus one, and what different reactions are thoughts on gravitation or baseball?" (Clark, 140). This alone is enough to show that the Behaviorist has been deceitful. He cannot show by experimentation what is meant by a difference between thoughts, if in fact they are physical and chemical. Of course, empiricism as a whole is worthless in determining universal propositions. The Empiricists "cannot validly establish any law of science. Experience is always finite and induction is always a fallacy" (Clark, 141).

Ethics and Politics

There is more to the Behaviorist world though than just theories on the mind and thought. Indeed, since it deals primarily with "behavior," it cannot be overlooked that Behaviorism has important things to say of ethics. It was Singer who, according to Clark, acknowledged "that Behaviorism requires its advocates to take a position on ethics" (Clark, 104). Clark also quotes Watson to say that:

> "I [Watson] would like to point out […] that some time we will have a behavioristic ethics, experimental in type, which will tell us whether it is advisable from the standpoint of present and future adjustments of the individual to have one wife or many wives; to have capital

> punishment or punishment of any kind;…whether many of our other prescribed course of conduct make for adjustment of the individual or on the contrary, such for example as having a family life or even knowing our own fathers and mothers" (Clark, 96).

It appears that Watson himself did not determine the proper ethical code of the Behaviorist, but he did realize that, to be consistent, ethics must be "experimental in type." He is clear though later that the idea of punishment for a wrongdoing should not be given credibility. First, a child cannot be held responsible for his behavior, for it is more accurate to say that the wrong "is the parents' [or teachers'] fault" (Clark, 98). Skinner expounds on this by shockingly (at least to the Christian) stating that we "must assume that a person's behavior is controlled by his genetic and environmental histories rather than by the person himself as an initiatory, creative agent" (Clark, 135). Watson also says against punishment that, "The idea that a child's future behavior will be prevented by giving him a licking in the evening for something he did on the morning is ridiculous" (Clark, 99).[v]

Since Behaviorism is a theory of psychology that emphasizes behavior, it is not surprising that throughout Clark's book he makes reference to the fact that Behaviorism "aims to alter morality" by changing one's behavior. But we are interested in what behavior we are supposed to aim for. Is there an ethical ideal? After all it has previously been established that in Behaviorism there can be no ideals or universals. The answer is that in Behaviorism there is "no right or wrong, no obligation, no morality, no praise, no blame. One does not praise or blame nitric acid for burning one's finger. It is just a natural contingency" (Clark, 136). So too all human behaviors are simply dependent on natural contingencies and one's environment. There is no right and wrong, but the Behaviorist does believe that we can improve society. Society can be improved by the "restoration of social environments in which people behave in ways called moral" (Clark, 137). In other words, since all behavior is just a conditioned response to the environment, behavior is not to be changed from "the inside" but rather, the exterior world must be changed so that the person may behave differently. But of course, there is no answer as

to what the ideal environment should be. As Clark mentions, both Hitler and Mao had some idea of a wonderful future environment. What makes their goal so wrong? And further, what makes their means so wrong? We can no more say that opposition to their activities is right than we can say that their totalitarianism was wrong. It seems then, that we have made our way to the political implications of Behaviorism.

The denouncement of punishment indicates that even current criminal systems should be vastly changed. Of course, we wonder how a criminal could even be called such given the fact that it was the fault of his environment, not his person, which caused him to act wrongly (again, assuming that wrong can be identified in the first place). But despite these objections, it remains true that punishment for the Behaviorist should be eradicated. How, then, should the murderer be handled? Clark points out that he must be retrained by "social education." They "should be placed in chain gangs, at strenuous labor twelve hours a day, under the direction of Behaviorists." Perhaps we are irreverent in finding humor in the claim that this is not punishment.

Now, it is indeed interesting to hear of the fate of the murderer in the Behaviorist ideal. But our interest turns to downright dread as we consider the fact that the murderer is not the only type of criminal to the Behaviorist. John Dewey considered "private and personal ends 'repulsive'" (Clark, 99). Surely this includes private property. And what of religious liberty, homeschooling, parental rights, and Christian scholarship in the family? They are all "undemocratic." Any who take part in these "undemocratic" and "repulsive" activities ought to be subject to severe punishment, no, "social education." The politics of the Behaviorist is totalitarian.

How can such a totalitarian regime be upheld? If there is only one approved way of life, approved conveniently by the Behaviorists themselves, how can its enforcement be justified? And further, on what grounds must we hold that Dewey's, or any other Behaviorist's, goals are good? Clark notes that Skinner has a hard time of answering that. Skinner writes that "There are things which

almost everyone calls good." But as Clark says, this seems to subject "the Behaviorist to the unscientific opinions of a large majority, and the Behaviorist takes pride in being scientific. Since, too, majority opinion might accept sever things as good, this principle prevents the Behaviorist from choosing one of these things and rejecting another" (Clark, 141).

The Behaviorist's government isn't based entirely on majority opinion though, as Skinner goes on to note that what is assumed to be good must be "reinforcing." It is here that we reach the "good government." Clark, quoting Skinner, says: "to make a value judgment by calling something good or bad is to classify it in terms of its reinforcing effects" (Clark, 142). This is quite a revealing admission. For Clark also reminds us that "Skinner… might not like to be reminded that Lenin's and Stalin's early purges reinforced them to commit extensive massacres. Their success reinforced Mao and Idi Amin to do better, for is it not better to kill more enemies than fewer" (Clark, 142).

Thus, while the politics of the Behaviorists is totalitarian, it also cannot be consistently upheld. For it stands on nothing.

Theology

Our last section will summarize Clark's theological analysis of so-called "Christian Behaviorist" Donald M. MacKay. He is "so-called" because he must change the historical meaning of Christianity to fit the Behaviorist paradigm. Clark puts it this way: "Christianity cannot tolerate Behaviorism" (Clark, 144). Quoting Calvin, Clark shows that the Christian worldview necessarily relies on the existence of an immaterial soul and a mind that thinks. Indeed, as Clark quotes John Calvin, the whole of man "consists of soul and body" (Clark, 144). Whether or not Christianity has it right is one matter, but it is completely another matter to clarify that MacKay has no grounds to redefine Christianity to fit his Behaviorism. They simply are in contradiction to each other.

At the beginning of Clark's analysis of MacKay he explains how he disagrees with MacKay's very premise. Because MacKay assumes that there is a dilemma because of the "scientific advances of

modern times [which] have caused many deep-rooted superstitions to wither," it is obvious that MacKay's presupposition is that there are true, universal, and "hard scientific fact" free from any other "philosophical presuppositions." Clark denies this very claim: "Contrary to common opinion, there are no data, no givens, no brute facts. Everything in anyone's mind is already there intellectually interpreted" (Clark, 145). We have already established the extent to which science is capable of helping us. Thus, the entirety of MacKay's worldview may at once be dismissed.

But Clark does take the time to address several aspects of Mackay's Behaviorism. Since Behaviorism has already been addressed philosophically, Clark's overview of MacKay is centered on theological concerns. MacKay's believes that "all physical events have physical causes." This is consistent with mechanistic philosophy. Of course, as we have shown, it is wrong because mechanistic philosophy itself fell with the rise of relativity. But nonetheless, these are MacKay's words. However, he wants to couple that view with his belief in "human freedom and morality." How human freedom is compatible with the view that reality is a machine that cannot deviate from mathematical formulations is tough to understand. The real difficulty though is that MacKay fails to completely define freedom.

As a result of MacKay's inability to clearly define freedom, Clark's analysis of Mackay on this point is quite detailed and long. But it should be summarized if possible. MacKay holds that freedom can "mean one of two different things: (a) We might mean that his action was *unpredictable by anyone*… or (b) we may mean that the outcome of his decision is *up to him* [italics are Mackay's]… and that no fully-determinate specification of the outcome already exists, which he would be correct to accept as inevitable and would be unable to falsify, if only he knew it" (Clark, 155). Later he clarifies that, while "God… knows… every detail of our past, present, and future… this divine foreknowledge is not something that we could be correct to believe if only we knew it –since for us (unlike God) this would involve a self-contradiction" (Clark, 155).

MacKay then apparently believes that "if God knows an event is inevitable," it is incorrect for

man to accept it as inevitable. This makes no sense. We wonder, as does Clark, "How can a belief that is true be incorrect when a man believes it? Is a correct belief ever a false or incorrect belief?" (Clark, 155). Clark continues by interpreting MacKay to teach that "God can have no foreknowledge that a man would be unable to falsify, if only he knew it. This means that a man is free only if he could falsify God's knowledge by knowing it. That is to say, a man, to be free, must be able to avoid the inevitable by knowing that it is inevitable. Is not this nonsense?" (Clark, 155). Clark shows how the implications of this nonsense lead to deeper problems, namely that MacKay agrees that God's predictive knowledge that a person will act in a specific way does not mean that the event is inevitable. And here, he would either have to accept a contradiction or else redefine the word inevitable. MacKay chooses the latter option, thus leaving us with the conclusion that he is unable to answer, or perhaps unwilling to truly consider, the objections.

There are other problems with Mackay. While Clark has shown that the laws of physics are always false, Mackay's Behaviorism depends on them. So then is God not free? Must He too adhere to these so-called "laws?" MacKay denies this and instead opts for the view that these laws actually describe the way that God normally operates, that is, they describe the pattern that God tends to follow. But of course if He only follows them *normally* then there are times when he does not follow them. But since the laws of physics reject the possibility of exceptions, Mackay has a difficult choice to make: Either mechanism is false and God is free or mechanism is true and God is not free. Holding to both the freedom of God and the truth of mechanism is contradictory.

Clark's final word on the matter however is several simple examples from the Scriptures to show that MacKay, since he assumes the mechanistic worldview, is not really on the same side as the Christian. It is quite obvious that MacKay should be called to answer the fact that God and angels, even though they have no material body, are all thinking beings. Therefore, if thinking is done outside the body, why does MacKay find it necessary to adhere to Behaviorism which teaches that thought is

necessarily a function of the body? Secondly, Clark points out that *Genesis* teaches that the physical body was not alive until he breathed spirit into that body. Why then does MacKay believe in the Behaviorism that teaches that life is a behavior of the body? Lastly, there are two examples from the Scriptures which show that the person is the soul, not the body, contrary to Behaviorism and Mechanism.

First, after Moses died and his body was buried in *Deuteronomy* 34:1-6, he later "held a theological conversation concerning the doctrine of the atonement with a refulgent Jesus" in *Luke* 9:29-31. That is to say, both his person and his thinking existed outside of the body that had long been decomposed. Secondly, what about the thief on the cross? If Jesus had told him that "Today you shall be with me in Paradise," then truly "the two persons were enjoying Paradise" after their bodies had been taken down and buried. Again, both the persons and their thoughts continued beyond the material world. Clark concludes here with this:

> Now, finally, like the thief on the cross and like Moses, some of our friends have died; we too shall die, unless Christ returns within a year or two; then being dead, our brains and body being buried, we also shall engage in theological discussions with Christ and those who preceded us there. Theology does not require brains; it requires a mind or spirit; and Behaviorism is a denial of the Gospel" (Clark, 160).

Conclusion

Gordon Clark has shown that a philosophy of science is necessary before it is used against the Christian worldview. Without knowing what science really is, there is no basis for claiming that "God does not exist." But more importantly, now that we do know what science is, we can rejoice in that fact that it has no basis on which to say that "God does not exist." God has given mankind the gift of nature for which its purpose is to fulfill our "needs and wants." Science then, while unable to "discover" any

ultimate laws, is quite useful to help us maximize our use of nature.

If science cannot be said to describe all of reality, the Behaviorist psychology is faulty; for it relies on the assumption that science is absolute. It needs the Newtonian laws of physics to describe everything. If the foundation cannot be sustained, then the theory which rests on top will surely fall. We have shown though that Behaviorism, even on its own terms, is insufficient as a theory of thinking and life. It renders communication and meaning impossible.

The Word of God is truth, this truth is propositional, and was given to us via the Scriptures. It is by our belief in such propositions that we are saved. The wisdom of the world is foolish. Let the scientists have their faulty and arrogant dogmas; we have our assurance in the promises of the almighty God, who has spoken truth to us clearly through the Bible.

[i] Both books, (*The Philosophy of Science and Belief in God* and *Behaviorism and Christianity*) are included in Clark's *Modern Philosophy*. Thus, all quotations, unless otherwise noted, are taken from "Clark, Gordon Haddon. *Modern Philosophy*. Unicoi, TN: Trinity Foundation, 2008. Print."
[ii] Gordon Clark is here quoting W.K. Clifford.
[iii] Gordon Clark is here quoting John B. Watson and the comment in the [brackets] belongs to Clark.
[iv] A famous chess grandmaster.