

Duhemian and Augustinian Science and the Crisis in Non-Empirical Knowledge

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A SALIENT FEATURE of the success of any social, religious, or moral movement is the degree to which its advocates understand, shape, and employ the flow of ideas that forms the intellectual backdrop against which those advocates carry out their work. Setting aside Marxist and other self-refuting materialist forms of social determinism, it seems clear that ideas are among the primary things that impede or facilitate revolutionary movements.

Nowhere is this more evident than the pro-life cause. But just exactly what ideas constitute the core components of the milieu in which pro-life advocates live and move and have their being? I am not a sociologist nor the son of one, and I am no expert in the sociology of knowledge. However, I am a philosopher and, as such, I have a take on this question upon which I believe it is important for us to reflect.

In 1981 Daniel Callahan, who at that time served as director of The Hastings Center, published an important article entitled “Minimalist Ethics.”ⁱ Callahan’s central thesis was that contemporary American culture had come to stress the transcendence of the individual over the community, the importance of tolerating all moral viewpoints, the autonomy of the individual as the highest human good, and the voluntary, informed consent contract as the model of human relationships. These diverse moral positions, argued Callahan, are not part of a list of isolated ideas; rather, they constitute different aspects of a widely accepted moral axiom—minimalist ethics—that can be expressed in a single proposition: One may morally act in any way one chooses so long as one does not do harm to others.

Sadly, Callahan provided no analysis of the connection between this

axiom and other ideas extant in the culture at that time. Indeed, this lack of analysis blunted the force of Callahan's own solution to the problem, which essentially amounted to the claim that we need to set aside the assumption of minimalist ethics in favor of richer moral convictions because a minimalist ethic will not sustain us over the long haul.

What are those ideas that Callahan failed to weave into his analysis?

Among a small handful of worthy candidates, I want to focus on one that I take to be the primary hindrance to persuading people to adopt a richer ethical stance than minimalist ethics and *a fortiori* to adopting a pro-life perspective. One might think that it is the loss of belief in moral truth to which I refer. This is, indeed, a serious problem and worthy of analysis, but it is not, in my view, the foundational culprit. After all, if pressed, most moral philosophers and theologians would eschew ethical relativism in its various forms. I think the main intellectual factor that is left out of Callahan's analysis and that hinders the pro-life movement is *a loss of belief among cultural elites in particular, and the broader public in general, in the existence of non-empirical, non-scientific knowledge, especially of moral and religious knowledge.*

Interestingly, Callahan himself seemed to accept the absence of moral knowledge in his article. He makes reference to the fact that when John Stuart Mill first advanced his harm principle in 1859, he could "assume a relatively stable body of moral conviction below the surface."ⁱⁱ

Later, he advises that we bring "all the public and private opinion we can" against a minimalist ethic.ⁱⁱⁱ Note carefully Callahan's selection of terms: moral *conviction* and public/private *opinion*. These are hardly robust cognitive labels.

There are several examples in the literature of this ubiquitous denial of ethical knowledge. Here is one, selected almost at random. In a widely used text in ethics, utilitarian Tom L. Beauchamp considers and rejects a pluralistic theory of value because, among other things, it seems to many to be futile and presumptuous to attempt to develop a general theory of value.^{iv} As a replacement, Beauchamp proffers subjective preference utilitarianism, according to which the value of an act lies in its maximization of the satisfaction of desires and wants which express individual preferences.

He recognizes that, so defined, this theory suffers from some fairly obvious counter-examples, for example, in a possible world where most prefer child molestation, it would justify such an act under certain conditions. So Beauchamp supplements the principle of subject preference such that the justification of an act is spelled out in terms of the maximization of those subjective preferences that it is rational to have.

Now just exactly how is “rationality” functioning here? To answer this, let us distinguish prescriptive and descriptive rationality. Prescriptive rationality is the ability to have insights into or form justified beliefs with respect to what is intrinsically valuable. This cannot be what Beauchamp means since, if it were, his theory would be circular. Clearly, he means descriptive rationality: the ability to select efficient means to accomplish arbitrarily preferred ends and the formation of only those desires that normal people desire, which in turn would be cashed out statistically or in terms of evolutionary advantage, or in some similar sort of way.

My purpose here is not to evaluate Beauchamp’s subjective preference theory as a theory of value, though it is clearly deficient on this score. Rather, I want to call attention to the impact on the availability of moral knowledge that Beauchamp’s analysis has. In a way similar to anti-realists in philosophy of science such as Larry Laudan, by defining rationality in the descriptive and instrumental way he does, Beauchamp severs the connection between rationality and moral truth and thus implicitly denies the possibility of moral knowledge.

The assault on or ignorance of moral knowledge could be illustrated over and over again. Rawls’s decision-makers in the original position are denied access to moral information, Kai Nielsen advances a constructivist form of reflective equilibrium in which moral truth and moral knowledge are simply irrelevant, and J. L. Mackie argues that, given the truth of naturalistic atheism, irreducible moral facts are too queer to quantify over and, thus, Mackie denies moral knowledge.^v What is going on here and how can pro-life advocates *qua* academics change the situation? These are complicated and difficult questions, but in what follows I will try to offer my own insights on them. While far from exhaustive, I trust they

will be helpful to my pro-life colleagues. I shall (1) locate the rejection of moral knowledge against the backdrop of the central world view struggle now dominant on Western university campuses and (2) distinguish Duhemian and Augustinian science and show how the distinction can be useful to restoring confidence in moral knowledge. In this second section, I shall also define and locate the emerging Intelligent Design movement in an overall pro-life strategy.

1. MORAL KNOWLEDGE AND THE THREE-WAY WORLD VIEW STRUGGLE

I begin this section with the story of a prominent individual. Harvard philosopher Hilary Putnam is one current intellectual leader who has embodied the broader cultural malaise to which I am referring. Around 1980 Putnam attended a dinner party at which the hostess remarked that science has taught us that the universe was an uncaring, purposeless, valueless machine.^{vi} The statement stuck with Putnam and, in my view, it played a role in the development of his thought, which moved from strict scientific naturalism to a form of creative neo-Kantian constructivism regarding truth, reality, reference, reason, and value.^{vii} To be sure, postmodernism is a variegated movement with many stripes. But if we take postmodernism to include a rejection of (1) a language independent reality, (2) a correspondence theory of truth, (3) the referential use of language, (4) the epistemic objectivity of reason, (5) the self's ability to exemplify intentionality so as to contact reality directly, unmediated by "conceptual schemes" or their surrogates; then Putnam's move is postmodern despite its analytic philosophical trimmings.

Curiously, truth is a casualty in both scientific naturalism and postmodernism and along with it authority, in this case knowledge, especially the non-empirical sort. The Baconian/Cartesian identification of power over nature as the goal of science is still with us, and the postmodern preoccupation with the power dynamics of language is well known.

Putnam's way out is sad at many levels. At one level it reminds me of the supposed virtues of Buddhist justifications for ecology heralded in the late sixties. The claim was that Buddhism replaces the Judeo-Christian chauvinism of humans *vis-à-vis* nature and levels the playing field.

What escaped notice, however, was that the field was no longer worth playing on. Similarly, it is small comfort to those suffering from real evil to be told not to worry about the meaningless of it all because we now know that value, every bit as much as “reality,” is constructed. But what concerns me more is that Putnam could not see a more satisfying third option right in front of him. He should have added a non-naturalist ontology of value and self to scientific realism and pondered what sort of universe has room for them. I think such a move would have led him to theism.

In any case, Putnam’s journey is precisely what has happened to the Western intellectual scene. As with Putnam, the emergence of scientific naturalism as the dominant world view in Western culture is the chief reason why there is widespread disregard for non-empirical knowledge. Shortly after world war I, German philosopher Edmund Husserl, speaking about scientific naturalism (specifically, its tendency to reduce being to mathematical physics and knowledge to what can be so expressed), warned that “[A] change [has] set in at the turn of the past century [about] what science means for human existence. Science excludes in principle precisely the questions which man, given over in our unhappy times, finds the most burning: questions of the meaning or meaninglessness of the whole of this human existence.”^{viii}

According to Husserl, it was the tendency to identify knowledge with mathematicized empiricism (allegedly) employed in the hard sciences that created a culture bereft of a conviction that religious and moral knowledge was available for public discourse. It is worth pointing out that Husserl, correctly in my view, did not believe that the culprit was modernism *per se*, but rather the historically contingent direction that modernism took. After all, with notable exceptions, most modernist thinkers shared crucial doctrines with Plato, Aristotle and the Medievals (e.g., a real external world, truth as correspondence, epistemic foundationalism). In any case, he was right to put his finger on scientific naturalism as the main problem.

What, exactly, is scientific naturalism? This is a complicated question and I have attempted to address it elsewhere.^{ix} Obviously, in one form or another its contemporary incarnation expresses some form or

another of physicalism. But its chief linchpin is either weak or strong scientism. In the early 1960s, Wilfred Sellars expressed this posture when he said that “in the dimension of describing and explaining the world, science is the measure of all things, of what is that it is, and of what is not that it is not.”^x Steven Wagner and Richard Warner claim that naturalism is “the view that only natural science deserves full and unqualified credence.”^{xi} It is this naturalist epistemic posture that justifies a naturalist ontology.

It is scientific naturalism that sets the plausibility structure for contemporary culture. Sadly, this fact is not limited to certain sectors of the university community. It now dominates popular culture as well. In 1989, the state of California issued a new Science Framework to provide guidance for the state’s public school science classrooms. In that document, advice is given to teachers about how to handle students who approach them with reservations about the theory of evolution:

At times some students may insist that certain conclusions of science cannot be true because of certain religious or philosophical beliefs they hold....It is appropriate for the teacher to express in this regard, “I understand that you may have personal reservations about accepting this scientific evidence, but it is scientific knowledge about which there is no reasonable doubt among scientists in their field, and it is my responsibility to teach it because it is part of our common intellectual heritage.”^{xii}

The difference in cognitive expressions used to characterize science on the one hand and religion/philosophy on the other is striking and egregious. Not long ago *Time* magazine ran a cover story about the fact that scientists have now figured out how the world will end.^{xiii} The article announced that humans have wondered about the end of the universe for centuries but, sadly, since they only had religious and philosophical modes of explanation available to them, they could only vouchsafe idle speculation on the subject. Happily, now that science has entered the arena, knowledge has been secured. It is no coincidence that the closing editorial on cloning of the same issue of *Time* berates the pro-life position on the grounds that (1) religious, metaphysical and ethical positions are mere matters of arbitrary choice, while scientific

claims are matters of genuine knowledge; (2) the pro-life position justifies its views by way of the former and, thus, arbitrarily foists its opinions on others.

The move to postmodernism is a complicated one, and I am not suggesting that it is entirely, or even largely, motivated by the stark meaninglessness of a cold, silent, mechanistic universe. And while I believe it is the cure that kills the patient, it does seem to me that many have taken the postmodern turn precisely to avoid the axiological and religious implications of scientific naturalism. My purpose here is not to evaluate postmodernism, and I recognize that, as with scientific naturalism, it is a variegated tunic.^{xiv} Still, it is safe to say that the overwhelming majority of sophisticated postmodernists reject the reality of non-empirical knowledge. Thus, however different they are on other scores, two of the dominant contemporary world views that provide the context for the pro-life movement are united on one crucial point, viz., that *there is no such thing as ethical (or religious or strictly philosophical) knowledge*.

The primary characteristic of modern secularism is its view of the nature and limits of knowledge. It is critical to understand this because if knowledge gives one the right to act and speak with authority in public—we give surgeons and not a carpenters the right to cut us open precisely because surgeons have the relevant knowledge not possessed by carpenters—then those with the cultural say-so about who does and doesn't have knowledge will be in a position to marginalize and silence groups judged to have mere belief and private opinion.

There simply is no established, widely recognized body of ethical or religious knowledge now operative in the institutions of knowledge in our culture, e.g., the universities and schools. This raises a pressing question for the pro-life movement to address: Are the moral (and metaphysical) underpinnings of the pro-life movement merely part of a faith tradition, a perspective that, even if true, cannot be known to be true and must be embraced on the basis of some intellectual state weaker than knowledge? Or is the pro-life movement grounded in knowledge—perhaps defeasible knowledge that falls short of Cartesian certainty, but knowledge nonetheless?

As pro-life intellectuals, addressing this question may well be the single most important aspect of our work. Otherwise, it will be very difficult to prevent the marginalization of our viewpoint. If I am correct about this, then our primary job is not ethical argumentation. Rather, it is distinctively epistemological and metaphysical. *Immaterial reality and non-empirical knowledge are two key items of focus for the pro-life advocate who is sensitive to world view struggles.*

Besides scientific naturalism and postmodernism, the third main world view that is prominent in the current struggle is theism, especially Christian theism. Nowhere is this more evident than in the field of philosophy. Recently, in the humanist journal *Philo* atheist philosophy professor Quentin Smith warns fellow naturalists of the rise of Christian theism in academic philosophy in recent years. Says Smith, “Naturalists passively watched as realist versions of theism, most influenced by Plantinga’s writings, began to sweep through the philosophical community, until today perhaps one-quarter or one-third of philosophy professors are theists, with most being orthodox Christians.”^{xv}

I recognize that one need not be a theist to embrace the reality of objective value and knowledge thereof, or to be a pro-life advocate. Atheistic Platonism comes readily to mind.^{xvi} Clearly, some form of ontological non-naturalism seems required for there to be objective knowledge of moral truths, particularly the sort of moral truths that constitute a pro-life position. Still, I think that Platonism is most naturally seen as a version of theism and, in any case, I believe that without the resources of theism, specifically Judeo-Christian theism, it is hard to justify a pro-life ontology and epistemology sufficient to compete with scientific naturalism and postmodernism in the marketplace of ideas.^{xvii}

To see this, consider the following illustration. Suppose Smith went to a widget factory and observed the first ten widgets he inspected to be red. He would be epistemically justified on the basis of the way things seem to him by direct sensory intuition to form the belief that all ten widgets are, in fact, red. However, suppose that after forming this belief Smith was given further information about the widget factory, viz., that the lights in the ceiling are designed specifically to make widgets all look

as though they were red. Against this broader backdrop, he would no longer be justified in believing that the widgets were red on the basis of how they seem to him, even though it would still be possible for them to be red. Smith's new information provides an undercutting defeater that robs Smith of his epistemic justification. If Smith is now going to be justified in believing all ten widgets are red, he must provide a response to this defeater.

In the same way, scientific naturalism and postmodernism provide a backdrop for those who claim that it is self-evident or intuitively obvious or in some other way epistemically proper to believe in natural moral law. These world views provide defeaters for such claims and advocates of natural moral law or, more generally, knowledge of objective value, must provide a response to these defeaters. A case for Judeo-Christian theism provides such a response.

Similarly, it is hard to justify the view that human persons have unique, intrinsic, non-functional, equal value simply as such in light of postmodernism and scientific naturalism. On a postmodern view, the self and, indeed, the very notion of a nature that grounds membership in a kind, are social constructions.^{xviii} And on a naturalist view of things, Darwin's theory of evolution has made belief in human nature, though logically possible, nevertheless, quite implausible. As E. May has said: "The concepts of unchanging essences and of complete discontinuities between every *didos* (type) and all others make genuine evolutionary thinking impossible. I agree with those who claim that the essentiality philosophies of Aristotle and Plato are incompatible with evolutionary thinking."^{xix}

This belief has, in turn, lead naturalist thinkers like David Hull to make the following observation:

The implications of moving species from the metaphysical category that can appropriately be characterized in terms of "natures" to a category for which such characterizations are inappropriate are extensive and fundamental. If species evolve in anything like the way that Darwin thought they did, then they cannot possibly have the sort of natures that traditional philosophers claimed they did. If species in general lack natures, then so does *Homo sapiens* as a biological species. If *Homo sapiens* lacks a nature, then no reference to biology

can be made to support one's claims about "human nature." Perhaps all people are "persons," share the same "personhood," etc., but such claims must be explicated and defended *with no reference to biology*. Because so many moral, ethical, and political theories depend on some notion or other of human nature, Darwin's theory brought into question all these theories. The implications are not entailments. One can always dissociate "*Homo sapiens*" from "human being," but the result is a much less plausible position.^{xx}

The point I am making is a delicate one. I am not claiming that culture must become Judeo-Christian (whatever that means) if it is to adopt a pro-life stance or to be justified in such an adoption. I accept a certain form of natural moral law theory and hold that moral knowledge is available apart from acceptance of theism. Nor am I claiming that it would be an effective political strategy to tie the pro-life ethic to theism, especially Judeo-Christian theism. Indeed, this would be counterproductive.

I am claiming that, given the contemporary dominance of scientific naturalism and postmodernism, and given the presence of theism as a real player in this three-way contest, as an intellectual strategy, I believe that the pro-life movement would be remiss if it were to sever its ethical claims from broader world view considerations. If it does so sever them, then the movement will continue to be marginalized. Scientific naturalism and postmodernism are entire world views, and they provide serious defeaters for anyone who would try to shoehorn an objective pro-life ethic onto a secular culture with a plausibility structure constituted by these two world views. Only by locating a pro-life ethic against the backdrop of a broader theistic world view will that ethic gain a hearing in the contemporary climate.

We should enlist in our cause atheists and all who share our ethical concerns, and there are proper contexts for advancing pro-life arguments without regard to theism or broader considerations. But as part of our overall strategy, we need to bring theistic arguments into the mix. Among other things, this is why natural theology is so crucial to our efforts. I recognize that not everyone will agree with me and I cannot undertake to defend my views here. Let us grant for the sake of argument that I am correct about this. That is, let us grant that the pro-life

movement must make an aggressive case for immaterial reality and non-empirical knowledge, and the best way to do that is to locate ethical knowledge as part of a broader theistic world view that can itself be known to be true.

On that assumption, there is much work to be done. In my view, defenses of non-empirical knowledge need to be provided across academic disciplines, and a critique of at least extreme forms of postmodernism must be proffered.^{xxi} Moreover, we must redouble our efforts to revive distinctively philosophical arguments for God's existence. Currently, Alvin Plantinga's epistemology tends to dominate at least non-Catholic approaches to philosophy of religion and with it, the notion that belief in God is properly basic. I think this is mistaken and, in fact, counterproductive for the advancement of pro-life concerns, especially given important epistemological affinities between Plantinga's approach and postmodernism. In any case, a revitalization of arguments for God's existence, either as an alternative or supplement to a Plantingian sort of approach is crucial.

However, as important as these desiderata are, I do not want to focus on them in the pages to follow. Instead, I want to discuss how an important distinction between two philosophies of science may provide pro-life advocates with an intellectual framework for placing limits on and appropriating insights from the hard sciences in their attempt to strengthen the case for theism and, more generally, for non-empirical knowledge of which moral knowledge is one species.

2. DUHEMIAN AND AUGUSTINIAN SCIENCE

Recently, Plantinga has called attention to an important contrast between Duhemian and Augustinian science derived, respectively, from the ideas of Pierre Duhem and St. Augustine.^{xxii} According to Duhem, religious and, more importantly, metaphysical doctrines have often entered into physical theory. Many physical scientists have seen their job as offering an explanation of the phenomena, the appearances, in terms of underlying material causes. A proffered characterization of those causes often employs divisive metaphysical commitments as when Aristotelians, Cartesians and atomists gave disparate accounts of the phenomenon of

magnetism.

If the aim of physical theory is to explain phenomena in terms of the ultimate nature of their causes, says Duhem, then physical science becomes subordinate to metaphysics and is no longer an autonomous science. In this case, estimates of the worth of a physical theory will depend upon the metaphysics that one adopts. When practitioners of an area of physical science embrace different metaphysical schemes, progress is impeded because there is a compromise in the cooperation needed for progress. Successful science, if it is to be common to all, should not employ religious or metaphysical commitments only acceptable to some, including theism or physicalist naturalism.

For Duhem, it is not the absence of metaphysics as such that serves the prudential interests of science, but of metaphysical views that divide us. According to Plantinga, Duhemian science will not “employ assumptions like those, for example, that seem to underlie much cognitive science. For example, it could not properly assume that mind-body dualism is false, or that human beings are material objects; these are metaphysical assumptions that divide us.”^{xxiii} More generally, in my view the fact that there is a distinction between Duhemian and Augustinian science and that the former can be practiced at all seems to provide at least some grounds for what George Bealer calls the Autonomy Thesis by showing that, often, the progress of and data derived from Duhemian science are not relevant to the deeper metaphysical issues that divide practitioners into different Augustinian camps. According to Bealer, the Autonomy Thesis amounts to the following claim.

The Autonomy Thesis: Among the central questions of philosophy that can be answered by one standard theoretical means or another, most can in principle be answered by philosophical investigation and argument without relying substantively on the sciences.^{xxiv}

In a related manner and for different reasons, some aspects of Bas van Fraassen’s philosophy of science lead to a similar conclusion. While one need not be an anti-realist to appreciate the point, van Fraassen has argued that the theoretical postulates of a scientific theory typically go beyond the observational evidence and, strictly speaking, several

different metaphysical characterizations are empirically equivalent.^{xxv} Moreover, says van Fraassen, the primary goal of a scientific theory is to be empirically adequate, and acceptance of the unobservable metaphysical postulates of a theory is merely a pragmatic stance taken by advocates of a research program to continue searching for greater and greater empirical adequacy.

According to Plantinga, Augustinian science stands in contrast to Duhemian science. Roughly, an Augustinian approach to science eschews Methodological Naturalism and employs religious or metaphysical commitments specific to a group of practitioners not widely shared throughout the scientific community. Among other things, Augustinian science sanctions the use of scientific data to justify a religious or metaphysical proposition specific to a group of practitioners, at least in principle.

Duhemian and Augustinian approaches to science have a negative and positive role, respectively, in promoting the idea that various metaphysical, ethical and religious claims are knowledge claims. First, consider Duhemian science. By employing it, one can effectively block the slide from scientific progress to scientism, a slide that is essential to philosophical naturalism, by showing that advocates of disparate metaphysical claims may all appropriate various aspects of the progress of the hard sciences and, thus, the hard sciences may not be used to justify scientism, physicalism, and so forth. Put differently, a Duhemian approach to science provides justification for the Autonomy Thesis and, thus, provides a defeater for those who would employ discoveries in the hard sciences to justify scientific naturalism.

Consider two examples where a Duhemian approach helps to perform this function. John Searle says that it is an obvious fact of physics that “the world consists entirely of physical particles in fields of force...”^{xxvi} Now it should be clear that no field of science can appropriately dictate a general ontology or make assertions about the world in its entirety. If someone objects to this assertion on the grounds that progress in physics and chemistry has obtained precisely on the basis of such a claim, an advocate of Duhemian science will point out that no finding of the hard sciences requires or has the slightest epistemic

bearing on this assertion. It may well be that some weaker principle—it is fruitful for scientific purposes to approach physical systems as aggregates of physical particles standing in fields of forces—construed realistically or anti-realistically, may be what is actually relevant to scientific progress. A Duhemian may cheerfully embrace this second principle, but he or she will insist that it does not entail the more robust premise and, more importantly, no scientific finding can in the slightest be appropriated to settle the dispute.

A Duhemian approach is equally relevant to justifying the Autonomy Thesis in several areas of importance to the ontology of human persons. I have used it elsewhere to argue against evolutionary psychology,^{xxvii} against naturalist accounts of the origin of consciousness in general,^{xxviii} and the soul in particular,^{xxix} and against physicalism in philosophy of mind.^{xxx}

As an illustration of this last point, many people think that advances in neuroscience have made the justification of physicalism all but final. Philosopher Nancey Murphy's claim is representative in this regard. According to Murphy, "biology, neuroscience, and cognitive science have provided accounts of the dependence on physical processes of *specific* faculties once attributed to the soul."^{xxxi} Murphy goes on to concede that dualism cannot be *proven* false—a dualist can always appeal to correlations or functional relations between soul and brain/body—but advances in science make it a view with little justification because, she says, "science has provided a massive amount of evidence suggesting that we need not postulate the existence of an entity such as a soul or mind in order to explain life and consciousness."^{xxxii}

A Duhemian will insist that Murphy has it wrong, and that the actual progress in neuroscience underscores the Autonomy Thesis. In fact, in a recent article on consciousness and neuroscience, Francis Crick and Christof Koch—no friends of dualism or theism—acknowledge that one of the main attitudes among neuroscientists is that the nature of consciousness is "a philosophical problem, and so best left to philosophers."^{xxxiii} This posture comports perfectly with Duhemian science. Elsewhere, they claim that "scientists should concentrate on questions that can be experimentally resolved and leave metaphysical speculations

to 'late-night conversations over beer'.^{xxxiv} Methodologically, Crick and Koch choose to set aside philosophical questions about the nature of consciousness, qualia, meaning and so forth, and study the neural correlates of consciousness and the causal/functional role of conscious states. If this is all it means to say that physicalism is "the hard core of a scientific research program," a Duhemian will heartily agree and, in any case, such an appropriation of physicalism underscores and does not provide a counter-argument to the Autonomy Thesis.

A Duhemian approach to science is useful to the pro-life movement to undercut scientism, especially as it is used to advance certain views of the nature and origin of human persons. It may well be that, for any organism O, if O has human DNA, then O is a human person, but the converse does not seem to be true and, more importantly, the crucial issues for the pro-life debate, e.g., linking being a human with being a person, are philosophical and even theological, not scientific. When an editorial in *Time* magazine claims otherwise, it is simply ill-informed, and pro-life advocates can fruitfully use the concept of Duhemian science to show that their claims to that effect are made in the full light of advances in the hard sciences.

So much for the negative use of Duhemian science in the pro-life cause. What about the positive use of Augustinian science? Put simply, Augustinian science can, in principle, provide scientific justification for theism that may, in turn, provide broad epistemic grounds for embracing certain things central to the pro-life movement, for example, non-empirical knowledge, natural moral law, the intrinsic value of human life. In this way, Augustinian science can provide so-called "secular" reasons for bringing Judeo-Christian ontological and ethical considerations into the public square. The notion of a "secular" reason is ambiguous, but it may be fruitfully defined as any reason that does not require an appeal to special revelation *qua* revelation for its epistemic justification.^{xxxv}

In my view, providing an objective "secular" case for Judeo-Christian theism proceeds in two steps. First, various arguments/grounds are provided for monotheism and, second, arguments from historical evidence, Messianic prophecy and religious experience are given to

justify Judeo-Christian theism as over against other versions of monotheism. Apart from the science of archeology—which is relevant to step two—an Augustinian approach to science is most relevant to step one.

In order to illustrate this approach, I shall offer a brief characterization of perhaps its most vibrant recent expression, the Intelligent Design Movement (the ID Movement).

A central figure in the ID Movement is William Dembski, and he has argued that the movement has a four-pronged approach for defeating naturalism: (1) a scientific/philosophical critique of naturalism; (2) a positive scientific research program (intelligent design) for investigating the effects of intelligent causes; (3) rethinking every field of inquiry infected by naturalism and reconceptualizing it in terms of design; (4) development of a theology of nature by relating the intelligence inferred by intelligent design to the God of Scripture.^{xxxvi}

The main features of (2) are philosophical and scientific. Philosophically, the ID movement is an expression of Augustinian science in its rejection of Methodological Naturalism.^{xxxvii} According to an Augustinian philosophy of science:

- (1) There is a personal, transcendent agent—God—who has, through immediate, primary agency and mediate, secondary causation created/designed the world and has acted through immediate, primary agency in “natural” history.
- (2) Commitment to (1) has a proper place in the practice and methodology of science.

In this way advocates of Augustinian science reject Methodological Naturalism, roughly, the view that by its very nature science requires one to study natural entities from a natural point of view, seeking explanations for things in terms of natural events and laws that are part of the natural causal fabric. Thus, scientists’ theological beliefs lie outside of science. On this view, science and theology are, at best, non-interacting, complementary perspectives of the same reality that focus on different levels of description. As authentic but incomplete perspectives on the world, science and theology must be integrated into a coherent whole. But each level of description (e.g. the chemical vs. the

theological) is complete at its own level, with no gaps at that level for other perspectives to fill.

My purpose here is not to critique Methodological Naturalism or to defend an Augustinian philosophy of science. My purpose is to illustrate the approach with sufficient clarity to show its relevance to the pro-life movement. The philosophical aspect of the ID movement requires a negative critique of Methodological Naturalism and a positive formulation of scientific methodology consistent with propositions (1) and (2) above. The central feature of the negative critique consists in showing that demarcationist criteria for science that are sufficiently precise to justify a rejection of an Augustinian philosophy of science do not now exist and never have existed. A central feature of the positive case is what has come to be called the Intelligent Design filter. Recently, William Dembski has written a book in which he analyzed cases in which it is legitimate to infer that some phenomenon is the result of a purposive, intelligent act by an agent.^{xxxviii}

Among other things, Dembski analyzes cases in which insurance employees, police, and forensic scientists must determine whether a death was accident (no intelligent cause) or brought about intentionally (done on purpose by an intelligent agent). According to Dembski, whenever three factors are present, investigators are rationally obligated to draw the conclusion that the event was brought about intentionally: (1) the event was contingent, that is, even though it took place, it did not have to happen; (2) the event had a small probability of happening; (3) the event is capable of independent specifiability. These three factors constitute the Intelligent Design filter.

To illustrate, consider a game of bridge in which two people receive a hand of cards. Let one hand be a random set of cards—call it hand A—and the other be a perfect bridge hand dealt to the dealer himself. Now if that happened, we would immediately infer that while A was not dealt intentionally, the perfect bridge hand was and, in fact, represents a case of cheating on the part of the dealer. What justifies our suspicion?

First, neither hand had to happen. There are no laws of nature, logic, or mathematics that necessitate that either hand had to come about in the history of the cosmos. In this sense, each hand and, indeed, the

very card game itself, is a contingent event that did not have to take place. Second, since hand A and the perfect bridge hand have the same number of cards, each is equally improbable. So the small probability of an event is not sufficient to raise suspicions that the event came about by the intentional action of an agent. The third criterion makes this clear. The perfect bridge hand can be specified as special independently of the fact that it happened to be the hand that came about, but this is not so for hand A. Hand A can be specified as “some random hand or other that someone happens to get.” Now that specification applies to all hands whatever and does not mark out as special any particular hand that comes about. So understood, A is no more special than any other random deal. But this is not so for the perfect bridge hand. This hand can be characterized as a special sort of combination of cards by the rules of bridge quite independently of the fact that it is the hand that the dealer received. It is the combination of contingency (this hand did not have to be dealt), small probability (this particular arrangement of cards was quite unlikely to have occurred), and independent specifiability (according to the rules, this is a pretty special hand for the dealer to receive) that justifies us in accusing the dealer of cheating.

Similarly, if a wife happens to die at a young age in an unlikely manner even though she is healthy, and if this happens just after her husband took out a large insurance policy on her or a week after proposing to a mistress, then the three factors that justify an intelligent design are present. In an analogous way, ID advocates claim that there are certain conditions under which it is legitimate to infer that some aspect of the cosmos is the product of a Divine Intelligent Designer.

The scientific case that is central to the ID Movement focuses on these phenomena: the origin of the universe, the origin of the laws of nature and the fine tuning of the cosmos, the origin of life and the origin of biological information, the so-called Cambrian Explosion, the irreducible complexity of living systems and the difficulty this imposes on gradual, naturalistic evolutionary scenarios from one species to another, the origin of mind, language, and value.^{xxxix}

For present purposes, the importance of the ID Movement as an expression of Augustinian science lies in its attempt to show a culture

already committed to the epistemic authority of science that a number of important scientific facts fail to support philosophical naturalism and, in fact, provide epistemic justification for monotheism. To be sure, if ID advocates merely employ scientific arguments to justify theism, they may inadvertently contribute to scientism, so the ID movement should be seen as a supplement to and not a replacement of distinctively philosophical and other forms of argumentation for theism or, more generally, for non-empirical knowledge. Nevertheless, since so much of pro-life arguments employ non-empirical knowledge and ontological and ethical commitments most at home in a theistic—indeed, a Judeo-Christian theistic—world view, it is important for the pro-life movement to employ scientific arguments for this broader perspective when it is appropriate to do so.

At this point, someone may think that a certain tension exists in the attempt to appropriate Duhemian and Augustinian science in tandem. According to Duhemian science, successful science, if it is to be common to all, should not employ religious or metaphysical commitments only acceptable to some, including theism or physicalist naturalism. By contrast, Augustinian science eschews Methodological Naturalism, allows for theological concepts to enter into the practice of science, and may be used to provide grounds for theism. How are these two supposed to be reconciled?

I think the proper way to resolve this apparent tension is to adopt a particularist approach to epistemology and to reject epistemological methodism according to which one cannot know (or be justified in believing) that P unless one knows—that is, justifiably believes—(a) some criterion Q that expresses how it is that one knows (justifiably believes) that P and (b) that P satisfies Q.^{x1} According to methodism, one must know how one knows before one can know and if one cannot answer the skeptical question of how one knows, then one is defeated by the skeptic.

By contrast, epistemological particularism is the view that there are some particular items of knowledge (or justifiable belief) that one can know (justifiably believe) without knowing how one knows them, without the need for criteria for knowledge. According to the particularist, the skeptical question of how people know what they know

is a heuristic guide for insight, for extending knowledge from clear paradigm cases to borderline cases. This is done by surfacing from clear cases certain criteria for knowledge (which are justified from prior knowledge of the clear cases and not vice versa), and employing these criteria to borderline cases in order to extend knowledge.

Applied to the tension within our purview, as a particularist I would argue that one does not need to have criteria for when to adopt a Duhemian stance vs. an Augustinian one or vice versa. Rather, one should start with particular cases of science and build up a general approach from the bottom up. As Plantinga points out, we can all work together in the practice of Duhemian science, but go on to incorporate scientific practice into a broader Augustinian approach when it seems to a group of practioners to be justified. I have already cited areas where I believe the Augustinian approach is the best one (e.g., regarding the origin of the universe, fine tuning, the origin of life, information and mind) and areas where I think the Duhemian approach is the best one (e.g., several areas of importance to the ontology of human persons). For present purposes, this will have to suffice.

In sum, I believe that the current intellectual climate, with its three-way world view clash, makes it incumbent upon pro-life intellectuals to tackle the widely held view that there is no non-empirical knowledge, especially of the religious and ethical kind. And when they do, I believe the distinction between Duhemian and Augustinian science will greatly enhance their efforts.

NOTES

i. Daniel Callahan, "Minimalist Ethics," *The Hastings Center Report* 11 (October 1981) 19-25.

ii. *Ibid.*, p. 24.

iii. *Ibid.*, p. 25.

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- iv. Tom L. Beauchamp, *Philosophical Ethics* (New York: McGraw-Hill, 1982), pp. 83-86.
- v. See John Rawls's classic work *A Theory of Justice* (Cambridge: Harvard Univ. Press, 1971). See J. P. Moreland, "Rawls and the Kantian Interpretation," *Simon Greenleaf Law Review* 8 (1989) 25-55. See also J. P. Moreland, Kai Nielsen, *Does God Exist?* (Buffalo: Prometheus, 1993), chs. 8-10; J. L. Mackie, *Ethics: Inventing Right and Wrong* (New York: Penguin Books, 1977).
- vi. Hilary Putnam, "Beyond the Fact-Value Dichotomy," published in an internal Harvard University faculty newsletter, March 1982.
- vii. Hilary Putnam, *Reason, Truth, and History* (Cambridge: Cambridge Univ. Press, 1981), especially chs. 6, 9.
- viii. Edmund Husserl, *The Crisis of European Sciences* (Evanston: Northwestern Univ. Press, 1970; 1954), pp. 5-6.
- ix. See the introduction in J. P. Moreland, William Lane Craig, eds., *Naturalism: A Critical Analysis* (London: Routledge, 2000); J. P. Moreland, "Searle's Biological Naturalism and the Argument from Consciousness," *Faith and Philosophy* 15 (January 1998) 68-91; "Should a Naturalist Be a Supervenient Physicalist?" *Metaphilosophy* 29 (1998) 35-57; "Naturalism and Libertarian Agency," *Philosophy and Theology* 10 (1997) 351-81.
- x. Wilfred Sellars, *Science, Perception, and Reality* (London: Routledge & Kegan Paul, 1963), p. 173.
- xi. Steven J. Wagner, Richard Warner, *Naturalism: A Critical Appraisal* (Notre Dame: Univ. of Notre Dame Press, 1993), p. 1.
- xii. Cited in Mark Hartwig and Paul A. Nelson, *Invitation to Conflict* (Colorado Springs: Access Research Network, 1992), p. 20.
- xiii. Michael D. Lemonick, "The End," *Time* 157 (June 25, 2001) 48-56.
- xiv. See Doug Groothuis, *Truth Decay* (Downers Grove: InterVarsity Press, 2000).
- xv. Quentin Smith, "The Metaphilosophy of Naturalism," *Philo* 4 (2001) 195-215.
- xvi. Panayot Butchvarov, *Skepticism in Ethics* (Bloomington: Indiana Univ. Press, 1989).

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- xvii. For my critique of atheistic Platonism in this regard, see J. P. Moreland, Kai Nielsen, *Does God Exist?* (chs. 8-10).
- xviii. For a discussion of this issue against a backdrop of the role of a realist metaphysics for developing notions of the self and of human personhood, see J. P. Moreland, "Restoring the Substance to the Soul of Psychology," *Journal of Psychology and Theology* 26 (March, 1998) 29-43.
- xix. E. May, *Populations, Species, and Evolution* (Cambridge: Harvard Univ. Press, 1970) p. 4.
- xx. David Hull, *The Metaphysics of Evolution* (Albany: SUNY Press, 1989) pp. 74-75.
- xxi. I have sought to provide some reflections on how to integrate Christian theism into various academic disciplines in "Academic Integration and the Christian Scholar," *The Real Issue* (2000) 6-11.
- xxii. Alvin Plantinga, "Methodological Naturalism" in *Facts of Faith and Science* Vol. 1: *Historiography and Modes of Interaction*, ed. by Jitse M. vander Meer (Lanham: Univ. Press of America, 1996), pp. 177-221.
- xxiii. *Ibid.*, pp. 209-10.
- xxiv. George Bealer, "On the Possibility of Philosophical Knowledge" in *Philosophical Perspectives 10: Metaphysics, 1996*, ed. by James E. Tomberlin (Cambridge: Blackwell, 1996), p. 1.
- xxv. Bas C. van Fraassen, *The Scientific Image* (Oxford: Oxford Univ. Press, 1980); "To Save the Phenomena" in *Scientific Realism*, ed. by Jarrett Leplin (Berkeley: Univ. of California Press, 1984), pp. 250-59.
- xxvi. John Searle, *The Rediscovery of the Mind* (Cambridge: MIT Press, 1992), p. xii.
- xxvii. See J. P. Moreland, "Intelligent Design Psychology and Evolutionary Psychology: A Comparison of Rival Paradigms," *Journal of Psychology and Theology* 29 (2001) 361-77; Chris Grace, J. P. Moreland, "Intelligent Design Psychology and Evolutionary Psychology on Consciousness: Turning Water into Wine," *Journal of Psychology and Theology* 30 (2002) 51-67.
- xxviii. See J. P. Moreland, "Searle's Biological Naturalism and the Argument from Consciousness," *Faith and Philosophy* 15 (1998): 68-91.
- xxix. See J. P. Moreland, Scott Rae, *Body and Soul* (Downers Grove:

InterVarsity Press, 2000), Ch. 6.

xxx. J. P. Moreland, "A Christian Perspective on the Impact of Modern Science on Philosophy of Mind," *Perspectives on Science and Christian Faith* (March 2003) 2-12.

xxx. Nancey Murphy, "Human Nature: Historical, Scientific, and Religious Issues" in Warren S. Brown, Nancey Murphy and H. Newton Malony, *Whatever Happened to the Soul?* (Minneapolis: Fortress Press, 1998), p. 17. Cf. pp. 13, 27, 139-43.

xxxii. *Ibid.*, p. 18.

xxxiii. Francis Crick, Christof Koch, "Consciousness and Neuroscience," *Cerebral Cortex* 8 (1998) 97-107.

xxxiv. Cf. John Horgan, "Can Science Explain Consciousness?" in *Scientific American* (July 1994) 91.

xxxv. For more in this in the context of a discussion of abortion, see Francis Beckwith, "Law, Religion, and the Metaphysics of Abortion: A Reply to Simmons," *Journal of Church and State* 43 (2001) 19-33.

xxxvi. William Dembski, "Introduction" in *Mere Creation*, ed. by William Dembski (Downers Grove: InterVarsity Press, 1998), pp. 28-29.

xxxvii. For a critique of Methodological Naturalism, see J. P. Moreland, ed., *The Creation Hypothesis: Scientific Evidence for a Designer* (Downers Grove: InterVarsity Press, 1994), Chs. 1-3.

xxxviii. William Dembski, *Intelligent Design* (Downers Grove: InterVarsity Press, 1999).

xxxix. Important works in this regard are Jonathan Wells, *Icons of Evolution* (Washington, D. C.: Regnery Gateway, 2002); Michael J. Behe, *Darwin's Black Box* (New York: The Free Press, 1996).

xl. Cf. Roderick Chisholm, *The Problem of the Criterion* (Milwaukee: Marquette Univ. Press, 1973).