A THEOLOGICAL CRITIQUE OF EMPIRICISM

Ed Wilde[1]

Teasdale: Your Excellency, I thought you left.
Chicolini: Oh no. I no leave.
Teasdale: But I saw you with my own eyes.
Chicolini: Well, who ya gonna believe me or your own eyes?

-Duck Soup[2]

INTRODUCTION

Biblical soul care faces the charge it is "unscientific," as opposed to "psychology" (that notoriously broad term) which is a "science." While philosophically sophisticated definitions will provide far more nuance, such nuance is not the issue when biblical soul care is said to be "unscientific." In this case, "scientific" is a rhetorical flourish meant to stop discussion.

Something which is "scientific" is true. Something "unscientific" might be "nice for you," but it is certainly a substandard sort of knowledge.

Another thing about "scientific" knowledge (I'm going to stop putting quotation marks around "science" and "scientific") is that it is neutral knowledge: It is information which is true for everyone.[3] The function of gravity is identical in a Buddhist Temple and a university lecture room.

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[2] Duck Soup, directed by Leo McCarey (Paramount Pictures, 1933), https://www.youtube.com/watch?v=cHxGUe1cjzM.
[3] Julian Reiss and Jan Sprenger, "Scientific Objectivity," *Stanford Encyclopedia of Philosophy* (Stanford, CA: Stanford University, 2020), https://plato.stanford.edu/entries/scientific-objectivity/.

Unscientific knowledge, like biblical soul care, is a sort of *preference,* a sort of biased knowledge. But we can expand the problem with biblical soul care to theological claims generally. Theological claims are not "true" in any hard sense of the term. They are just things people believe "without evidence."

There is no need to belabor this point: it is a commonplace of our culture and it is a given which is simply "true." Only a benighted "fundamentalist" would possibly conclude anything different.

What then is the bedrock which gives science such an unassailable claim to truth? First, science is based upon empirical observations. We have access to sense impressions which are self-authenticating and unquestionably true presentations of the world (in fact, even our conscious awareness of sense impressions is itself an empirical fact, and thus self-authenticating). Second, by use of rational inquiry, one can logically understand the world in an objectively true manner.[4]

Those twin claims make science "true." Since theology is not merely examining sense impressions by means of rational inquiry, it cannot be "true" in the same manner in which other knowledge is true.[5]

My goal in this essay is to undermine the first prong of this "scientism" claim: that sense impressions are self-authenticating. This does not mean that I wish to conclude the physical world is an illusion—far from it. My concern is with the

[4] Nora Mills Boyd and James Bogen, "Theory and Observation in Science," Stanford Encyclopedia of Philosophy (Stanford, CA: Stanford University, 2021), https://plato.stanford.edu/entries/science-theory-observation/.

[5] Carl F. H. Henry, *God, Revelation, and Authority,* vol. 1 (Wheaton, IL: Crossway Books, 1999), 79–80: "The modern spirit has opted for empiricism as its way of knowing the externally real world, and the inevitable consequence of this decision is secularity. It was David Hume who first among the moderns formulated empiricism as the all-inclusive criterion of truth and applied it to theological assertions with an agnostic outcome. Hume's theory struck hard at the Thomist case for Christian theism, which, in contrast to the Scriptures, rests its argument on empirical considerations rather than divine revelation. Hume insisted that effective scientific inquiry is thwarted unless finite effects are correlated with equivalent causes only, rather than with an infinite cause; moreover, he denied any objective status to causality in nature. The Humean assault on Christian theism is therefore specially directed against the Thomistic contention that the existence of God, and the existence and immortality of the soul, are logically demonstrable simply through empirical considerations independent of divine revelation. Hume's contention was that those who profess theological beliefs on empirical grounds have no right to such beliefs unless they produce requisite perceptual evidence, and that in the absence of demonstrative empirical proof, belief is unreasonable."

justification, the warrant for the belief that sense impressions are objectively true without recourse to any more basic assumption.

Sense impressions, as you will learn, result from a remarkable, strange process: a process which in-and-of itself cannot justify the content of any sense impression as being "true." Sense impressions can only be justified as true on the basis of an assertion which cannot be grounded in the sense impressions.

Only a theological presupposition can justify sense impressions as being "true." And so, rather than theological claims being half-witted step-children of rational inquiry, theological claims are the only thing which makes any rational inquiry possible.

I am going to begin with first asserting the nature of "psychology's" claim to scientific knowledge about the nature of human knowledge. Having based that assertion on sense impression, I will then proceed to demonstrate the manner in which sense impressions bear an arbitrary and unjustified correlation to the "real world."

This will necessitate a theological grounding to our knowledge. Psychology, which as a science attempts to bar God from consideration, or to relegate religion to a particular psychological state would necessarily bar biblical soul care as anything other than a rhetorical position. We can use "God-words," but we cannot base any of our counseling upon an actual God.

And yet, as Dr. Ernie Baker has said, we believe that while counseling, divinity is present.

In a way, I am going to ask you to believe me, rather than your lying eyes.

PSYCHOLOGY'S CLAIM TO KNOWLEDGE ABOUT KNOWLEDGE

Psychology occupies a unique place among academic disciplines.[6] All disciplines

[6] I am well aware that "psychology" is in practice an almost undefinable term. There are so many

whether science or humanity state a claim to knowledge. Roman history is a claim to knowledge concerning Rome. Physics is a claim to knowledge concerning "matter and energy and the effect that each has on the other."[7]

Psychology claims to have certain knowledge about the internal "psychological" functioning of human beings. In that respect, psychology is similar to other disciplines. Thus, a psychologist who studies the effectiveness of various teaching techniques would have knowledge about that teaching techniques.

But psychology, or at least certain subdisciplines of psychology, claim to possess knowledge about *how we know.* Such a psychologist would claim to have knowledge about how the physicist can understand matter and energy – not about the experiments or observations of the physicist, but rather how the physicist as a human being can acquire knowledge.

For most of human history, the examination of how we know and the justification of that knowledge, epistemology, was the work of philosophers. And as such, the various positions were up for debate. One could hold to Plato or Kant. But something has happened with psychology's entry into the field. Rather merely positing a philosophy of knowledge, psychology claims to assert a scientific knowledge of knowledge itself.

THE WORD "SCIENCE"

The word "science" has a peculiar place in our rhetoric. By asserting something is "science," we mean that it is an unassailable truth; it is an objective determination which must be acceded to by all reasonable people. Think of use of the word "science," in public discourse with "follow the science" as to Covid protocols. It has been used as a rhetorical trope designed to prevent any further discussion of

different schools of thought and such a wide array of fields, that the term is close to meaningless. For purposes of my examination, I am limiting my concerns in this essay to the sort of "scientific" work which is conducted at a university involving experiments and observations and theories which more or less match the procedures of a hard science. This particular essay will focus primarily upon sensory perception, and will concern matter more in the line of physiology than Freud.

[7] *Cambridge Dictionary,* "Physics," (Cambridge, UK: Cambridge University Press, 2022), https://dictionary.cambridge.org/us/dictionary/english/physics.

the issue.[8]

At this point, I need to take an aside to note the difficulty of discussing "science" at this moment in time. There is a rational contention well-grounded in Christian thought that the world is there, is comprehensible, and follows regular patterns laid down by God. We would call these "laws of nature." Such laws would have no independent exercise; they did not invent or sustain themselves. Such laws are the regular acting of God in the world.

Eventually, the predominate position of those who examine such "laws" was that the laws had independent existence. Somehow, when the universe of itself sprang from a de Sitter Universe or some other quantum void, the laws of nature popped into existence. Such an assertion is "science." To say God put such laws and creation into place is superstition.

The argument that since there are "laws" in nature, there is no need to conclude there is a God of nature. God is only "necessary" if each interaction in the physical universe appeared to happen ad hoc.[9] That the laws themselves need explanation is never adequately explained; but that is beyond our immediate concern.[10] The position that there is an objective world which follows laws which can be observed and largely understood is in a general matter a presupposition for science.

This understanding reached its highwater mark when it was enshrined as federal law in the United States. In case which considered whether Intelligent Design could be taught as science, the court held that "science" is a field of

[8] Daniel Chandler, "Semiotics for Beginners," *The Kubrick Site,* last modified November 23, 2021, http://visual-memory.co.uk/daniel//Documents/S4B/sem07.html: "Tropes generate 'imagery' with connotations over and above any 'literal' meaning. Once we employ a trope, our utterance becomes part of a much larger system of associations which is beyond our control."

[9] A belief in a universe of ad hoc interventions by spiritual beings is quite pagan, but has no basis in the Scripture. Why such an argument has gained traction demonstrates both the ignorance of non-Christians, but perhaps an almost implicit atheism in some Christians.

[10] On what basis would one conclude that the various "laws of nature" have the inherent capacity to self-generate and self-perpetuate? Certainly we experience them to act in a continuous and predictable manner, but our continued experience of the laws is not evidence that they cause themselves to perpetuate. The earth turns, but that is a function of gravity. Why then does gravity continually operate in its manner? This sort of thinking is at heart a sort of naïve belief in magic: it just is and just does and these powers are self-perpetuating. It is really quite strange when you take the time to consider it.

knowledge which specifically excludes God, or any agency (beyond "blind" laws) from consideration:

> Expert testimony reveals that since the scientific revolution of the 16th and 17th centuries, science has been limited to the search for natural causes to explain natural phenomena. (9:19-22 (Haught); 5:25-29 (Pennock); 1:62 (Miller)). This revolution entailed the rejection of the appeal to authority, and by extension, revelation, in favor of empirical evidence. (5:28 (Pennock)). Since that time period, science has been a discipline in which testability, rather than any ecclesiastical authority or philosophical coherence, has been the measure of a scientific idea's worth. (9:21-22 (Haught); 1:63 (Miller)). In deliberately omitting theological or "ultimate" explanations for the existence or characteristics of the natural world, science does not consider issues of "meaning" and "purpose" in the world. (9:21 (Haught); 1:64, 87 (Miller)). While supernatural explanations may be important and have merit, they are not part of science. (3:103 (Miller); 9:19-20 (Haught)). This self-imposed convention of science, which limits inquiry to testable, natural explanations about the natural world, is referred to by philosophers as "methodological naturalism" and is sometimes known as the scientific method. (5:23, 29-30 (Pennock)). Methodological naturalism is a "ground rule" of science today which requires scientists to seek explanations in the world around us based upon what we can observe, test, replicate, and verify. (1:59-64, 2:41-43 (Miller); 5:8, 23-30 (Pennock)).
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> As the National Academy of Sciences (hereinafter "NAS") was recognized by experts for both parties as the "most prestigious" scientific association in this country, we will accordingly cite to its opinion where appropriate. (1:94, 160-61 (Miller); 14:72 (Alters); 37:31 (Minnich)). NAS is in agreement that science is limited to empirical, observable and ultimately testable data: "Science is a particular way of knowing about the world. In science, explanations are restricted to those that can be inferred from the confirmable data — the results obtained through observations and experiments that can be substantiated by other scientists. Anything that can be observed

> or measured is amenable to scientific investigation. Explanations that cannot be based upon empirical evidence are not part of science." (P-649 at 27).[11]

I say highwater, because shortly after this extreme form of "science" has come under attack from various directions. For example, science is being attacked on racist and oppressive: "A math education professor in New York City claimed that the equation 2+2=4 'reeks of white supremacist patriarchy.'"[12]

These attacks primarily concern the "reasoned discourse" prong of science. The "reason" aspect of science is beyond the scope of this essay. For purposes of this essay, I will limit my examination of "science" largely to the definition of Kitzmiller and the "scientism" as explained by J.P. Moreland:

> In scientism, therefore, science is the very paradigm of truth and rationality. *Strong scientism* implies that something is true, rationally justified, or known if and only if it is a scientific claim that has been success fully tested and that is being used according to appropriate scientific methodology. There are no truths that can be known apart from appropriately certified scientific claims, especially those in the hard or natural sciences.[13]

What this means is that if psychology is making scientific claims to understand human knowledge, psychology is in a position to exclude from consideration all things which "psychology" deems unscientific. Holding a position to "scientific" knowledge of knowing is a powerful place. As will be shown below, the claim to a self-authenticating "scientific" knowledge cannot be sustained, because at it most basic level, the matter of sense perception is itself not self-authenticating.

And if sense-perception, the bedrock of empiricism, is not self-authenticating, then the empirical basis of "science" as self-authenticating lacks grounding. This

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[11] *Kitzmiller v. Dover Area School District* (M.D. Pa. 2005) 400 F. Supp. 2d 707, 735-36.
[12] Emma Colton, "Math professor claims equation 2+2=4 'reeks of white supremacist patriarchy'," *The Washington Times,* August 10, 2020, https://www.washingtonexaminer.com/news/math-professor-claims-equation-2-2-4-reeks-of-white-supremacist-patriarchy.
[13] J.P., Moreland, "The Ironies of Strong and Weak Scientism," *JPMoreland.com,* September 27, 2018, http://www.jpmoreland.com/2018/09/27/the-ironies-of-strong-and-weak-scientism/.

does not mean that science is a false discipline, nor that there is no "real world." Rather, it means that we must ground our understanding of the world, and scientific inquiry in something better than sense-perception.

It is the position of this paper, that only by grounding our understanding in the presupposition of the triune God can we adequately begin to do science on a rational basis.

EPISTEMOLOGY AS A SUBDOMAIN OF PSYCHOLOGY

Willard Van Orman Quine, was one of the preeminent philosophers of logic in the 20th Century.[14] He went so far as to sound as if the entire field of epistemology were merely an aspect of psychology:

> Epistemology, or something like it, simply falls into place as a chapter of psychology and hence of natural science. It studies a natural phenomenon, viz., a physical human subject. This human subject is accorded a certain experimentally controlled input—certain patterns of irradiation in assorted frequencies, for instance—and in the fullness of time the subject delivers as output a description of the three-dimensional external world and its history. The relation between the meager input and the torrential output is a relation that we are prompted to study for somewhat the same reasons that always prompted epistemology; namely, in order to see how evidence related to theory, and in what ways one's theory of nature transcends any available evidence.[15]

In this sense, psychology has a peculiar relationship to knowledge. But there is more. Again, I wish to emphasis what a profound shift is made by claiming scientific knowledge as the basis of epistemology.

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[14] This entry in the Stanford Encyclopedia of Philosophy nicely introduces Quine: Peter Hylton and Gary Kemp, "Willard Van Orman Quine," *Stanford Encyclopedia of Philosophy* (Stanford, CA: Stanford University, 2019), https://plato.stanford.edu/entries/quine/.
[15] Richard Foley, "Quine and Naturalized Epistemology," *Midwest Studies in Philosophy* 19 (1994): 245–260, https://doi.org/10.1111/j.1475-4975.1994.tb00288.x.

The great schools of epistemology gathered around Descartes or Plato or Locke or Kant all base their claim on the strength of philosophical inquiry. But the psychologist claims to "science," a supposed disinterested and objective understanding of the world. A philosopher may have a "belief," while science has certain objective knowledge.[16]

THE PROBLEM PRESENTED FOR THEOLOGICAL INQUIRY

This presents an interesting problem for the theologian looking at psychology. Theology has moved to a subdomain of philosophy (at best) among the broader academic world, and can argue at best for "faith," a private arena of opinion which may solace one but has no purchase in the "public square." This is in contrast to "science" which is a kind of knowledge that cannot be denied by any reasonable human being. In fact, to merely charge someone as rejecting science is sufficient to end the argument.

And so, from a "respectable" position, my undertaking here seems a fool's errand, or at something centuries out-of-date. But I do not believe that it is true. As we will see, there is a fundamental difficulty which lies at the heart of this sure objective knowledge. In fact, it is by examining the peculiar nature of our senses—as our senses are understood by rational scientific inquiry—that makes the entire edifice of self-attesting science suspect.

The rhetorical trick of asserting "science" is in fact that: a rhetorical move, but neither an argument nor is it evidence. It is just an assertion.

But as we shall see, psychology's claim to knowledge is far from simple or certain. Its claim to scientific certainty is undercut by that same science which gives rise to its claims. Moreover, the questions of knowledge cannot be resolved with resort to philosophy and theology.

In summary: the work of senses does not give us a reliable *basis* upon which

[16] This is a bit of a simplification. Contemporary philosophers of science, mind, knowledge, etc., interact extensively with scientific inquiry and work out the implications of what has been ascertained. In this sense, they are operating with much better information than a philosopher such as Locke who simply had no idea how the eye functioned at a physiological level.

to be certain about the world. I am not saying there is some defect in our senses; rather, the sensory apparatus is not self-authenticating. We have no reason to trust our senses *if the only ground* of that trust is the senses, themselves (and this becomes quite strange when we realize that what we know about our senses comes from our senses).

If we are to ground a belief in the reliability of our senses and the reality of the objective world, we will not find an adequate ground in the production of neurotransmitters (and the production of neurotransmitters is all our senses do).

THE OVERALL PROJECT

While we will begin in this essay with a consideration of our senses and the production of sense impressions; but that is not the totality of our knowledge. To fully understand the production of knowledge, we will need to carve up the question of knowledge into a series of issues.

There is the initial question of how do we apprehend the environment? The information from the outside must be brought through apparatus of our senses to the creation of the sense impressions. The nomenclature herein will be used with less than the precision of professional philosophical discourse; but such is not needed for our ends. When I refer to "apparatus" I mean the physiological structures which respond to the environment, and then result in the processing of a cognizable unit. Additional questions will arise after we consider the bare sensory impression: questions of meaning of what we have seen; questions of mind and brain.

Also, psychological knowledge claims more than just a knowledge of objects in the environment, it seeks to understand the contents of another human consciousness.

My goal will not be to provide a final answer to these issues (which are matters of specialized concerned at each level of analysis), but rather a theological view of such matters. The hope here is to create a framework by which one can consider psychological claims while maintaining one's theological perspective. And even at

that level, I do not claim to have seen into all issues fully. Rather, I understand this work as opening up field for consideration and development. And so, if any find the matters raised herein underdeveloped, it is a charge to which I readily admit.

WHAT DO WE MEAN BY "FACTS"?

By claiming to be a science and having a certainty of knowledge, psychology claims to possess facts about the world, and also to propose connections and organizing theories concern the world based upon those facts. The manner in which these allegedly discrete points of information, bytes or data (or whatever other term best suits the occasion), are organized determines the nature of the "meaning" claimed.

I propose a general definition of "meaning" as the relationship of some part to some whole. In the context of the Bible, Jesus' death "means" the redemption of the elect. In the context of Roman imperial history, it "means" something respecting the expression of Roman power in its territories. Indeed, Jesus' death has been found to "mean" any number of things.

The facts which we will organize are often obtained by means of observation. Sense data is obtained and categorized. Through a process of laborious induction and repeated observations, certain patterns are perceived, such as rain only falls when there are clouds in the sky; or, my skin feels warmer when the sun shines on it.[17]

A theory of some sort is proposed which explains "why" rain is tied to clouds or sunlight is tied to heat. That proposal is then tested. If the proposal after testing continues to make-sense, we have an arrangement of information which we call "science."[18]

[17] This reliance upon "observation" lies at the foundation of modern science, although its basic grounding is in Aristotle according to Boyd and Bogen: "Reasoning from observations has been important to scientific practice at least since the time of Aristotle, who mentions a number of sources of observational evidence including animal dissection (Aristotle(a), 763a/30–b/15; Aristotle(b), 511b/20–25)," but the modern version of this process is commonly attributed to Francis Bacon in the first instance. Boyd and Bogen, "Theory and Observation in Science." However, this emphasis upon observation was a hallmark of Bacon's contemporary Tycho Brahe. Reiss and Sprenger, "Scientific Objectivity."

[18] I have heard it said that science is a mnemonic device: it is simply a collection of recollections;

Without question, psychology, like all science, rests upon an essentially empiricist foundation. Empiricism can be described as follows:

> In philosophy generally, empiricism is a theory of knowledge emphasizing the role of experience. In the philosophy of science, empiricism is a theory of knowledge which emphasizes those aspects of scientific knowledge that are closely related to experience, especially as formed through deliberate experimental arrangements. It is a fundamental requirement of scientific method that all hypotheses and theories must be tested against observations of the natural world, rather than resting solely on a priori reasoning, intuition, or revelation. Hence, science is considered to be methodologically empirical in nature.[19]

While there are variations among particular schools and particular psychologists (for instance, someone like Jung strays rather far afield from this narrower understanding of "science"), unstated givens for the work run along the lines laid down by Locke and Hume. The world is understood on the basis of induction, generated from sense data. A conclusion is then confirmed by the "scientific method."[20]

The foundation of this whole process is the certainty that our sensory apparatus provides us a sure access the world. Science is built upon the bedrock of this sense data. Locke, who provides us with the philosophical starting point of empiricism takes the sense data as the given for his analysis:

> My purpose, therefore, is to enquire into the origin, certainty, and extent of human knowledge, and also into the grounds and degrees of belief, opinion, and assent. I shan't involve myself with the biological aspects of the mind. For example, I shan't wrestle with the question of what alterations of our bodies lead to our having sensation through our sense-organs or to our having any ideas in our understandings.

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when I saw this, I next saw that.

[19] McGill University, "Empiricism," https://www.cs.mcgill.ca/~rwest/wikispeedia/wpcd/wp/e/Empiricism.htm.

[20] There is a great deal to be said by the methodology of science; but at this point a general understanding will suffice.

> Challenging and entertaining as these questions may be, I shall bypass them because they aren't relevant to my project. All we need for my purposes is to consider the human ability to *think*.[21]

David Hume furthers this sentiment as follows:

> In short, all the materials of thinking are derived either from our outward or inward sentiment: The mixture and composition of these belongs alone to the mind and will. Or, to express myself in philosophical language, all our ideas or more feeble perceptions are copies of our impressions or more lively ones.[22]

It is the common accessibility of this sense data to all persons which provides a basis for taking this information as "objective."[23]

It is at this point of sense data that the agnostic and the atheist reject the notion of God as at best an inference to explain the relationship between various facts and thus as bad science. A claim to knowledge of God is dismissed as 'faith'—a sort of lesser knowledge. It is the inability to gain direct knowledge of God's person *through our senses* in the same way that I gain knowledge of rabbits and rocks that makes God a disputable proposition. This argument lies at the heart of the *Kitzmiller* decision above: since I can't probe God the way I probe a sea cucumber, God is not "real" or least not objectively knowable.[24]

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[21] John Locke, *An Essay Concerning Human Understanding* (New York: Penguin Books, 1997), 55.
[22] David Hume, *A Treatise of Human Nature* (London, UK: Penguin Classics, 1986), Kindle edition, part I.
[23] Reiss and Sprenger, "Scientific Objectivity": "Humans experience the world from a perspective. The contents of an individual's experiences vary greatly with his perspective, which is affected by his personal situation, and the details of his perceptual apparatus, language and culture. While the experiences vary, there seems to be something that remains constant. The appearance of a tree will change as one approaches it but—according to common sense and most philosophers—the tree itself doesn't. A room may feel hot or cold for different persons, but its temperature is independent of their experiences. The object in front of me does not disappear just because the lights are turned off."
[24] The question of the knowledge of God is far more complicated than is described here. However, the basic theme of all such "you can't prove God" arguments revolves around the nature of the empirical evidence. And even where such empirical evidence is offered (say the Resurrection), the argument is that the empirical evidence is insufficient. See, e.g., these posts on Twitter from Steven Pinker and Michael Schermer: https://twitter.com/sapinker/status/1515912313936752641, April 17, 2022.

And so, at the level of sensory perception we have a claim to certain knowledge and a basis upon which we (humans) reject the existence of God.[25] In *God, Revelation, and Authority,* Carl Henry further explains this development:

> The new empiricism shaped by modern science departed extensively from these earlier views. No longer could the empirical approach be considered merely ancillary or preliminary to a distillation of truth by philosophical demonstration; it now became essential and central to the establishment of truth. Moreover, it gained the indispensable role of experimentally validating and confirming rational deductions, and stressed experiences available to all people. Even after such validation has occurred, the decisive importance of the empirical requires that the resultant hypotheses or rational explanations be considered tentative rather than final. The special interest of empiricism, moreover, is to identify events for the sake of the prediction and control of perceptual experience, rather than to render them comprehensively intelligible in relation to metaphysical reality (cf. Edwin A. Burtt, *Types of Religious Philosophy*, pp. 197 ff.).[26]

Psychology, laying claim to domain expertise at this very point, thus raises some profoundly theological considerations which we pass by at our peril.[27]

THE PHYSIOLOGY OF SENSORY PERCEPTION

Our naïve understanding of sight may run along the lines of an analogy to a film camera. Film works because certain substances undergo an effectively permanent

[25] This argument goes back, at least to Hume, in its current form: "It is evident, that all reasonings from causes or effects terminate in conclusions, concerning matter of fact; that is, concerning the existence of objects or of their qualities. It is also evident, that the idea, of existence is nothing different from the idea of any object, and that when after the simple conception of any thing we would conceive it as existent, we in reality make no addition to or alteration on our first idea. Thus when we affirm, that God is existent, we simply form the idea of such a being, as he is represented to us; nor is the existence, which we attribute to him, conceived by a particular idea, which we join to the idea of his other qualities, and can again separate and distinguish from them." David Hume, *A Treatise of Human Nature* (London, UK: Penguin Classics, 1986), Kindle edition, part I.

[26] Henry, *God, Revelation, and Authority,* vol. 1, 78–79.

[27] The knowledge of God on the basis of inference, or on the basis of Plantinga's "Reformed Epistemology" are noted here to exist; but will not be considered at this point.

chemical response based upon exposure to light:

> The imaging layers contain sub-micron sized grains of silver-halide crystals that act as the photon detectors. These crystals are the heart of photographic film. They undergo a photochemical reaction when they are exposed to various forms of electromagnetic radiation—light. In addition to visible light, the silver-halide grains can be sensitized to infrared radiation.[28]

The pattern on the film forms an analog to the pattern of light which strikes the film. Light strikes an object, is bounced from the object to the film, and on the film it makes a pattern which corresponds to the pattern and to the color (if color film) of the original. To use a tangible analogy, film works like a seal pressed into wax: one substance repeats the pattern in another substance.

The intuitive understanding of sight, and certainly an earlier understanding of sight, was that the eye simply bears the impress of the world around it. However, a better analogy to understand sight is that it functions like digital photograph. There is in fact a correspondence between the perception and the world, but that correspondence is by means of a fundamental transformation. Texas Tech University provides a useful description of the functionality of digital photography:

> The CCD [charge-coupled device] is a collection of tiny light-sensitive diodes, which convert photons (light) into electrons (electrical charge). These diodes are called photosites. In a nutshell, photons are converted to electron by the photosite and the electron is converted to voltage. Then, these analog forms (voltage) are digitized into pixels within the supporting camera circuitry before downloading to memory. [29]

The importance here is that the original information is transformed from one form into a completely different structure. The pattern of light registered by the

[28] Charles Woodworth, "How Photographic Film Works: Inside a Roll of Film," *HowStuff Works,* https://electronics.howstuffworks.com/film3.htm.
[29] JongPil Cheon, "Basic Photography Using a Digital Camera," Texas Tech University's College of Education, http://edit.educ.ttu.edu/site/jcheon/manual/Digital_Photography.pdf.

diodes is transformed in a collection of numbers: the information is digitized. The pattern created by the original impress of the light is gone having been translated into an entirely new (although corresponding) form of information.

This is essentially the mechanism by which our senses function: information from the environment is registered and then translated into a new format. A detailed discussion of the physiology of sight would exceed our present needs. However, the general outline of the procedure will be of help. First, there is the matter of bottom-up processing. This is the input of information from the environment. When light has passed through the lens of the eye, it lands on the retina:

> The retina is a thin, delicate, transparent sheet of tissue derived from neuroectoderm. It comprises the sensory neurons that begin the visual pathway. The neural retina (neuroretina) is divided into nine layers: layer of inner and outer segments of the photoreceptors (rods and cones), external limiting membrane, outer nuclear layer, outer plexiform layer, inner nuclear layer, inner plexiform layer, ganglion cell layer, nerve fiber layer, and internal limiting membrane....Light must traverse these many layers before initiating signal transduction in the rods and cones.[30]

If we consider this a bit more, we discover: "First is the fact that photons are discrete and are absorbed entirely, at which point they disappear."[31] How exactly does the photon, a particle of light, "disappear"? An article from Duke University's Department of Physics explains the process:

> A single photon can interact with a long photosensitive molecule called retinal and quantum mechanics says that there is a certain quantum amplitude (a complex number whose length squared determines the probability of an event) for the photon to be absorbed, in which case the molecule changes it shape (called

[30] Piper M. Treuting, Rachel Wong, Daniel C. Tu, Isabella Phan, "Special Senses: Eye," in *Comparative Anatomy and Histology,* eds. Piper M. Treuting, Suzanne M. Dintzis (Cambridge, MA: Academic Press, 2012), p. 395.
[31] "Photons Striking the Retina," accessed March 10, 2022, https://webhome.phy.duke.edu/~hsg/264L/images/photons-on-retina.html.

> "photoisomerization"), which in turn triggers a powerful chemical amplification mechanism that makes the brain eventually aware of the photon being absorbed.[32]

The photosensitive cells are known as rods and cones:

> The retina contains two types of photoreceptors, rods and cones. The rods are more numerous, some 120 million, and are more sensitive than the cones. However, they are not sensitive to color. The 6 to 7 million cones provide the eye's color sensitivity and they are much more concentrated in the central yellow spot known as the macula. In the center of that region is the " fovea centralis ", a 0.3 mm diameter rod-free area with very thin, densely packed cones.[33]

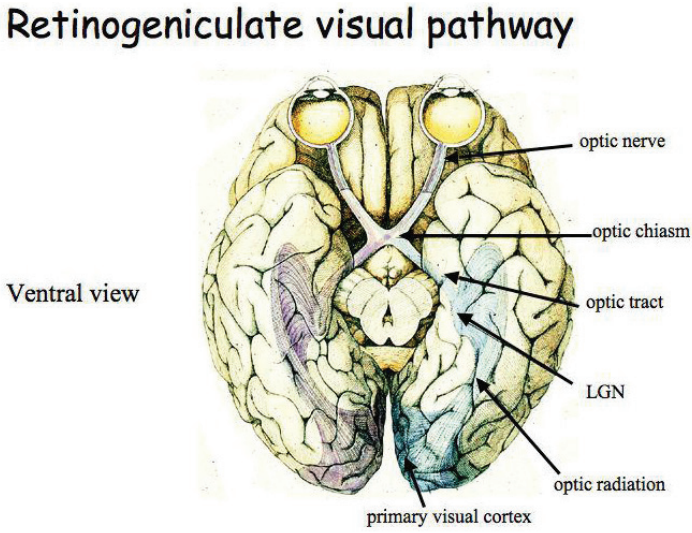
These photosensitive rods and cones are neurons. A primary function of a neuron is to receive a message and/or send a message, a signal. When then rod or cones is struck a photon it immediately passes on that information in a manner "just like any other neurons."[34] Thus, information is transferred by means of neurotransmitters. But the rods and cones are not the only type of cells on the retina. There is an interaction among the various cells to convey information. While you do not need to fully understand the mechanics, even a glimpse of the complexity at this space may help to understand all that follows:

> The dichotomy between ON and OFF responses is a central one in the early stages of vision. About half of the cells in the early visual system respond to light by increasing their rate of firing and half by decreasing it. One may imagine the situation as being a push-pull one. Retinal ganglion cells have fairly restricted rates of firing. Their operating range is from around 0 to around 1,000 Hz. The cells that are inhibited by light (OFF cells) tend to have a higher level of spontaneous activity in the dark. They fire steadily even in the absence

[32] "Mammalia retinas can respond to single photons," Duke University's Department of Physics, http://webhome.phy.duke.edu/~hsg/264L/images/photons-on-retina.html.
[33] Carl R. Nave, "Rods and Cones," Georgia State University's Department of Physics and Astronomy, http://hyperphysics.phy-astr.gsu.edu/hbase/vision/rodcone.html.
[34] Richard Masland, "Primary Visual Coding," Harvard University's Department of Neurobiology and Ophthalmology, November 2, 2005, https://www.hms.harvard.edu/bss/neuro/bornlab/nb204/papers2006/Masland_Lecture2_handout.doc.

> of a stimulus. This means that they have a working range at "negative" rates of firing--rates below their resting rate. One interpretation is that the overall range of signaling is thus expanded by having cells that work in two directions. Another way to think about it is to consider the situation at an edge between a light and a dark zone. What the visual system really cares about is transitions between light and dark. Uniform areas of illumination carry little information; it is the points of change where information if contained. If one has a light-dark edge, is the information contained in the lightness or the darkness? It's a glass that might be half empty or half full. Information is contained in both lightness and darkness and the visual system respects each equally.[35]

The information generated by means of the various combinations of cells on the retina interacting with the light send a series of messages down the optic nerve and to the thalamus, in particular to the Lateral Geniculate Nucleus, commonly referred to as the LGN. From there, information will eventually make its way to the visual cortex at the back of the brain. A visual representation of the processing channel looks like this:[36]



[35] Masland, "Primary Visual Coding."
[36] David Heeger, "Perception Lecture Notes: LGN and V1," New York University's Department of Psychology, 2006, https://www.cns.nyu.edu/~david/courses/perception/lecturenotes/V1/lgn-V1.html.

The information processed by the LGN then is sent back to the visual cortex where it is processed as "sight." Now questions about "who" is seeing this, or how anything is "seen" will wait until a later essay. But this stage in our perception is not as "bottom-up processing."

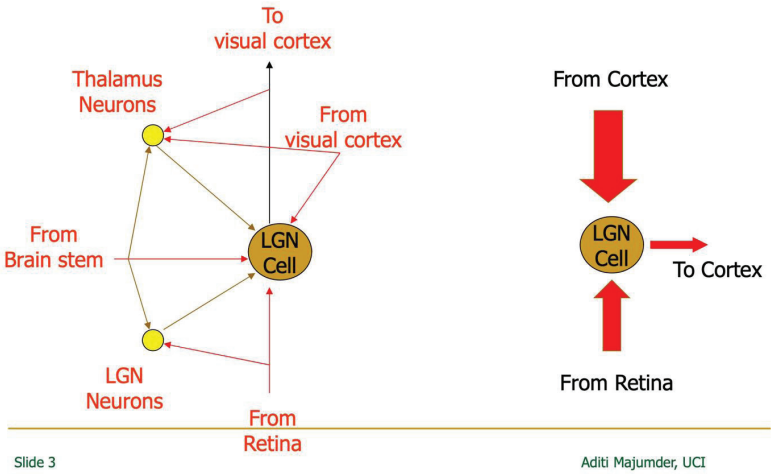
"Bottom-up processing" is the reception of some information from our environment which is observed by our senses by means of some sort of neurological response (a photon hits the retina, a sound wave hits the ear drum, and so one). The thing which is in the environment sets off a neurological cascade. One neuron informs another neuron and so on of the fact that a photon struck a particular place on the retina. The photon is not processed by the brain. The photon is no different than flipping a switch to turn on a light or a fan. The initial reception of the environment is turned into an electro-chemical message. There is a complete translation of the environment into a format which can be processed by our brain.

We have considered a single aspect of our sensory perception: what we know is not the thing itself, but rather a translation of photons into a message conveyed by neurotransmitters. At this point, the question will become more complex—and in a strange way, less "real."

TOP-DOWN PROCESSING

Now something quite interesting happens at this point. The LGN does not merely receive information from the retina. Information also comes in from other parts of the brain. A schematic of the information appears as follows:[37]

[37] Aditi Majumder, "Lateral Geniculate Nucleus," University of California, Irvine's School of Information and Computer Sciences, https://www.ics.uci.edu/~majumder/vispercep/chap3_LGN_highvision.pdf.



What I want you to see from this image is that information concerning the object observed does not come solely from the light striking the retina. There is information *coming from the visual cortex* as well as the brain stem:

> The axons of ganglion cells exit the retina to form the optic nerve, which travels to two places: the thalamus (specifically, the lateral geniculate nucleus, or LGN) and the superior colliculus. The LGN is the main relay for visual information from the retina to reach the cortex. Despite this, the retina only makes up about 20% of all inputs to the LGN, with the rest coming from the brainstem and the cortex. So more than simply acting as a basic relay for visual input from retina to cortex, the LGN is actually the first part of our visual pathway that can be modified by mental states.[38]

The creation of the image which is perceived is not simply a matter of taking in data from a photosensor, as in a digital photograph. Yes, there is the analogy to the digital photograph, but there is something more. Your brain does not merely translate photons into an array of neurotransmitters, it also constructs the image in something called "top-down processing."

Below is a more technical explanation of what takes places in top-down processing. In in the simplest possible terms, our perceptions are not merely an

[38] Alan Woodruff, "Visual Perception," The University of Queensland's Brain Institute, https://qbi.uq.edu.au/brain/brain-functions/visual-perception.

imprint of the world (like film) nor is our perception simply a digital version of the world (like a digital camera). Rather, our perception is partially the result of information from the outside, but it is also the result of a construction imposed by brain based upon information outside the data from our senses: this information could be prior experience (for instance). What you need to understand is that our perception of the world is a matter of construction based upon current and prior experience of the world. Here is the more technical summary:

> The functional properties of cortical neurons are not fixed. Rather, they can be thought of as adaptive processors, changing their function according to the behavioral context, and their responses reflect the demands of the perceptual task being performed. Cortical neurons are subject to top-down influences of attention, expectation and perceptual task. "Top-down" refers to cognitive influences and higher order representations that impinge upon earlier steps in information processing. Such influences represent a reversal of the central dogma of sensory information processing, which is based on feedforward connections along a hierarchy of cortical areas representing progressively more complex aspects of the visual scene. But superimposed on the feedforward pathways there are reentrant or feedback pathways that convey higher order information to antecedent cortical areas. The top-down signal carries a rich amount of information that facilitates the interpretation of the visual scene and that enables the visual system to build a stable representation of the objects within it, despite rapid and continuous eye movements. It facilitates our ability to segment the complex arrangement of multiple objects and backgrounds in the visual scene. In addition, the top-down signal plays a role in the encoding and recall of learned information. The resulting feedforward signals carried by neurons convey different meanings about the same visual scene according to the behavioral context. This idea is in stark contrast with the classical notion of a hierarchy of visual cortical areas—where information is conveyed in a feedforward fashion to progressively higher levels in the hierarchy, beginning with the analysis of simple attributes such as contrast and orientation, and leading to more complex functional properties from one stage to the next—and implies that vision is an active process. As we analyze visual scenes we

> set up countercurrent streams of processing, with the resulting percept reflecting the set of functional states of all the areas in the visual cortical hierarchy. In this review we consider the receptive field properties that are subject to top-down influences, the nature of the information that is conveyed by reentrant pathways, and how the information carried by neurons depends on behavioral context. Over longer time periods receptive fields can change to accommodate alterations in visual experience. These lines of evidence point towards an evolving view of the nature of the receptive field, which includes contextual influences and emphasizes its dynamic nature, with neurons taking on different properties in response to experience and expectation.[39]

What this means is that what we experience as sense perception is not simply looking out at the world and seeing what is there.

Over the course of time, we take in information from the world about us through our sense organs. That information is correlated in various was to build up a useful understanding of the world. This aspect of our understanding was developed most famously by Jean Piaget. It is not necessary to conclude that Piaget's explanation of the development of objects, space, and causality in the child are correct at all points to find the overall thrust of his understanding to be correct.

In the Introduction to his *The Construction of Reality in the Child,* Piaget explains the development during the first two years of life for a child:

> At first directly assimilating the external environment of his own activity, later, in order to extend this assimilation, forms an increasing number of schemata which are both more mobile and better able to coordinate. Side by side with this progressive involvement of the assimilatory schemata runs the continuous elaboration of the external universe, in other words, the convergent development of explanatoryfunction.[40]

[39] Charles D. Gilbert and Wu. Li, "Top-down Influences on Visual Processing," April 18, 2018, *Nature Reviews Neuroscience,* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3864796/.
[40] Jean Piaget, *The Construction of Reality in the Child*, trans. Margaret Cook (New York: Basic Books, 1954), xi, emphasis added.

That is, the child develops mechanisms to understand the world about him. It is not that the child opens his eyes and sees a world of permanent objects situated in space and time operating upon one another by means of cause and effect. Instead, those concepts of external objects situated in space and time interacting by means of cause and effect are schemata the child develops and uses to understand the world.

It is perhaps interesting to note that Kant held that the concepts of space and time are impositions of our mind and that Hume held that causality was also an imposition upon reality by our mind. But a further analysis of the philosophers is beyond our instant concern.

What does matter is that our understanding of the world around us is not simply seeing "what is there." Instead, while we begin with information from the world around us, we are also constructing that world by means of schemata. The way in which such schemata function was illustrated by use finding an image from an obscure original:

> To illustrate the basic idea of why top-down processing is needed, researchers have created binarized photographs. In such photographs, gray-scale pixels are replaced with white if their brightness value is above a chosen threshold, or replaced with black if it is below this value. Because binarized images are highly degraded, pure bottom-up processes typically cannot organize them correctly into their constituent parts, and often one needs to use previously acquired knowledge about objects to identify the objects in them.[41]

The precise nature of this top-down processing is a matter of current research. The particulars of this procedure are not necessary for our purposes. What must be known is that the images we "see" are both based upon the information currently received from the environment and also the information which is constructed by use of pre-existing information.

[41] Giorgio Giannis and Stephen M. Klosslyn, "Multiple Mechanisms of Top Down Processing in Vision" in *Representation and Brain,* ed. Shintaro Funahashi (Tokyo, JP: Springer Tokyo, 2007), 24.

A QUICK NOTE ON PRE-EXISTING INFORMATION

While the schemata applied to construct the imagery we experience is pre-existing, we should also note that even the basic information obtained from the environment is subject to pre-existing information constraints.

A receptor neuron fires on my retina, that information is then passed back to my optic nerve. Some bit of data is processed as a "color" or a "shape." The colors and shapes which could be constructed must already be existing there in the optic nerve (wherever the actual processing takes places for color and shape). The color is not in the light, the color is in my processing of the light. The blue I see in the sky as I sit in my backyard and write is a construction of my brain. That blue must pre-exist the response of a cone on my retina. The firing of the cone merely says process "blue." But that "blue" is not out in nature.

This may sound overly "philosophic" or even untrue at present. But by the time we conclude our understanding of sensory perception, you will see the utter strangeness of this problem.

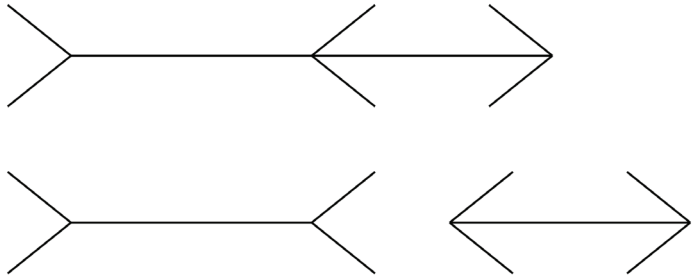
PROOF OF OUR OBSERVATIONS BEING CONSTRUCTION

If you want proof of the extent to which this imposition upon the world is a manufacture of our sensory system, consider the nature of optical illusions.

I will start with a basic example: seeing small things as being at a distance is a construction. My anthropology teacher at UCLA had done his field work with pygmies in an African rain forest. He said that when a pygmy was taken from the forest to the edge of the plain, the man would see buffalo at a great distance. Only the pygmy who had spent his entire life never seeing further than say 30 feet away did not see distance: he saw size. The buffalo were not small because they were far away; they were small because they were small.

The distance is not in what we see but in what we know about what see. We have a scheme for distance; the pygmy had none and could not see that distance. It was not a failure of intelligence; it was a failure prior experience.

It has been discovered that the following illusion (among others) is the product of one's prior experience. Let us consider the Müller-Lyer illusion:



For those reading this essay, the lines on the left (with the flared fins, like the tail of an arrow) will appear longer than the lines on the right (with the pointed fins which appear like an arrowhead). And now to the research:

> For decades, vision researchers assumed that the illusion told us something fundamental about human vision. When they showed the illusion to people with normal vision, they were convinced that the line with the inward-pointing arrows would seem longer than the line with outward-pointing arrows. That assumption wasn't really tested before the 1960s, because until then almost everyone who had seen the illusion was WEIRD—an acronym that cultural psychologists have coined for people from Western, Educated, Industrialized, Rich, and Democratic societies. In the early 1960s, three researchers remedied that oversight when they showed the illusion to two thousand people from fifteen different cultural groups. The illusion deceived the first few groups. Adults living in Evanston, Illinois, perceived Line B to be on average 20 percent longer than Line A, while students at nearby Northwestern University and white adults in South Africa similarly believed that Line B was between 13 percent and 15 percent longer than Line A. Then the researchers journeyed farther afield, testing people from several African tribes. Bushmen from southern Africa failed to show the illusion at all, perceiving the lines as almost identical in length. Small samples of Suku tribespeople from northern Angola and Bete tribespeople from the Ivory Coast also failed to show

> the illusion, or saw Line B as only very slightly longer than Line A. Müller-Lyer's eponymous illusion had deceived thousands of people from WEIRD societies for decades, but it wasn't universal.[42]

Yet, later research offered a contradictory reading of the evidence. A researcher at Macquarie University when using a computer designed to mimic the human eye was also tricked by the illusion.[43] This may mean (1) the computer programmer being WEIRD found his bias in the program he created, or (2) people from different places have different physiological functions, or (3) some other process has led to this illusion. While I tend toward answer (1), the fact remains that the illusion has been caused by top-down processing creating the illusion.

Before we leave this matter of top-down processing, I wish for you to be clear on the extent to which our basic perception of the world is a matter of construction: our brain does not passively record the world, it actively constructs the world as we experience it.

There are a number of experiments which have shown that the way food and drink tastes can depend upon a number of factors beyond the food itself. An article in *Wired* magazine cites several studies which conclude with this observation:

> And this is why the ambience of a restaurant matters. All those rituals of the table are not mere routines. Instead, they help us make sense of the incomplete information coming from the tongue. For instance, when we eat a meal in a fancy place, full of elaborate place settings, fine porcelain and waiters wearing tuxedos, the food is going to taste different than if we ate the same food in a cheap diner. (This helps explain why people spend more money when restaurants play classical music instead of pop tunes.) Because the music matters, but so does everything else. The tongue is easy to dupe.[44]

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[42] Adam Alter, "Are These Lines the Same Height? Your Answer Depends on Where You're From," *Popular Science,* March 21, 2013, https://www.popsci.com/science/article/2013-03/are-these-walls-the-same-size-your-answer-depends-on-where-youre-from/.
[43] Charles Choi, "Optical Illusions Can Trick Computers, Too," NBC News, March, 20, 2013, https://www.nbcnews.com/news/all/optical-illusions-can-trick-computers-too-flna1C8982370.
[44] Jonah Lerner, "Does Music Change The Taste Of Wine?" *Wired,* November 2, 2011, https://www.wired.com/2011/11/does-music-make-wine-taste-better/.

I wish to stand back and defend the tongue. The tongue has not been tricked in the least: it has done exactly what it was supposed to do. But the tongue is not the last word on taste. The tongue provides some of the information we process as the "taste" of food; but just like our sight, the taste is a construction which uses a limited amount of raw materials from the environment.

Here is the bottom line: the world we experience is not exactly the world as it exists. First, a photon, a movement of air, a chemical wafted to our nose, a food on our tongue, triggers a response in a nerve. That nerve then responds to the environment and sends a message to our brain. Our brain takes that information as well as other information which was not present in that particular response and creates some information which we experience as a sight or sound or taste or tactical quality or scent. That thing we experience is not what is out in the world. What we experience is representation built by our brain.[45] But we are not nearly done with the problems of our perception of the world.

PSYCHEDELIC DRUGS

In 1938, a Swiss chemist named Albert Hoffman began experimenting with a chemical isolated in fungus which grew on rye and was known to cause strange effects on people eating contaminated rye. This fungus is known as ergot. The chemical which affected the circulatory system was isolated. Thereafter, Hoffman developed a means of synthetically producing this chemical, known as "lysergic acid." Hoffman then began to experiment:

[45] At every step of this discussion, I am plagued by the knowledge that each element of this discussion entails an impossible number of caveats, qualifications, and claims by every sort of theorist, scientist, and philosopher. Just to keep you partially informed of where the philosophical argument stands at this point, I note some things that are old are still new: "Some philosophers call them Cartesians think that if a perceptual experience itself justifies a belief, then that belief must be about the character of that perceptual experience (Bonjour 1999). It would be a belief about the internal world. This view is often combined with the view that beliefs about the external world are justified by inferences from such beliefs about the internal world. The combined view is known as classical foundationalism. Other philosophers think that if a perceptual experience itself justifies a belief, then that belief might be about the ostensible bit of reality presented in the experience. It would be a belief about the external world the apparently seen, heard, felt, etc. portion of one's immediate environment." Berit Brogaard and Elijah Chudnoff, "Consciousness and Knowledge," in *The Oxford Handbook of the Philosophy of Consciousness,* ed. Uriah Kriegel, (Oxford, UK: Oxford University Press, 2020), 590.

> Using this method, he recreated ergot's active ingredients as well as novel but similar compounds that, based on the potency of the ergot compounds, could reasonably be expected to have medical uses.
>
> In a sense Hofmann was playing God, combining lysergic acid with various other organic molecules just to see what happened. He created 24 of these lysergic acid combinations. Then he created the 25th, reacting lysergic acid with diethylamine, a derivative of ammonia. The compound was abbreviated as LSD-25 for the purposes of laboratory testing.[46]

In a self-experiment, Hoffman ingested the chemical he created:

> Hofmann didn't discover the drug's hallucinogenic effects until 1943 when he accidentally ingested a small amount and perceived "extraordinary shapes with intense, kaleidoscopic play of colors."
>
> Three days later, on April 19, 1943, he took a larger dose of the drug. As Hofmann rode home from work on his bicycle—World War II restrictions made automobile travel off-limits—he experienced the world's first intentional acid trip.[47]

In his first-person account of what happened, *My Problem Child*, Hoffman recounts the effects of this self-experiment as follows:

> The dizziness and sensation of fainting became so strong at times that I could no longer hold myself erect, and had to lie down on a sofa. My surroundings had now transformed themselves in more terrifying ways. Everything in the room spun around, and the familiar objects and pieces of furniture assumed grotesque, threatening forms. They were in continuous motion, animated, as if driven by an inner restlessness. The lady next door, whom I scarcely recognized, brought me milk—in the course of the evening I drank more than two liters.

[46] Tom Shroder, "The Accidental, Psychedelic Discovery of LSD," The *Atlantic*, September 9, 2014, https://www.theatlantic.com/health/archive/2014/09/the-accidental-discovery-of-lsd/379564/.
[47] History.com Editors, "LSD." *The History Channel,* August 21, 2018, https://www.history.com/topics/crime/history-of-lsd.

> She was no longer Mrs. R., but rather a malevolent, insidious witch with a colored mask.
>
> Even worse than these demonic transformations of the outer world, were the alterations that I perceived in myself, in my inner being. Every exertion of my will, every attempt to put an end to the disintegration of the outer world and the dissolution of my ego, seemed to be wasted effort. A demon had invaded me, had taken possession of my body, mind, and soul. I jumped up and screamed, trying to free myself from him, but then sank down again and lay helpless on the sofa. The substance, with which I had wanted to experiment, had vanquished me. It was the demon that scornfully triumphed over my will. I was seized by the dreadful fear of going insane. I was taken to another world, another place, another time. My body seemed to be without sensation, lifeless, strange. Was I dying? Was this the transition? At times I believed myself to be outside my body, and then perceived clearly, as an outside observer, the complete tragedy of my situation....[48]

While LSD-25 is perhaps the most "famous" of all psychedelic drugs, having been famous by Harvard psychologist Timothy Leary, it is certainly not the only psychedelic known to human beings. Various psychedelic drugs have been known to produce "mystical" experiences.[49] The English writer Aldus Huxley, having experimented with psychedelics (which were perfectly legal through much of the 20th century), wrote a provocative book entitled, *The Doors of Perception.* He took the title from an epigram of English poet William Blake, "If the doors

[48] Albert Hoffman, *LSD: My Problem Child,* trans. Jonathan Ott (Oxford, UK: Oxford University Press, 2013), https://www.cs.cmu.edu/~ehn/release/problem-child.html.

[49] Abigail Calder, "Mystical Encounters, with and without Drugs," *Psychedelic Science Review,* April 27, 2021, https://psychedelicreview.com/mystical-encounters-with-and-without-drugs/. Richard Miller also writes: "The notion that hallucinogenic drugs played a significant part in the development of religion has been extensively discussed, particularly since the middle of the twentieth century. Various ideas of this type have been collected into what has become known as the *entheogen* theory. The word *entheogen* is a neologism coined in 1979 by a group of ethnobotanists (those that study the relationship between people and plants). The literal meaning of entheogen is 'that which causes God to be within an individual' and might be considered as a more accurate and academic term for popular terms such as *hallucinogen* or *psychedelic* drug. By the term *entheogen* we understand the use of psychoactive substances for religious or spiritual reasons rather than for purely recreational purposes." Richard Miller, "Religion as a Product of Psychotropic Drug Use," The *Atlantic,* December 27, 2013, https://www.theatlantic.com/health/archive/2013/12/religion-as-a-product-of-psychotropic-drug-use/282484/.

of perception were cleansed everything would appear to man as it is, Infinite. For man has closed himself up, till he sees all things thro' narrow chinks of his cavern."[50] Huxley's thesis was that the effect of psychedelic drugs lay behind all "religious" or "mystic experience":

> Reflecting on my experience, I find myself agreeing with the eminent Cambridge philosopher, Dr. C. D. Broad, "that we should do well to consider much more seriously....[t]he function of the brain and nervous system is to protect us from being overwhelmed and confused by this mass of largely useless and irrelevant knowledge, by shutting out most of what we should otherwise perceive or remember at any moment, and leaving only that very small and special selection which is likely to be practically useful." According to such a theory, each one of us is potentially Mind at Large. But in so far as we are animals, our business is at all costs to survive. To make biological survival possible, Mind at Large has to be funneled through the reducing valve of the brain and nervous system. What comes out at the other end is a measly trickle of the kind of consciousness which will help us to stay alive on the surface of this Particular planet. To formulate and express the contents of this reduced awareness, man has invented and endlessly elaborated those symbol-systems and implicit philosophies which we call languages. Every individual is at once the beneficiary and the victim of the linguistic tradition into which he has been born—the beneficiary inasmuch as language gives access to the accumulated records of other people's experience, the victim in so far as it confirms him in the belief that reduced awareness is the only awareness and as it bedevils his sense of reality, so that he is all too apt to take his concepts for data, his words for actual things. That which, in the language of religion, is called "this world" is the universe of reduced awareness, expressed, and, as it were, petrified by language.[51]

I know Huxley's belief that psychedelic drugs stand behind the "experience" of something divine seems a little afield from the thesis of this essay, which is

[50] William Blake, *The Marriage of Heaven and Hell* (Project Gutenberg, 2014), https://www.gutenberg.org/files/45315/45315-h/45315-h.htm.
[51] Aldus Huxley, "The Doors of Perception," http://www.ignaciodarnaude.com/espiritualismo/Huxley,Doors%20of%20Perception.pdf, 6.

that sensory experience is insufficient to be self-authenticating. But there is a second-thesis in this essay, namely, that the thesis of sense experience being self-authenticating is a basis upon which we can deny God: I don't see God in the same way I see a rock, therefore, a rock is more real than God. If you can't kick it, it isn't real.[52]

My goal in this essay to bring you to understand that sense-experience can only be justified on the thesis of a guarantee of God. Huxley in a strange way is supportive of my thesis. The belief that God must be justified as a certain type of sense-experience arose in a particular historical context and was justified on the basis of certain presuppositions of that historical context. The Enlightenment understanding (to take the idea in a broad fashion), argues that we can merely "subtract" God from our understanding and we can see the world as it actually is. We can see things in motion, we can see things behaving in a regular manner ("laws of nature"). Since things act regularly, and since the only thing which is true is some-thing I can see, God is an unnecessary thesis: (1) I don't need an agent constantly tinkering; and (2) I don't see that agent anyway.

But this is actually a philosophy which contains various presuppositions. It is not actually "the way things are." James K.A. Smith summarizes an argument from Charles Taylor (in *A Secular Age*) on this point, nicely:

> (1) What pretends to be a "discovery" of the ways things are, the "obvious" unveiling of reality once we remove (subtract) myth and enchantment, is *in fact* a construction, a *creation*; in short, this wasn't just a subtraction project. (2) Baseline *moral* commitments stand behind CWS ["closed world structures": ideas which exclude the divine], specifically the coming-of-age metaphor of *adulthood*, having the courage to resist the comforting enchantments of childhood.

[52] In James Boswell's *Life of Samuel Johnson,* he records this incident: "After we came out of the church, we stood talking for some time together of Bishop Berkeley's ingenious sophistry to prove the nonexistence of matter, and that every thing in the universe is merely ideal. I observed, that though we are satisfied his doctrine is not true, it is impossible to refute it. I never shall forget the alacrity with which Johnson answered, striking his foot with mighty force against a large stone, till he rebounded from it – 'I refute it *thus*.'" James Bosewell, *Life of Samuel Johnson,* ed. David Womersley (London, England: Penguin Classics, 2008), Kindle Edition. See also: Douglas Lane Patey, "Johnson's Refutation of Berkeley: Kicking the Stone Again," *Journal of the History of Ideas* 47, no. 1 (January 1986): 139–145.

> In short to just "see" the closedness of the immanent frame is to be grown-up.[53]

Taylor explains this "move" as follows:

> [W]hat is being claimed is that some move is being passed off as simple discovery, which in fact is much more like a new construction; a change that involves also a new sense of our identity and our place in the world, with its implicit values, rather than simply registering observable reality.[54]

What Huxley's belief proves is that the secure sensation of a stable "Enlightenment" world is easily capable of being destabilized by merely a modification of top-down processing (which the psychedelic drug causes).[55] Those effects include:

> Perceptual effects occur along a dose-dependent range from subtle to drastic. The range of different perceptual effects includes perceptual intensification, distortion, illusion, mental imagery, elementary hallucination, and complex hallucination (Klüver, 1928; Kometer and Vollenweider, 2016; Preller and Vollenweider, 2016). Intensifications of color saturation, texture definition, contours, light intensity, sound intensity, timbre variation, and other perceptual characteristics are common (Kometer and Vollenweider, 2016; Kaelen et al., 2018). The external world is experienced as if in higher resolution, seemingly more crisp and detailed, often accompanied by a distinct sense of 'clarity' or 'freshness' in the environment (Hofmann, 1980; Huxley, 1991; Díaz, 2010; Kometer and Vollenweider, 2016). Sense of meaning in percepts is altered, e.g., 'Things around me had a new strange meaning for me' or 'Objects around me engaged me emotionally much more than usual' (Studerus et al., 2010).

[53] James K.A. Smith, *How (Not) to be Secular* (Grand Rapids, MI: William B. Eerdmans Publishing Company, 2014), 99.
[54] Charles Taylor, *A Secular Age* (Cambridge: Harvard University Press, 2007), 565.
[55] Sarit Pink-Hashkes, Iris van Rooij, and Johan Kwisthout, "Perception is in the Details: A Predictive Coding Account of the Psychedelic Phenomenon," *Cognitive Science Society,* 2017, https://cogsci.mindmodeling.org/2017/papers/0550/paper0550.pdf.

Perceptual distortions and illusions are extremely common, e.g., 'Things looked strange' or 'My sense of size and space was distorted' or 'Edges appeared warped' or 'I saw movement in things that weren't actually moving' (Dittrich, 1998; Muthukumaraswamy et al., 2013).[56]

To put it briefly, psychedelic drugs alter the mechanics of top-down processing.[57] From the perspective of the person experiencing a hallucination, the sensory data being subjectively understood is completely real. When I was a boy, my doctor treated my asthma with a drug named "Marax." An uncommon, but quite real, side effect of Marax is visual hallucination. I can tell you for a certainty, that the enormous flying ant with bright white wings terrified me. I can still vividly recall the sight of that "nonexistent" insect on the doorway to my bedroom. The only evidence I had of it not being real is my father calmly telling me there was no such thing there.

Before we move to the next topic of sensory perception, I want to summarize what we have determined. First, the common "objective" experience of us all is the result of not simply seeing "what is there," but rather the result of a complex process in the brain involving both information from the outside and a deliberate *construction* of that information into a form (a perception as opposed to a bare sensation). Second, those forms are affected by our prior history, including cultural exposure. Third, those forms can create things which cannot physically exist as proven by optical illusions and psychedelic drugs.

No one sees "what is there." We only see that which our brain constructs in response to neurotransmitters released as a response our neurons on a retina being exposed to photons and having those messages integrated and constructed on the basis of brain structure (which function can be fundamentally altered by drugs)

[56] Link R. Swanson, "Unifying Theories of Psychedelic Drug Effects," *Frontiers in Pharmacology* 9 (March 2018), https://doi.org/10.3389/fphar.2018.00172.
[57] "How Psychedelic Drug Psilocybin Works on Brain," *ScienceDaily,* https://www.sciencedaily.com/releases/2020/06/200605121512.htm; George Blackburne, "LSD and the Anarchic Brain," *The Psychedelic Review,* June 10, 2021, https://psychedelicreview.com/lsd-and-the-anarchic-brain/; Jose Alexandre Salerno, "Whole-Body Effects of Psychedelics – Part 1," *The Psychedelic Review,* June 15, 2021, https://psychedelicreview.com/whole-body-effects-of-psychedelics-part-1/; Jose Alexandre Salerno, "Whole-Body Effects of Psychedelics – Part 2," *The Psychedelic Review,* August 17, 2021, https://psychedelicreview.com/whole-body-effects-of-psychedelics-part-2-blood-and-immune-system/.

and prior experience.

I wish to further "problematize" the question of our sensory perception by means a further proof of the strangely arbitrary nature of our understanding: what happens when you "see sound."

SYNESTHESIA

When I turned 13, I very much wanted to play the piano. My parents were good enough to purchase a piano for me which they could barely afford. I spent entire days doing nothing but banging on the piano our den. What I didn't know was that the keys on the piano changing colors which waves of colored sound moving up and down the keyboard was an unusual experience. I will tell you that I saw colors moving through the keyboard as I played. Those colors were "there" every bit as much as the black and white of the keys.

And yet, you likely would not have seen any of these colors. Now, if I saw them, and if they were produced by the act of sound waves striking my ear drum and then being processed by brain, how are they not "real"? In what sense can you say that hearing a "sound" as the result of moving ear striking my eardrum is "real," but seeing a "color" is not "real."

Your sense organs are merely mechanisms to produce some combination of neurotransmitters. A photon here produces this combination, a sound wave there produces a different neurotransmitter combination, and messages are sent hither-and-yon to be received and processed.

But to this point, we intuitively think there is a reasonableness, a necessity in our perception. We assume that we "see" light because it is the nature of light to be seen. We hear sound because it is appropriate for movements of air to be "heard." Sounds are what air does; and color is what light does.

If you will recall, above, I said that color does not exist in the light but rather it exists in my brain. Color is something my brain does with a certain signal received by the optic nerve. Color is not in the light; it's in the brain.

An analogy will help here: If you have ever had the misfortune of installing a combination ceiling fan overhead light, you have my sympathy. It is a miserable task. But it is also a good analogy for what we need to understand about the senses. Near the door to the room, somewhere between 4 & 5 feet from the floor is a toggle switch which regulates the flow of electricity to the room. If the switch is "on" electricity will flow past the switch and to whatever device is attached to the wires.

When it comes to the overhead fan and light the electricity is distributed separately to the light and to the fan motor. Often additional switches are used to regulate electricity to the light and the motor, separately. If the main switch is "on" and the light switch is "on", the light will shine. If the motor switch is "on," the motor will turn the fan. If you turn off the light and leave on the motor, the fan will move, and no light will be generated. If you turn off the motor and turn on the light, you will have light and no fan.

The electricity is the same for both the light and the motor. The difference is not in the electricity but what the end of the wire is attached to. Just to drive this point home, because you will want it to be unstuck in a moment, I will mention a television commercial which asks the question, "How sure are you of your wiring job?" A woman comes into the kitchen and flips the light switch. Her husband has his hand in the garbage disposal. Will the light come on, or will he lose his hand? Same electricity, different result.

Your senses work the same way. The message sent from a rod on your retina does not by necessity need to have the message processed by your optic nerve. Those neurotransmitters could send a message to your olfactory nerve and you could "smell" with your eyes. Nonsense you say. But what if were to tell you this actually does happen—usually not retina to olfactory—but it does happen:

> Basically, when people experience synesthesia, they can hear colors, smell sounds, and even taste music. And, to add to the complexity, almost every combination of sensory information is possible with synesthesia. Here a few of its most common manifestations.
>
> - Grapheme-Color Synesthesia – Letters and numbers appear with

specific colors.

- Auditory-Tactile Synesthesia – Hearing a sound causes a bodily sensation.
- Chromesthesia – Certain sounds cause a person to see colors.
- Lexical-Gustatory Synesthesia – Hearing certain words triggers specific tastes.
- Mirror-Touch Synesthesia – A person feels (tactile) what another is experiencing.

Interestingly, synesthesia can happen with or without taking drugs.[58]

Since what we perceive is actually the construction of our brain, and since that construction is on the basis of electro-chemical messages, any sense neuron could be paired (theoretically) with any portion of the brain which processes the input of sense neurons.

Here is the bottom-line: there is no inherent correlation between photons and color or shape, between sound waves and sound. That color and light, those sounds, are constructions of the brain.

PERHAPS IT IS ALL A SIMULATION

In 2003 philosopher Nick Bostrom published a paper in *The Philosophical Quarterly* entitled, "Are We Living in a Computer Simulation?" which has generated an enormous amount of secondary literature[59] And while *The Matrix* reference can be understood readily enough, I wish to underscore a point which follows from the nature of empiricism as complete understanding of consciousness (the "scientism" thesis).

If the nature of consciousness is nothing more processing electrochemical information, then consciousness is replicable in a computer:

[58] Barbara E. Bauer, "Psychedelic Synesthesia: Smell That Tune. Intertwining of the senses creates some mind-blowing experiences," *The Pyschedelic Review,* March 22, 2021, https://psychedelicreview.com/psychedelic-synesthesia-smell-that-tune/.

[59] Nick Bostrom, "Are We Living in a Computer Simulation?", *The Philosophical Quarterly* 53, no. 211 (April 2003): 243–255.

> A common assumption in the philosophy of mind is that of substrate-independence. The idea is that mental states can supervene on any of a broad class of physical substrates. Provided a system implements the right sort of computational structures and processes, it can be associated with conscious experiences. It is not an essential property of consciousness that it is implemented on carbon-based biological neural networks inside a cranium: silicon-based processors in a computer could in principle do the trick too.[60]

Nothing in scientism can defeat such a thesis. Indeed, as argued by Fouad Khan in *Scientific American* in 2021, consciousness itself is evidence that we are living in a simulation:

Pretty much since the dawn of philosophy we have been asking the question: Why do we need consciousness? What purpose does it serve? Well, the purpose is easy to extrapolate once we concede the simulation hypothesis. Consciousness is an integrated (combining five senses) subjective interface between the self and the rest of the universe. The only reasonable explanation for its existence is that it is there to be an "experience." That's its primary raison d'être. Parts of it may or may not provide any kind of evolutionary advantage or other utility. But the sum total of it exists as an experience and hence must have the primary function of being an experience. An experience by itself as a whole is too energy-expensive and information-restrictive to have evolved as an evolutionary advantage. The simplest explanation for the existence of an experience or qualia is that it exists for the purpose of being an experience.[61]

And thus, not only does empiricism not rule out computer simulated consciousness, it is arguably even the most likely explanation for such. While the matter will be raised at further length below, it is evident that such an argument is *theological.* It answers a question well beyond the scope of anything which can seen or heard. It is an answer of ultimate meaning.

[60] Nick Bostrom, "Are We Living in a Computer Simulation?," 244.
[61] Fouad Khan, "Confirmed! We Live in a Simulation," *Scientific American,* April 1, 2021, https://www.scientificamerican.com/article/confirmed-we-live-in-a-simulation/.

DESCARTES DREAMS

Descartes raised the question about being fundamentally deceived by our senses, well before the computer simulation theory. In his *First Meditation,* he raised the possibility that all our understanding is no different than dreaming:

> Though this be true, I must nevertheless here consider that I am a man, and that, consequently, I am in the habit of sleeping, and representing to myself in dreams those same things, or even sometimes others less probable, which the insane think are presented to them in their waking moments. How often have I dreamt that I was in these familiar circumstances, that I was dressed, and occupied this place by the fire, when I was lying undressed in bed? At the present moment, however, I certainly look upon this paper with eyes wide awake; the head which I now move is not asleep; I extend this hand consciously and with express purpose, and I perceive it; the occurrences in sleep are not so distinct as all this. But I cannot forget that, at other times I have been deceived in sleep by similar illusions; and, attentively considering those cases, I perceive so clearly that there exist no certain marks by which the state of waking can ever be distinguished from sleep, that I feel greatly astonished; and in amazement I almost persuade myself that I am now dreaming.[62]

Descartes then questions the argument as follows:

> Let us suppose, then, that we are dreaming, and that all these particulars—namely, the opening of the eyes, the motion of the head, the forth-putting of the hands—are merely illusions; and even that we really possess neither an entire body nor hands such as we see. Nevertheless, it must be admitted at least that the objects which appear to us in sleep are, as it were, painted representations which could not have been formed unless in the likeness of realities; and, therefore, that those general objects, at all events, namely, eyes, a head, hands, and an entire body, are not simply imaginary, but really existent.[63]

[62] Rene Descartes, *Meditations on First Philosophy*, trans. John Veitch, 1901, http://eddiejackson.net/web_documents/Descartes'%20Meditations%20on%20First%20Philosophy.pdf.
[63] Ibid.

Descartes questions the dreaming argument by pointing to its relationship to our waking perceptions.[64] But I would like to press the argument in a different direction. In light of what we have come to know about sensory perception being a matter of construction, we cannot so neatly distinguish between dreams and waking perception.

Our consciousness has access to the imagery, the perception manufactured by our brain. Our consciousness does not have unmitigated access to the world without the initial processing of senses and brain. In what way does the conscious access of imagery built while sleeping differ from access to imagery built while waking? We could say that waking imagery at least has a genesis in senses while dreams are independent of current sensation. But that is not exactly true, for at least on some occasions sounds from the "outside" become incorporated into our dreams.[65]

There are some psychologists and physicists who argue in a strong sense that dreams and waking are the same sort of constructive reality:

> As we go about our lives, we take for granted the way our minds put everything together because the process is effortless, and its underlying mechanisms are baked-in, hidden, and automatic. But you might not have suspected that this same process of fashioning a seemingly external 3-D reality is the one underlying dreams. Since the realms of dreams and wakeful perception are usually classified separately—with only one of them regarded as "real"—they're rarely part of the same discussion. But there are interesting commonalities that give us clues as to how our consciousness operates. Whether awake or dreaming, we are experiencing the same process even if it produces qualitatively different realities. During both dreams and waking hours, our minds collapse probability waves to generate a physical reality that comes complete with a functioning body. The result of this magnificent orchestration is our never-ending ability to

[64] For a thorough analysis of the dreaming argument see: Selim Berker, "Lecture 2: Descartes' Dreaming Argument," Harvard University, September 6, 2018, https://scholar.harvard.edu/files/sberker/files/phil159-2018-lec2-descartes.pdf.
[65] Descartes, *Meditations on First Philosophy.*

experience sensations in a four-dimensional world.[66]

I am not contending that we take Dr. Lanza's "biocentrism" in full. Dr. Lanza is arguing that our perception of reality is just a passive internal construction of reality, but that reality itself (at least what we could possibly know of it) is constructed by our perception of it. I know this sounds outlandish, but I want you to consider the particle/wave experiment in physics.

It is a well-known experimental result that light will "behave" like a particle or a wave, depending upon whether you give light the option of proceeding through one opening or two. If you give it one opening, it goes through as a particle, a photon. If you offer it two openings, it goes through both and behaves as a wave.[67] The famous Dr. Feynman explains:

> The question now is, how does it really work? What machinery is actually producing this thing? Nobody knows any machinery. Nobody can give you a deeper explanation of this phenomenon that I have given: that is, a description of it. They can give you a wider explanation, in the sense that they can do more examples to show how it is impossible to tell which hole the electron goes through and not at the same time destroy the interference pattern. They can give a wider class of experiments than just the two slit interference experiment. But that is just repeating the same thing to drive it in. It is not any deeper; it is only wider. The mathematics can be made more precise; you can mention that they are complex numbers instead of real numbers, and a couple of other minor points which have nothing to do with the main idea. But the deep mystery is what I have described, and no one can go any deeper today.[68]

The weirdness of physics when it approaches the very small and the very large, the very slow and the very fast, will not detain us further. All you need to know is

[66] Robert Lanza, "Dreams Are More Real Than Anyone Thought Waking reality and dreams are different versions of the same thing," *Psychology Today,* August 11, 2021, https://www.psychologytoday.com/us/blog/biocentrism/202108/dreams-are-more-real-anyone-thought.
[67] Mack Levine, "Double-Slit Science: How Light Can Be Both a Particle and a Wave," *Scientific American,* December 12, 2013, https://www.scientificamerican.com/article/bring-science-home-light-wave-particle/.
[68] Richard P. Feynman, *The Character of Physical Law* (Cambridge, MA: MIT Press, 2001), 145.

that we cannot simply dismiss the contention that our perception of reality has no effect upon the reality, itself.

To return to the question of dreams, I need merely assert the lesser proposition, that a sharp distinction between waking and sleeping consciousness is not as easy as one may have thought. How do you contend, on the basis of what we know of sensory perception, that dreams are a wholly different from waking consciousness? Another way to get at this same problem comes the position of Bishop Berkeley:

> The starting point of Berkeley's attack on the materialism of his contemporaries is a very short argument presented in Principles 4:
>
> It is indeed an opinion strangely prevailing amongst men, that houses, mountains, rivers, and in a word all sensible objects have an existence natural or real, distinct from their being perceived by the understanding. But with how great an assurance and acquiescence soever this principle may be entertained in the world; yet whoever shall find in his heart to call it in question, may, if I mistake not, perceive it to involve a manifest contradiction. For what are the forementioned objects but the things we perceive by sense, and what do we perceive besides our own ideas or sensations; and is it not plainly repugnant that any one of these or any combination of them should exist unperceived?
>
> Berkeley presents here the following argument (see Winkler 1989, 138):
> (1) We perceive ordinary objects (houses, mountains, etc.).
> (2) We perceive only ideas.
> Therefore,
> (3) Ordinary objects are ideas.[69]

Berkeley turns the empiricist's argument on its head and works outward from ideas and tries to find some "real world" of tangible objects. When look back to

[69] Lisa Downing, "George Berkeley," *Stanford Encyclopedia of Philosophy* (Stanford, CA: Stanford University, 2019), January 19, 2011, https://plato.stanford.edu/entries/berkeley/#2.1.1.

Descartes dismissal of we are always dreaming, he points to our perception objects while awake as a proof that dreams are not reality. To this, Berkeley has a response:

> Berkeley is aware that the materialist has one important card left to play: Don't we need material objects in order to *explain* our ideas? And indeed, this seems intuitively gripping: Surely the best explanation of the fact that I have a chair idea every time I enter my office and that my colleague has a chair idea when *she* enters my office is that a single enduring material object *causes* all these various ideas. Again, however, Berkeley replies by effectively exploiting the weaknesses of his opponents' theories: "...though we give the materialists their external bodies, they by their own confession are never the nearer knowing how our ideas are produced: since they own themselves unable to comprehend in what manner body can act upon spirit, or how it is possible it should imprint any idea in the mind. Hence it is evident the production of ideas or sensations in our minds, can be no reason why we should suppose matter or corporeal substances, since that is acknowledged to remain equally inexplicable with, or without this supposition. (PHK 19)"
>
> Firstly, Berkeley contends, a representationalist must admit that we *could* have our ideas without there being any external objects causing them (PHK 18). (This is one way in which Berkeley sees materialism as leading to skepticism.) More devastatingly, however, he must admit that the existence of matter does not help to explain the occurrence of our ideas.[70]

The project of naïvely assuming a real world to which we have direct, self-authenticating access is not as easy it may seem. While Berkeley's argument when made in the 18th century may have sounded like a philosopher having fun with words and ideas, we see a greater cogency in the force of his argument when we realize how much of sensory perception actually is construction. In short, the relationship between what we consciously perceive and the thing we are perceiving raises some exceptionally difficult questions.

[70] Downing, "George Berkeley."

WHAT WE KNOW ABOUT SENSORY PERCEPTION FROM SENSORY PERCEPTION

So far, we have simultaneously argued (1) there is an arbitrary relationship between light and sight, between moving air and sound; and (2) the perception of which we are conscious is a construction.

Let's consider some implications of these propositions. First, the nature of shapes and colors does not come from world outside us. The colors and shapes must *precede* the perception of such shapes and colors. The message sent from our retina merely triggers the production such colors as my sensory perception. The photon cannot create a new color; it can only signal production of a pre-existing color.

Our interaction with the physical world can only result in the production of new combinations information which existed prior to the interaction with the environment. This means we are hardwired with a limitation on what we can understand about the world. This raises the interesting question: What is the source of this information? The sensory system is not built to acquire new information. There is no mechanism to acquire new information. The sensation based upon the environment results in an arrangement of the information which the brain can arrange into a perception.

Second, what we know about sensory perception only comes from the sensory system itself. We can acquire no empirical knowledge *around* our senses. If our senses are arbitrary and contain such limitations, then how can we know that what we know about sensory system is "true" or complete?

There is just one further aspect of sensory perception which we must consider: We don't know what we don't know. Until recently, we were unaware that the same waves which deliver visible light deliver infrared and ultraviolet "light." Beyond these lie x-rays and radio waves. Bats hear sounds we cannot hear. Bloodhounds track scents we cannot smell. And so, there lies a world beyond our senses.

We have overcome such limitations by developing technology to extend our senses. We track these colors and sounds and then translate the information into

some way which makes sense to us. An infrared photograph of the sun is translated into a visible yet false color photograph. Such a translation provides us some, albeit incomplete, knowledge of that world.

But there is a greater problem. Since our senses are developed to only respond to a narrow range of potential attributes of the "real world," whatever that might be, there could any number of things which are attributes of that world which are unknown and unknowable:

> It is readily allowed, that other beings may possess many senses of which we can have no conception; because the ideas of them have never been introduced to us, in the only manner, by which an idea can have access to the mind, to wit, by the actual feeling and sensation.[71]

This leads to the very real possibility that the world is mostly unknown and unknowable:

> The world is mostly unknown. This statement immediately emphasizes the point that we are not conscious of most of the environmental events that occur around us. The world consists of stimuli of which we may or may not be aware. These stimuli are pressure variations, chemicals, electromagnetic radiation, temperature, and even gravity.[72]

EMPIRICISM IS A TRICKY FOUNDATION

The prestige of "modern, modern science" (to use Schaffer's apt phrase), lies in the self-authenticating claim of empiricism.[73] But as we can see, empiricism

[71] David Hume, *An Enquiry concerning Human Understanding, Edited with an Introduction and Notes by Peter Millican* (Oxford: Oxford University Press, Oxford. 2007), 15.
[72] David R Soderquist, *Sensory Processes* (Thousand Oaks: SAGE Publications, Inc, 2002), 1.
[73] The early scientists believed in the uniformity of natural causes. What they did not believe in was the uniformity of natural causes in a closed system. That little phrase makes all the difference in the world. It makes the difference between natural science and a science that is rooted in naturalistic philosophy. It makes all the difference between what I would call modern science and what I would call modern modern science. It is important to notice that this is not a failing of science as science, but rather that the uniformity of natural causes in a closed system has become the dominant philosophy among scientists. Francis A. Schaeffer, *The Complete Works of Francis A. Schaeffer: A Christian Worldview,* vol. 1 (Westchester, IL: Crossway Books, 1982), 229–230.

does not provide self-authentication. It provides an arbitrary construction which is limited in ways we cannot even imagine. Indeed, empiricism may lead to the conclusion that what we perceive has been programmed by another. There is no "real world" to which have access.

Empiricism left to itself creates an epistemological trap from which we cannot escape. It cannot justify what we "know." While perhaps we can be certain, at least in a sense used by Descartes, that we know what we know, we do not know what *it is* that we know. Empiricism leaves us trapped in our brain with no way out.[74]

Indeed, it is difficult to know how empiricism can justify something beyond solipsism (which is merely a correlative of the computer simulation theory). It seems that if we are left with *empiricism alone* the best we can do is either (1) just ignore the problem, or (2) resign ourselves to an extreme form of skepticism such as belief that all life is illusory.[75]

I am not saying that an atheist scientist who denies anything beyond the functioning of his brain and insists, without justification, that this sensation is self-authenticating knows nothing of the real world. Common grace is sufficient to provide a basis for some knowledge even without an adequate justification for the belief in the truthfulness of such knowledge. But problem with meaning remains.

To set up that further consideration, I hope for you to understand the following: a fact "means" something based upon its relationship to some larger matrix of knowledge. If you are holding a baseball and start to throw it but stop, you have committed a "balk" if you are playing a game of baseball.[76] That is what you stopped motion "means." If you are in a park with your dog, the stopped motion "means" something quite different. If you are alone in your backyard, it has a third

[74] I write "perhaps" because even that Cartesian certainty is a matter of philosophical dispute.
[75] There is the response of Pyrrhonism as articulated by Sextus Empiricus, "And, most important of all, in his enunciation of these formulae he states what appears to himself and announces his own impression in an undogmatic way, without making any positive assertion regarding the external realities." Sextus Empiricus, vol. 1 *Outlines of Pyrrhonism,* trans. Rev. R.G. Bury (Cambridge: Harvard University Press, 1961), 11. This non-committed response to the problems of sense impressions seems to be the default position of our age.
[76] Matt Kelly, "What Is a Balk?" n.d. MLB.com, May 27th, 2019, Accessed April 18, 2022, https://www.mlb.com/news/what-is-a-balk-in-baseball-a-definitive-guide.

"meaning." The word "gift" means poison in Germany and a pleasant surprise in Germantown, Tennessee.

What these sense perceptions "mean" depends upon the context in which we understand them to take place. I have attempted to outline the nature of our sensory apparatus based upon our observations of that sensory apparatus. If we understand these sensations developed in our brain as a matter of accumulated solutions to survival problems arrived at over millions of years, they have a particular meaning. If we understand these same sensations as the product of an apparatus designed by a loving Creator who intends for us to understand something of the Creator, the sensations have a different meaning.

The nature of the "meaning" when applied to sensations can be largely overlooked if one is a chemist, say. But when it comes to psychology, the question meaning is critical. As noted above, psychology holds a unique place as a "science" which claims to tell us how we know. The full implications of that claim will be developed as we continue our examination. But that question of meaning begins here when the photon sets off a series of electrical and chemical responses.

And it is to this point which I have aimed from the beginning. The greater claim of "psychology" is that it is scientific and based upon self-authenticating empiricism and reason. We have not considered reason, but we have seen that empiricism won't answer to the demand made upon it.

To put a theological point on the problem, seeking to rely upon such an understanding of "science" is idolatry:

> Like the problems of rationalism, the problems of empiricism are essentially spiritual. Like rationalist, empiricists have tried to find certainty apart from God's revelation, and that false certainty has shown itself to be bankrupt. Even if the laws of logic are known to us (and it is unclear how they could be on an empirical basis), we could deduce nothing from statements about sensation except, at most, other statements about sensation. Thus, once again, rationalism become irrationalism: a bold plan for autonomously building the

edifice of knowledge ends up in total ignorance.[77]

To justify our knowledge, we must presuppose that (1) there is an appropriate correlation between light and sight (sense and perception); (2) the pre-existing information used to develop perceptions is appropriate; (3) what we have access to is sufficient; (4) what we know is "true."

Someone with sufficient power and moral goodness outside us and before us alone can guarantee such knowledge. This is not a sufficient argument to contend that such a God must exist. But what this argument does require is that one cannot assert that knowledge of the world or others can be had without such a God.

The manner in which we understand basic sensation, the meaning we assign to such sensation will frame the remainder of our analysis of psychology. As you can see, I propose that understanding sensation as an arbitrary process of our brain—which must be the conclusion of one how seeks to authenticate sensation based on sensation—creates a level of incoherence in our understanding of human beings and certainly creates a trouble at the most basic level of our science.

Since we all must begin with some presuppositions with themselves are not subject to analysis, I will begin the basic Christian propositions that our understanding must be informed by our text.

THE HEAVENS DECLARE

The dead-end of empiricism certainly must be rejected on any Christian reading. Paul, in Romans 1, contends that we are held morally and eternally accountable to what we perceive:

> For the wrath of God is revealed from heaven against all ungodliness and unrighteousness of men, who by their unrighteousness suppress the truth. For what can be known about God is plain to them, because God has shown it to them. For his invisible attributes, namely, his eternal power and divine nature, have been clearly perceived, ever

[77] John Frame, *The Doctrine of the Knowledge of God* (Phillipsburg: P&R Publishing, 1987), 119.

> since the creation of the world, in the things that have been made. So they are without excuse. For although they knew God, they did not honor him as God or give thanks to him, but they became futile in their thinking, and their foolish hearts were darkened. Claiming to be wise, they became fools, and exchanged the glory of the immortal God for images resembling mortal man and birds and animals and creeping things. Therefore God gave them up in the lusts of their hearts to impurity, to the dishonoring of their bodies among themselves, because they exchanged the truth about God for a lie and worshiped and served the creature rather than the Creator, who is blessed forever! Amen. (Romans 1:18-25)

Paul here is laying an extraordinary burden upon our perception of the physical world. What is disclosed in the physical world and which is then realized through our senses is the basis upon which God will impose eternal judgment. Look at those words which end verse 21, "So they are without excuse." That is a dumbfounding sentence.

As we have seen, the senses on their own terms, are a mechanism which transform interactions with the environment into some "perception" fixed in our brain. The relationship between the initial contact with the environment and the realized sensation is a construction (top-down processing), arbitrary (as demonstrated by synthesia), and incomplete in some unknowable manner. It cannot authenticate the source of its own knowledge. And yet God will hold us eternally accountable for the same.

One corollary of this proposition is that we must understand our sensory apparatus to be more than adequate: it provides us exactly as much information as God deems it minimally necessary. It must be "true" knowledge in a critical sense because God will judge us on this knowledge. In short, Christianity provides a guarantee, a justification for believing the content of our sense perception. Calvin comments, "By saying, that *God has made it manifest,* he means, that man was created to be a spectator of this formed world, and that eyes were given him, that he might, by looking on so beautiful a picture, be led up to the Author himself."[78]

[78] John Calvin, *Romans,* electronic ed., Calvin's Commentaries (Albany, OR: Ages Software, 1998), Romans 1:19.

Consider those words, "Man was created to be a spectator of this formed world." Our capacity to perceive the world is in part a reason for which we were created. Our sensory apparatus is not merely adequate, it is necessary for our purpose in existing. At this point, I want you to consider the argument above made in connection with computer simulation. The computer simulation position proposes that our conscious, having no survival purpose, can best be explained on the basis of living in a simulation. Calvin, relying upon Paul, says, our sensation and conscious awareness of that sensation is best explained on the basis that we were created to be spectators in the theater of God's glory.[79]

The knowledge we obtain in this theater should lead to a theological understanding of the world:

> But just what does Paul mean when he claims that human beings "see" and "understand" from creation and history that a powerful God exists? Some think that Paul is asserting only that people have around them the evidence of God's existence and basic qualities; whether people actually perceive it or become personally conscious of it is not clear. But Paul's wording suggests more than this. He asserts that people actually come to "understand" something about God's existence and nature. How universal is this perception? The flow of Paul's argument makes any limitation impossible. Those who perceive the attributes of God in creation must be the same as those who suppress the truth in unrighteousness and are therefore liable to the wrath of God. Paul makes clear that this includes all people (see 3:9, 19–20).[80]

You can begin to understand the importance of putting our sensory perception into a theological framework. We are not just observing this and that for the purpose of not dying. We are observing for the purpose of coming to know God. This is the reason why the Psalmist says the world is declaring God:

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[79] When I was in high school, I had the interesting opportunity of speaking with the head of the philosophy department at University of California Berkeley. The philosopher spoke to me of the "Gia Hypothesis." He held that human beings were a development of "Gia" so that the earth could observe itself.

[80] Douglas J. Moo, *The Epistle to the Romans, The New International Commentary on the New Testament* (Grand Rapids, MI: Wm. B. Eerdmans Publishing Co., 1996), 105.

The heavens declare the glory of God,
and the sky above proclaims his handiwork.
Day to day pours out speech,
and night to night reveals knowledge.
There is no speech, nor are there words,
whose voice is not heard.
Their voice goes out through all the earth,
and their words to the end of the world.
In them he has set a tent for the sun,
which comes out like a bridegroom leaving his chamber,
and, like a strong man, runs its course with joy.
Its rising is from the end of the heavens,
and its circuit to the end of them,
and there is nothing hidden from its heat. (Psalm 19:1-6)

The world, to use Calvin's language, is a theater in which we are to observe the glory of God:

> Therefore, because God has put us in this world as in a theatre, to contemplate his glory, let us acknowledge him to be such as he declares himself to us, and because he gives us the second instruction which is even more familiar in his word, let us be more confident and stirred with a burning zeal to aspire unto him until we reach that goal, and let us be aware that this world was created for that purpose and that our Lord has placed us here and has favored us with living here and enjoying all the things he has created.
>
> Now, the sun was not made for itself and is even a creature without feeling. The trees, the each, which produces food for us — all of that works for man. The animals, although they move and have some feeling, do not do for all that have this high capacity to understand what belongs to God, for they do not discriminate between good and evil. We also see that their life and death are for men's use and service.[81]

[81] Jean Calvin, "The Triune God at Work (Gen. 1:1-2)" in *Sermons On Genesis, Chapters 1:1-11:4: Forty-Nine Sermons Delivered in Geneva between 4 September 1559 and 23 January 1560,* trans. Rob

This means that we should understand epistemology, a theory for knowing what we know and why, as doxological. An understanding of knowledge which does not lead to a deeper understanding of the glory of God is faulty at its core.

Roy McGregor (Edinburgh: Banner of Truth Trust, 2009), 6.