Late Modernity, the Challenge of Scientism and the Search for Meaning

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Abstract

We late moderns are on a challenging journey. It is human to desire meaning and purpose in life that transcends mere survival, that engages life, even in the midst of our suffering and tragedy. But there are several obstacles to meaning discovery and meaning making within today's Western culture. In line with the critique of modernity by eminent Canadian philosopher Charles Taylor (*Sources of the Self*, 1989; *A Secular Age*, 2007), this paper will map a framework for understanding late modernity and some of its discontents, especially those caused by the ideology of scientism. Ethics, identity and spirituality are interwoven, notes Taylor, one of the key twentieth century philosophers of the self. As he maps late modern culture with Taylor and other key thinkers, Dr. Carkner examines the problems of scientism, the over-emphasis on immanence and a Closed World System. He will demonstrate how such ideologies fly in the face of our quest for, and personal convictions about, life's meaning. Some of the forces within late modernity are leading people away from higher forms of meaning and into a dysfunctional and confining nihilism. The following critique proposes a way forward, a trajectory for the reconstitution of the self through a retrieval of the ancient language of the good, and through a transcendent philosophical turn towards *agape* love. This is a robust retrieval of meaning of the richest sort.

Introduction

Most people welcome the benefits that modern science has brought us: disease control, transportation and communication wonders, space travel, phenomenal wealth production, personal empowerment, conveniences of all sorts. It has also produced a vast array of jobs that once never existed and has empowered mankind's curiosity. The edifice of scientific journals is voluminous and impressive. Could our earlier ancestors have ever imagined that their arrow would reach the moon or travel around the earth? There have been more discoveries and inventions in the twentieth century than in all previous history combined. We are truly in the *age of science*. The phenomenal growth of scientific and engineering knowledge/expertise and the growth in our technological skill have done much to help us adapt as a species, to make life easier and better. Such knowledge growth and innovation is advancing at an exponential rate.

But the veneration of science, which has often morphed into an ideology, is called *Scientism*. That is what we want to examine closely—an ironic metaphysical claim about the impossibility of metaphysics. It has a major influence within the Western university and cultural ethos. It impacts the *social imaginary* (how we think about ourselves and the world, how we experience our being). It appears to be based more on the psychological impact of science's three-hundred-year success than on a logical conclusion from scientific evidence or discovery. Heavy priority is placed on what the five human senses can tell us about the immanent time-space-energy-

matter world[1] in contrast to a transcendent one, a *natural* order in contrast to a *supernatural* one. Science, through the eyes of the ideology of scientism, becomes the paradigm of all roads to truth. It is tragic, but many science students do not trust a statement that has no hard scientific/empirical evidence; it passes no muster. As well, other truth claims are seen to be only subjective, taken as mere opinion, based on blind faith, superstition or mere conjecture.

We moderns can be biased against truth from other sources, and in fact biased against beauty and goodness at times. Scientific Rationalism tends to pit truth against goodness and beauty. This is part of the intellectual tradition (culture of rationality) often referred to as early Modernity, or early Enlightenment.[2] There is a tendency to *police* even what questions can be legitimately asked or discussed in the public square. The colossal success of modern natural science and its associated technology can lead us to feel that it unlocks all mysteries, that it will ultimately explain everything. Those holding the scientism bias believe that everything could and should be understood in terms of natural (read hard) science. We are caught up in the realm of instrumental rationality and secular time.[3] Scientism (especially the hardcore version) offers a hegemonic metanarrative to explain everything important.

Although scientism and philosophical positivism have been discredited as inadequate by many philosophers and scientists in the twentieth century, it still seems to dominate popular thinking, even among many bright science students, scientists themselves and other scholars. Even non-scientific studies somehow gain more credibility if they have quantitative, statistical and empirical backing (for example, the statement that 75% of scholars in this humanities field say interpretation x is the superior view). For a belief to be considered valid or credible, scientism requires that it be *scientifically testable*. A valid and limited approach to knowing (science) somehow morphs into an exclusivist ideology (scientism). In many people's hearts and minds, it assumes its location within a Closed World System. Canadian philosopher Charles Taylor captures its potency.

> We can come to see the growth of civilization, or modernity, as synonymous with the laying out of a closed immanent frame; within this civilized values develop, and a single-minded focus on the human good, aided by the fuller and fuller use of scientific reason, permits the greatest flourishing possible of human beings. …

[1] See Charles Taylor Chapter 15 "The Immanent Frame" in his tome *A Secular Age* (C. Taylor, 2007, 539-93) for a fuller articulation of this outlook.

[2] The Romantic or Counter-Enlightenment emphasized the *aesthetic* and feelings. Postmodernity is seen to be a product of the Counter-Enlightenment or Post-Romanticism. This I studied in my PhD dissertation on Foucault and the moral self.

[3] Charles Taylor's terms (2007, 566): "Science, modern individualism, instrumental reason, secular time, all seems further proof of the truth of immanence. For instance, natural science is not just one road to truth, but becomes the paradigm of all roads. Secular time, seen as homogeneous and empty, is not just the dominant domain of present day action, but is time itself." See also Craig Gay's insightful *The Way of the Modern World* (C. Gay, 1998) to get a clear picture of the Modernist anthropology as one that doubts the importance of transcendence.

> What emerges from all this is that we can either see the transcendent as a threat, a dangerous temptation, a distraction, or an obstacle to our greatest good. [4]

Part I. Six Cultural Identifiers

What are the earmarks of a scientism picture, outlook or worldview? The following succinct six points assist our inquiry. They help us frame scientism and its impact on our thinking, as a cultural phenomenon.

1. The Epistemological Claim No knowledge is deemed valid or justified unless its claims can be tested and verified empirically through experimentation, observation and repetition. This criterion is part of an intellectual infrastructure that controls the way people think, argue, infer, and make sense of things. Truth claims that do not submit to this kind of scrutiny become irrelevant, invalid, unacceptable, mere subjective opinion. This principle of knowledge is heavily weighted towards the instrumental and the mechanistic. Hidden in this epistemic claim is an ontological or metaphysical claim: that there is nothing but a time-space-energy-matter world. We will show later in the paper that this epistemic claim is *self-refuting*. Are there other types of knowledge that hold weight, but that science cannot legitimately study and should not question?

2. Utopian Sentiment Science is viewed as the futuristic guide to human *progress* intellectually and culturally. The past tradition, especially that influenced by Christian religion, is taken as false opinion and superstition (even dangerous) by the New Atheists, detrimental to human progress. The growth of scientific knowledge guarantees social and political progress—humans are seen to be flourishing and getting better, wealthier, especially because of empirical science. The success of science has been used bolster the ideology of scientism. Scientism unfortunately assumes a warfare model in science-religion relations. As science advances, religion is left behind, demoted in importance to the point of redundancy, eventually to be replaced by science in an enlightened age (E.O. Wilson). The progress myth entailed in scientism reaches a utopian pitch at times, the tone we often find in Wired Magazine, or the Humanist Manifesto.

> The next century can and should be the humanist century. Dramatic scientific, technological, and ever-accelerating social and political changes crowd our awareness. We have virtually conquered the planet, explored the moon, overcome the natural limits of travel and communication; we stand at the dawn of a new age ... Using technology wisely, we can control our environment, conquer poverty, markedly reduce disease, extend our lifespan, significantly modify our behavior, and alter the course of human evolution.[5]

3. Intellectual Exclusion or Hegemony One could also label this 'comprehensive scientism', the belief that science will eventually answer all the questions worth asking, and become the bar of

[4] C. Taylor, 2007, 548.

[5] Humanist Manifesto II (Prometheus Books) p. 5. See also Quentin J. Schultze (2002), *Habits of the High-Tech Heart: living virtuously in the information age*, for a good exposition of scientism's utopianism. Steven Pinker is a popular and strong advocate of the progress myth (2018: *Enlightenment Now: the case for reason, science, humanism and progress*; 2011: *The Better Angels of Our Nature: why violence has declined.*)

approval for all credible knowledge. Insights from the humanities, philosophy and theology are treated with the hermeneutic of suspicion (soft core scientism). Scientific rationalism dismisses faith as mere fideism (belief without reason) or mere irrationality: pitting truth against beauty and goodness. To be poetic is taken to be trivial or irrelevant, the fool on the hill. Scientism's inherent materialism entails that "science" refuses mystery, the metaphysical or anything transcendent, even the mythopoetic, metaphorical or *epiphanic*. We see this kind of arrogance in people who say that we must accept their worldview or we caste ourselves as unsophisticated children. Philosopher David Hart exposes the faulty thinking.

> An admirably severe discipline of interpretive and theoretical restraint [modern empirical science] has been transformed into its perfect and irrepressibly wanton opposite: what began as a principled refusal of metaphysical speculation, for the sake of specific empirical inquiries, has now been mistaken for a comprehensive knowledge of the metaphysical shape of reality; the art of humble questioning has been mistaken for the sure possession of ultimate conclusions. This makes a mockery of real science. (David Bentley Hart, 2013, 71)

4. Anthropological Reductionism People are viewed as sophisticated cogs in the cosmic machinery, or simplified/demoted as the most intelligent animals (highest primates). All human characteristics, including mind or soul, are taken as explicable in terms of body (neuron networks, DNA makeup, biochemistry or physiology). There is a philosophical reductionism at work: the higher is explained in terms of the lower, mind in terms of brain, human social behaviour in terms of physics and chemistry, or ant colonies (E.O. Wilson). Humans are appreciated mainly for their instrumental value: earning capacity, socio-political usefulness and their excellence of giftedness.[6] We saw this mentality lived out in the old Soviet Union, but it often exhibits itself in how people are treated in the West today. Check http://ubcgcu.org for an article on Modernity and Self-Identity.

5. Perspective on Ethics Science is seen to normatively provide a more reliable and superior decision-making guide. It becomes the new alternative to religion and morals in discerning the good and shaping the moral self for human flourishing. In a moral sense, science moves into dominance as a culture sphere, absorbs and redefines morality in *scientific* categories. Scientific principle is seen to be applicable to all, and thus much less divisive than religion (Brad Gregory, 2012, 180-234). Religious or personal moral values are to be kept to the private sphere of one's life, but not to be part of public discourse.[7] It is also important to note here that scientism's ethical outlook entails an objectification of the world, which gives institutional leaders a sense of control over it. Knowledge or expertise signifies power and offers privilege to those in power. But those who have attempted this substitution of science for ethics, is for ought, facts for values (the regulative function) have failed. It breaks down when we try to use science to discern 'How then should we live?' 'Is' does not imply 'ought' at the end of the day.

6. Poor View of Language Within the scientism frame/map of reality, knowledge depends on a

[6] For a fuller exposition of the point, see Regent College professor Craig Gay (1998).

[7] See Lesslie Newbigin's *Foolishness to the Greeks* (L. Newbigin, 1988) for an excellent articulation of this outlook.

designative (versus an *expressivist-poetic*) tradition of language.[8] Designative language (Hobbes to Locke to Condillac) traps the pursuit of wisdom within language and confines it to immanence where language and its relationship to truth are reduced to pointing or representation. Language primarily designates objects in the world. The object is held and studied at a distance, observed but not participated in. One assumes a use of language based on quantitative judgments that are non-subject dependent (*objective*). This view of language contributes to scientism's mechanistic understanding of the universe, rendering it disenchanted (without soul or mystery). For a fuller treatment of language, see Charles Taylor's tome *The Language Animal* (2016). Further insight is also found in the section below comparing the epistemological versus the hermeneutical way of seeing and understanding the world.

> Our language has lost its constitutive power. This means that we can deal instrumentally with realities around us, but their deeper meaning (the background in which they exist), the higher reality which finds expression in them, is ignored and often invisible to us. Our language has lost the power to *Name* things in their embedding, their deeper, richer and higher reality. The current incapacity of language is a crucial factor in our incapacity of *seeing well* and impacts our flourishing. Our language, our vision and our lives often remain flattened in late modernity. (C. Taylor, 2007, 761).

To sum up the analysis thus far, scientism is the notion that natural science constitutes the most authoritative worldview or form of human knowledge, and that it is superior to all other interpretations of life. It assumes an immanent, Closed World System, which rejects the validity of any transcendent elements to reality. There exists a strong attraction to the idea that we are in an order of *nature*, that we do not and cannot transcend it. In scientism, the study and methods of natural science have morphed into an ideology, producing a state of *methodological imperialism*. Scientism also indicates the improper usage of science or scientific claims in contexts where science might not properly apply, such as when the topic is perceived to be beyond the scope of scientific inquiry (for example, to determine a worldview or final purpose, or to comment on religion). The stance of scientism may indicate in an overconfident fashion a scientific certainty in realms where that kind of certainty is not possible. The person overreaches the proper limits of science in a process which can thereby discredit science itself. This has some serious consequences for humans and society.

Scientism as a Prison of the Mind The ideology of scientism is a picture of the world that holds our minds captive. For some of the reasons above, scientism can lead us to nihilism, cynicism, addictions and despair, what Taylor calls the *malaise of modernity*. This feeds into the crisis of Millennials.[9] There is a logical progression from the epistemology, ontology and anthropology of

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[8] Charles Taylor, Language and Human Nature. *Plaunt Memorial Lecture, Carleton University, 1978.* See also Chapter 15 in his *A Secular Age* (2007).

[9] **Existential Crisis of Millennials:** Lack of moral grounding (raised on moral subjectivism and radical tolerance) in tension/contradiction with a narrow political correctness. Entitlement crashes into the wall of the real world. Life is hard. Lack of a meaningful story/narrative to make sense of life, loss of community. Suffering from *cultural amnesia* and biblical illiteracy--great stories (Finding Shakespeare Project). Wounded masculine soul: self-doubt, relationship issues, combined with lack of realism and self-discipline. Addiction to technology, easy access entertainment (Netflix): the 'life is free and quick' opioid (Simon Sinek). Impatience. Attention deficit issues. Nihilism caused by scientism, radical individualism, and late Capitalist hyper-consumerism. Notre Dame's top sociologist Christian Smith (*Souls in Transition,* 2009) speaks of 18-23 year olds as: soft ontological antirealists, epistemological skeptics, perspectivalists, constructivists and moral intuitionists. Workaholism/performance

scientism to the moral confusion and identity crisis of late modernity, the crisis of self. Scientism alienates and oppresses us. We intuitively see ourselves as *more* than machines, more than animals, beings with freedom and purpose. The dogma of scientism stifles, and even questions our very agency. It cramps and constricts our imagination, even in the practice of science. Ultimately, it threatens and hampers the human quest for meaning.

Two Different Ways of Seeing/Understanding the World

a. The Epistemological Approach (consistent with scientism)

The set of priority relations within this picture often tends towards a closed world position (CWS). Its assumptions include the following convictions with proponents like Descartes, Locke, and Hume

i. Knowledge of self and its status comes before knowledge of the world (things) and others.

ii. Knowledge of reality is a neutral fact before we attribute value to it.

iii. Knowledge of things of the natural order comes before any theoretical invocations or any transcendence (which is thereby problematized, doubted or repressed). This approach tends to write issues and dimensions of transcendence out of the equation from the beginning.

b. The Hermeneutical Approach

The working assumptions of this approach are as follows, the proponents people like Heidegger, Merleau-Ponty, Gadamer, Zimmermann. See *Hermeneutics: a very short introduction* (J. Zimmermann, 2016) by Jenz Zimmermann for a quick overview of the issues involved. This understanding will assist us in our recovery from the *opiate* of scientism in Part IV of this paper.

i. Self is not the first priority: the world, society and the game of life come first. We only have knowledge as agents coping with the world, and it makes no sense to doubt that world.

ii. There is no priority of a neutral grasp of things over and above their value. It comes to us as whole experience of facts and valuations.

iii. Our primordial identity is as a new player inducted into an old game. We learn the game and begin to interpret experience for ourselves. We sort through our conversations looking for a picture of reality.

iv. Transcendence or the divine horizon is a possible larger context of this game. Radical skepticism is not as strong as it is in the epistemological approach. There is a smaller

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anxiety: derives from lack of a strong moral identity and good moral interlocutors. Corporation's bottom line moves into the vacuum and shapes one's identity and raison d'être—measured by quantitative *performance,* not character. (Matthew Crawford, *The World Beyond Your Head,* 2015). Dis-orientation, uncertainty, self-loathing, cynicism, anger and resentment, skyrocketing depression, but deep longing for *purpose*, and heroism. Globalization and Transhumanism: opportunity and tragedy.

likelihood of a closed world system (CWS) view in the hermeneutical approach. In a sense, it is humble, nuanced, embodied and situated.

Part II. Historical and Philosophical Roots of Scientism

The scientific revolution in the seventeenth century owes much to the new techniques of empirical science: important advances in mathematics and the telescope are just two examples. Radical empiricism, however, derives from John Locke and David Hume of Britain in the eighteenth century. This is the origin of the problem. Hume claimed that an idea was meaningless unless it had empirical grounds. He attempted to reduce all knowledge to scientific knowledge and even suggested the burning of all books that contained no quantities or matters of fact.[10] This is ironic because Hume was also the first great skeptic of scientific induction.

Our brief historical overview journey finds us next in the late nineteenth century with the positivist philosopher, Auguste Comte, probably the clearest representative of scientism. The father of modern sociology, Comte claimed that humanity had entered a new age—the *age of science*. Thus, he ruled out anything of a theological or metaphysical nature, which he saw as passé. Science was believed to be the door to the future and must replace religion, in his view. He also contributed much to the myth of progress. He and others such as sociologist Emile Durkheim looked forward to a day when religion would disappear altogether. One could also reference Victorian Naturalist T.H. Huxley or German Materialist Ernst Haekel as two key figures who saw science as the new religion of the late nineteenth century. Swedish philosophy of science scholar Mikael Stenmark (1995) is quite convinced that scientism is taken on as a religious worldview by many New Atheists.

The twentieth century formulation of scientism is best seen in logical positivist A.J. Ayer and his famous Verifiability Criterion of Meaning. Briefly stated, this means that we should treat as nonsense or irrelevant any statement which transcends statements of fact about the physical world—all ethical, metaphysical and theological statements. What we notice here is the development of scientism's *epistemological imperialism*. Science is elevated and praised as the only way to solid, reliable truth, claiming a monopoly on the market of valid knowledge.[11] Ayer later recanted his position, recognizing its internal self-contradiction. Philosopher Thomas Nagel (*Mind and Cosmos*, 2012) has raised serious questions about science, especially materialistic philosophical naturalism, as the last word on knowledge—it does not have the 'explanatory range' for such phenomena as consciousness, morality and purpose.

The spirit of the early twentieth century welcomed science as the cure for all evils and the ripe solution to all religious and political questions. It became a kind of 'comprehensive scientism'. Astronomer Sir Bernard Lovell captures the ethos of the day. "For people of the interwar era, science and technology became the God through which man was seeking the road to economic and

[10] Yet he is a key person who also questions the certainty of empirical seeing. A recommended resource on the history of science is Colin Russell's *Cross-Currents: interactions between science and faith*. Eerdmans, 1985.

[11] This is what postmodernists complain about in regards to science's hegemonic/will to power cultural claims.

intellectual salvation."[12] Scientists were venerated as *gods*. The faith and hope in science was very high, exhibiting a hard-core scientism.

The optimism about science and its powers lasted until the first atomic bomb at Hiroshima, and the bloodshed and massive destructive outcomes of technological advances in World War II. Cities lay in ruins and some 100 million lives were cut short. There were huge advances in technology and science during the war to help both sides get the edge in the global battle (radar, code breaking, rocket engines, tanks, and incendiary bombs and finally the nuclear bomb). It was as if humans re-invented the capacity for evil on a mass scale, using our brightest scientists, such as Heisenberg in Germany. This is dramatized in the Netflix series *Heavy Water*. People were left in utter shock at how massively destructive science's powers could be, especially when backed by a huge imperialistic political appetite. A review of WW II footage sickens the stomach at the terrible carnage and losses on all sides. People witnessed graphically instrumental reason's reduction of human beings to cattle, slaves or objects of experimentation in the Buchenwald and Auschwitz concentration camps or in the Gulag. This was scientism at its worst, leading many down dark, nihilistic paths.

In the early 1990s at the end of the Cold War, humanity took a deep breath, stepped back from the abyss of nuclear holocaust and took on more awareness of the tremendous environmental costs of science, technology, industry and excessive Western consumerist lifestyles. The environmental movement made significant advances in this decade. We became acutely aware that, just because we could do something with scientific know-how, it did not necessarily imply that it was good for us or good for the planet. We now realize that we are in the age of *Anthropocene*: where the biggest impact on the environment is the human factor. Postmodern sentiments grew strong in this decade with heavy questioning of the scientism outlook and perceived hegemony of the scientific culture sphere. Post-Romantic philosophy began to flourish in the universities: rather than the issue being rational versus irrational, it became a matter of the credibility of 'Whose rationality?'.[13] This is the era when science began to look more like a *poisoned chalice*. We were ambivalent; science was good but no longer a panacea of health and wealth. It was now clearly realized to be employed for both good and evil purposes and required ethics to guide it. Science without religion and ethics needed to give account for its complicity with evil, its *bloody hands*. Limits are necessary for good science, and good uses of science.

In the early twenty-first century, we have seen the rise of religion rather than its demise, as predicted by sociologist Durkheim. After the tragic events of September 11, 2001, no longer could one claim that religious discernment was irrelevant.[14] We have also witnessed some of the worst corruption and corporate greed in human history, achieved by powerful people of a utilitarian, self-interest mindset (Enron and Worldcom fiascos and sub-prime mortgage scandals that lead to a major recession in 2008 that almost stopped the world). Mathematical geniuses exiting Cold War nuclear weapons jobs offered to show us the *magic* of logarithms applied to the stock market and

[12] Sir Bernard Lovell*, In the Centre of Immensities*. (1978, 157).

[13] Alasdair McIntyre (1988), *Whose Justice? Which Rationality?*

[14] The rise of fundamentalisms, however, have also shown the dark side of religion (Islamic, Hindu, Russian Orthodox, evangelical anti-science and prosperity gospel aberrations) as well as its benefits to meaning and human flourishing.

derivatives (new investment weapons of mass destruction, notes prominent investor Warren Buffet). Today we are seeing the pressing loss of massive numbers of jobs due to the rapid emergence of artificial intelligence and robot technology (transhumanism). Science and technology clearly need wisdom at their side as we navigate the future.

Over the course of three centuries, we have moved from elation over the power of science to the utter arrogance and hubris of scientism, to the dogmatic, closed philosophical worldview spin of materialistic naturalism (CWS). Early in the twenty-first century, scientism is held under hermeneutical suspicion, heavily questioned and deconstructed, shown to be wanting in many respects. Many people agree that that science is necessary, but not sufficient. Religious, aesthetic and ethical questions must be raised and examined once more, the sciences need ethical, religious and philosophical checks and balances. Wisdom, virtue and the common good need to be brought into dialogue and debate with science and technology. A whole group of scholars today are asking whether good reason requires scientific materialism in our *post-secular* age.[15] Influential philosophers such as Alvin Plantinga (2012), Charles Taylor (2007) and David Bentley Hart (2013) do not believe that a secular, anti-transcendent outlook follows logically from the blossoming of science. We pick up this critique in the volume *The Great Escape from Nihilism* (G. Carkner, 2016).

Part III. Scientism Under Investigation

Despite popular belief, the integrity of scientism is questionable, most scientists do not share its hubris. Most researchers work humbly day after day to serve humanity through their diligence and perseverence. It is still, however, a strong influence in Western culture. Scientism is based on an outdated world picture and outdated physics (Classical Newtonian), a skewed view of science itself. Ultimately, it is erosive of our concept of humanness, entailing serious anthropological implications (transhumanism) or damage to human identity and society, contributing to the crisis of self, nihilism and the loss of meaning. By shutting out religion and moral accountability, it can also justify the wealthy élites to take advantage of the poor and vulnerable.[16] The following questions hold scientism up to scrutiny, with a view to better discernment of the place of science in society and in its relationship to meaning and religion.

1. Scientism Holds an Inaccurate View of Science

From the time of Francis Bacon to the early twentieth century, the popular cultural picture of a scientist was the following. The scientist was a researcher, detached and unemotional, methodically solving scientific problems and making discoveries through cool logic and observation. This person would begin by collecting data by some purely objective manner free of all prejudices and biases (disinterested in the outcome of experiments). There are no prior preferences, no religious or philosophical presuppositions, no subjective constraints. By means of pure induction, the correct generalizations and explanatory principles emerge out of the assembled and organized data: the results are objective, the process empirical. Patiently, facts were added to facts, laying one brick of knowledge upon another. This is often the *mythological* concept of a

[15] See Phillip Blond (ed.), *Post-Secular Philosophy: between philosophy and theology.* Routledge, 1998.

[16] Of course, anti-science leadership, denying global warming, can also exploit the vulnerable.

scientist today (the image which dominates in public media) but it is not true to what most scientists practice at their benches. The myth is called *objectivism*, the belief that science is a strictly objective exercise, which is independent of the observing scientist.

Biochemist and philosopher Michael Polanyi tells a different story that is closer to actual scientific practice and recent notions of Einsteinian physics; it is a story about a scientist's personal involvement in scientific knowledge. Here are some of the key points that he makes in his important book (M. Polanyi, 1958) *Personal Knowledge: towards a post-critical philosophy*. The scientist is the ultimate judge of what is accepted as true. Far from being neutral at heart, the expert is passionately interested in the outcome of the procedure.[17]

a. Data is theory-laden: the choice of relevant data is affected by the scientist's theoretical glasses or postulation. There are specialties in theoretical physics and chemistry today.

b. Theories are imaginative human creations and not a mere summary of data. They always need to be continually improved (*critical realism*). This implies that there is an *art* to science, an aesthetic or architectural dimension.

c. New discoveries involve value judgments at every stage from conception of a problem to scientific conclusion. Interpretation of findings is a vital part of science.

d. Quantum physics shows that the outcome of an experiment is partly dependent on the approach of the observer and the questions that she is asking. This is not to say that science is a mere subjective task.

e. The scientific community holds certain corporate values and operates as an adjudicator as to what is and is not acceptable science (major scientific journals and boards). Discoveries are presented to the scrutiny of peers with *universal intent*. The community also mentors young scientists in these skills and values, including appropriate decorum. Scientific cheats and fakes do exist, but they are not dominant because of this peer scrutiny.

Science itself, behind the curtain of public viewing, is much more complex than simple objective induction. There is more subjective, artistic and imaginative involvement than was once thought to be the case. It turns out that scientific knowledge *is personal knowledge,* claims Polanyi, brokered by persons with a serious investment in the integrity of science and the theoretical proposals they put forward. Jens Zimmermann (2015) points this out in more detail in his *Hermeneutics: a very short introduction.*

[17] Michael Polanyi, *Science, Faith and Society*. (Chicago: U. of Chicago Press, 1964), p. 38. See also Polanyi's (1958) *Personal Knowledge: towards a post-critical philosophy,* for a fuller articulation of this point. It is also important to note that scientism is based on a Newtonian cosmology, which to some extent has been replaced by Einstein's relativity theory and quantum physics.

2. Scientism Perverts the Principles of Science (reductionist epistemology becomes shrunken ontology).

Scientism does not square with established, credible science. Rather, it involves a perversion of the principles of science, producing a dogmatic and illegitimate worldview. Superstition and ideology enters the picture.

a. The empirical principle turns into *exclusivistic empiricism*, the assumption that any credible belief must be scientifically testable and controllable. Religious revelation would be ruled out on these grounds. But there are lots of beliefs required as a foundation for science that do not pass this test. Thus, it is a self-defeating, unsustainable position.

> Of its very nature, scientific investigation takes for granted such assumptions as that: there is a physical world existing independently of our minds; this world is characterized by various objective patterns and regularities; our senses are at least partially reliable sources of information about this world; there are objective laws of logic and mathematics that apply to the objective world outside our minds; our cognitive powers – of concept-formation, reasoning from premises to a conclusion, and so forth – afford us a grasp of these laws and can reliably take us from evidence derived from the senses to conclusions about the physical world; the language we use can adequately express truths about these laws and about the external world; and so on and so on. – (Professor Edward Feser, *The Last Great Superstition*)

One must be a strong believer in these basic premises to begin her day as a scientist.

b. The art of observation and measurement of the physical, immanent time-space-energy-matter world turns into atheistic/materialistic Naturalism, a Closed World Structure, the belief that nothing but material dimensions exist. This move from a limited epistemology (empirical science) to an ontological belief (there is no God and it is a purely material world) is a logical *non-sequitur,* a bad/faulty philosophical move. This anti-metaphysics move reveals a bogus tendency to 'make metaphysics out of a method'. Many do this without realizing its perversion has occurred in their minds.

c. As to the method of control, prediction and repetition in science, mechanistic, quantifiable analysis turns into the belief that 'all is machine' including people, the reductionistic conviction of *mechanism.*[18] This entails the belief that we are 'nothing but' our neurons, physiology or genetic material, at bottom our physics and chemistry.

[18] See E.F. Schumacher's (1977) *A Guide for the Perplexed* for a brilliant exposure of problems b and c. See also N. Murphey and W. Brown (2007).

d. The openness of scientific theories to future correction (*critical realism*) corrupts into a utopian fantasy of *optimistic progressivism*, the belief that science will bring inevitable material progress and wellbeing to all.[19] It is the wrong kind of optimism.

The principles of science are valid and necessary to the discipline; the philosophical extrapolations of scientism are fallacious leaps of faith, meta-physical claims which are beyond scientific proof or demonstration. This extrapolation of science to the ideology of scientism (using science as a weapon against religion or the humanities) is completely inappropriate. Nobel Prize winner Dr. Peter Medawar senses the problem:

> There is no quicker way for a scientist to bring discredit upon himself and upon his profession than roundly to declare ... that science knows or soon will know all the answers to all the questions worth asking, and that questions which do not admit a scientific answer are in some way *nonquestions* or *pseudoquestions.*[20]

Science is out of its own bounds when it makes such metaphysical claims, for it has no authority or jurisdiction to make such claims about the nature of being. When used this way, it automatically *falsifies* and clouds our perceptions. Unfortunately, many of the New Atheists (Dawkins, Dennett, Hitchens, Harris) inappropriately and constantly use science to support their fundamentalist atheistic philosophical convictions.[21] They claim to be without faith, but show a willful, *blind* faith in ideological scientism. It entails a religious, not a scientific, commitment (Mikael Stenmark, 1995).

3. Scientism is not Honest about the 'Methodological' Limitations of Science.

Extending the last point, we must look briefly at science's own disciplined self-limitations. Science, or *natural philosophy,* the love of wisdom about natural things, as it was called in the medieval period, has its own integrity when it does not exceed its proper limits and seek to police the questions we are permitted to ask, or invade illegitimately the territory of other disciplines. There are scientific and non-scientific questions worthy of investigation. In general, science is appropriate to the study of cause-effect relationships at the physical level of being (*efficient causes*), but not to adjudicate questions of purpose, meaning or worldview (*final causes*). Science cannot sustain a secular humanist outlook; it was never designed to do so. The following important limitations ensue and reveal how scientism is self-defeating.

> Question of Scientific Integrity: There is no such thing, at least among finite minds, as intelligence at large: no mind not constrained by its own special proficiencies and formation, no privilege vantage that allows any of us a comprehensive insight into the essence of all things, no expertise or wealth of experience that endows

[19] Quentin Schultze (2002) in *Habits of the High-Tech Heart* exposes the utopianism in contemporary high tech culture.

[20] Dr. Peter Medawar, *Advice to a Young Scientist*. (New York: Harper & Row, 1979), p. 31.

[21] Read Alister McGrath (2010) *The Dawkins Delusion* for a response to this problem, or John Lennox, *God's Undertaker* (2009).

> any of us with the wisdom or power to judge what we do not have the training or perhaps the temperament to understand. To imagine otherwise is a delusion…. This means that the sciences are, by their very nature, commendably fragmentary and, in regard to many real and important questions about existence, utterly inconsequential. Not only can they not provide knowledge of everything; they cannot provide complete knowledge of anything. They can yield only knowledge of certain aspects of things as seen from one very powerful but inflexibly constricted perspective. If they attempt to go beyond their methodological commissions, they cease to be sciences and immediately become fatuous occultisms. (David Bentley Hart, 2013, 75-76)

a. Science begins with certain assumptions, but it cannot prove them *scientifically,* nor are they based on experiment. They are taken on as axioms for the scientific enterprise to proceed. Many originated in a theistic philosophical context in the seventeenth century at the dawn of Western science, with the dominating idea of an ordered universe established by a Creator: the rationality of the world, the rational ability of the scientist to connect with that world. Science needs a philosophical/theological framework within which to operate (a suitable worldview). Biophysicist Tom McLeish (2014) of Durham University is probably making this claim as strongly as anyone. Science is derived from the rational method of philosophy and is dependent on it for estimates as to the meaning and value of what is proposed, observed, discovered and interpreted. Theology and philosophy provide science with key givens before the scientist can enter the lab. Science as a discipline is not intellectually self-sufficient, but needs a faith infrastructure: a set of axioms. Some scientists can only claim (*mythologize*) independence artificially. Theologian D. Stephen Long captures it:

> Faith adds less a material content to geology, physics, mathematics, evolutionary science, economics, etc., than the form within which they can be properly understood so that they are never closed off from the mystery that makes all creaturely being possible.[22]

In this sense, scientists are also theologians. They inadvertently accept theist assumptions within their reflective task. Einstein was in wonder that humans could understand the world.

b. Science cannot legitimately address several of the most important human questions. Science involves a limited skill set and a limited field of inquiry, necessarily so. It has no official monopoly on the questions humans should seriously address: questions of morality, global or individual meaning, questions of ultimate entities, questions of qualitative distinctions, or purpose. Liebnitz' famous question, *Why is there something rather than nothing?,* is profoundly important but not a scientific question. Important things such truth, meaning, purpose, goodness, community are not scientific facts or points of scientific conversation. They are immaterial relations and yet they are critical for human flourishing, sense of self and a robust vision for the world and the narrative in which we are deeply embedded. In fact, many things which are essential to personhood (thoughts, emotions, imagination, dreams, secrets, hopes, fears, doubts, longings) are not visible under the microscope, or examinable in a test tube. But they constitute key dimensions of the self. Mikael Stenmark (1995) points out that there is a mental world, a social world, an emotional world, a moral world, and a transcendent world, each with its own issues of vital interest and study to humanity. The physical world of scientific study is only one world among many. But they all intersect and influence one another as part of an organic whole like the various organ systems of

[22] D. Stephen Long, *Speaking of God: theology, language and truth* (2009) p. 135.

the body. Parallel to this insight is Calvin Schrag's (1997) statement on the four culture spheres: science, religion, ethics and aesthetics. It is unhealthy to implode one into another.

Thus, a scientist has no grounds for pontificating on the existence or non-existence of a Supreme Being, the value or danger of religion. Such claims are academically out of bounds. They are philosophical, historical or theological claims, outside of the arena of scientific expertise and methodology. The tendency for scientists who claim such insight/expertise is to butcher the subject and the analysis (Richard Dawkins is a prime example). Sometimes we are so amazed by science's success that we can become blind to the fact that it is a very restricted and incomplete form of knowing. Epistemological humility is called for. Many of our top scientists realize that openness to other venues of insight is needed to complement our scientific expertise. It is best not to over-claim. Science as a discipline has integrity when it does not exceed its proper limits and seek to rule out certain questions, answers or postulations as a *fait accompli*.

4. Scientism Entails Logical Problems as Noted by Several Respected Philosophers

a. Scientism as a philosophical claim becomes shipwrecked on its own rocks. The key claim of empiricism or positivism (that only what is empirically testable is true/valid) is self-defeating. It cannot be justified *empirically*. Circular arguments are philosophically unimpressive. Famous positivist A. J. Ayer eventually admitted that his system was bankrupt, although long after it had done much damage. The claim that only factual statements have validity is itself *non-factual*, speculative, even close-minded. Here's an example of the circular, tautological logic.

> Tautology of Scientism: Physics explains everything, which we know because anything physics cannot explain does not exist, which we know because whatever exists must be explicable by physics, which we know because physics explains everything. (D. B. Hart, 2013, 77)

b. We are continually challenged by the reflective meaning in the minds which we use every day. Confronting determinism and the loss of free will, English scholar C.S. Lewis[23] exposes another internal contradiction (issue of coherence) in scientism. It leads us down a path to an irrational position. It undermines human reason if we naively buy into philosophical Naturalism or atheism as a worldview, the closed world picture along with its reduction of the human. Lewis writes,

> If my mental processes are determined wholly by the motion of atoms in my brain, I have no reason to suppose that my beliefs are true ... and hence I have no reason to suppose my brain to be composed of atoms.[24]

Dr. Richard Johns, a philosopher of science at Langara College in Vancouver, has a brilliant critique of determinism that follows suit (https://ubcgcu.org/2014/10/06/richard-johns-on-materialism-and-creativity-ubc-october-21/). He shows that there are significant problems for scientific creativity based on scientific materialism. Alvin Plantinga adds extra potency to this argument in his book *Where the Conflict Really Lies* (A. Plantinga, 2012, Chapter 10). He sees a

[23] Lewis addresses scientism in *Abolition of Man* (1953) and *Miracles* (1947)

[24] C.S. Lewis, Miracles (New York: Macmillan, 1947), p. 15. Charles Taylor has an even more sophisticated understanding of this dilemma in Chapter 15 of *A Secular Age* (2007). Also see the brilliant work of Nancey Murphy & Warren Brown (2007) *Did My Neurons Make Me Do It?* on the issue of morality and neurons.

major conflict between science and philosophical Naturalism. Reason is necessarily more than brain, more than a mere neuro-physiological process. Under the *hard problem* in philosophy of mind, when we are asked to believe in reason deriving from non-reason, consciousness from unconscious matter, we uncover another logical *non-sequitur*. Some kind of transcendent, self-existent reason must exist in order to justify and comply with human rationality and the very legitimacy of scientific discovery. Reason cannot be reduced to physics and chemistry, or we will lose it in a philosophical implosion. We will lose the transcendence of mind over body that we need to flourish, stay mentally healthy, and to trust our own thoughts and truth claims, or even direct our lives.

Scientism pushes us towards complete irrationality: mind, reason, free will and thought can have no real existence. They are merely *epiphenomena* of matter (the only *real* thing). By collapsing everything into the physical, scientism implicitly undercuts the very validity of rational thought, and guides science itself into an unfortunate intellectually skeptical *cul de sac*. We also loses free will and agency in the process. Brilliant Stanford neurobiologist William Newsome, notes that our brains grow new neural networks as we are educated and learn new skills, a phenomenon known as *plasticity* (https://www.youtube.com/watch?v=o0b7pEuE-eg&t=12s). This indicates the importance of the top down (mind to brain), as well as the emergence from the bottom up (neural networks) as the infrastructure of mind, without which it is dysfunctional. Consciousness, the hard problem in philosophy of mind, poses a challenge to reductionists, especially when we realize the importance of reflective transcendence (*res cogitans*). One could also mention another intriguing fact of reality: there is a massive amount of information in one small living cell. All systems with information need this information input. Information is not the product of the physical, but completely necessary for the function of the physical world.

Scientism deprives science of other types of reason (approaches to truth), which can enrich and empower science as a discipline; it denies the rich complexity of the world that amazes us every day. Long (2009) wisely notes that, "Every account of reason assumes something beyond it, some enabling condition that makes it possible but cannot be accounted for within its own systematic aspirations."[25] Physicist James Cushing notes that there are several philosophical concepts in physics.[26] The reasons of faith and the reasons of science are mutually enriching if rightly understood. Creation (the natural world), although significant, is not self-interpreting. Its meaning resides beyond it. Creation is a brute fact until we humans give it value. We need more information from outside the system to fully understand it. The problems with scientism is a *sign* which points beyond the world of immanence, to a transcendent dimension. It is highly suggestive.

> Category Mistake: The most pervasive error one encounters in contemporary arguments about belief in God–especially, but not exclusively, on the atheist side–is the habit of conceiving of God simply as some very large object or agency within the universe, or perhaps alongside the universe, a being among other beings, who differs from all other beings in magnitude, power, and duration, but not ontologically, and who is related to the world more or less as a craftsman is related to an artifact…. Beliefs regarding God concern the source and ground and end of all reality, the unity and existence of every particular thing and the totality of all things,

[25] D. Stephen Long, (2009, 135)

[26] James Cushing, *Philosophical Concepts in Physics: the historical relationship between philosophy and scientific theories.* (Cambridge University Press)

> the ground of the possibility of anything at all…. As it happens, the god with whom most popular atheism usually concerns itself is one we might call a "demiurge" (*demiurgos*): a Greek term that originally meant a kind of public technician or artisan but came to mean a particular kind of divine "world-maker" or cosmic craftsman (D. B. Hart, 2013, 32-33, 35).

Alister McGrath (2009) brilliantly shows the compatibility between trinitarian theism and the fine-tuned universe that astronomy and biology study. He reinforces the point being made by Hart.

5. Scientism Impoverishes our View of Humankind

Scientism is not conducive to a holistic or healthy view of humans. Its reductive character has contributed to a devaluation of personhood through various destructive ideologies in the twentieth century. Dehumanization of persons is the result of treating them in terms of their *machineness* or their *biological being* alone. Scores of books have addressed this problem. In a very devastating sense, modern culture is deprived of some of the richest interpretations of the nature of humanity that history has available.[27] E.F. Schumacher (1977, 45) captures the problem of scientism for personhood in rather shocking terms.

> The Universe is what it is; but he who ... limits himself to its lowest sides—to his biological needs, his creature comforts or his accidental encounters—will inevitably 'attract' a miserable life. If he can recognize nothing but 'struggle for survival' and 'will to power' fortified by cunning, his 'world' will be one fitting Hobbe's description of the life of man as 'solitary, poor, nasty, brutish and short'.

We note here the distinct lack of wisdom in viewing humans as *mere animals* or a commodity. This is the kind of reductionism that leads to alienation, human rights abuse, cynicism, even nihilism, as we see in the oppression by malevolent élites or dictators. The movie *The Way Back* depicts such brutish conditions of Stalin's Siberian labour camps.[28] One also sees this story writ large in the book *Stalin's Daughter* (R. Sullivan, 2015). Scientism is easily exploited by a political ideology that is disconnected from the moral good and the common good. It carries the potential to be used in the most destructive ways on humans and nature, promoting a nihilistic *anti-humanism.*[29]

Truth is submitted to power if we withdraw love from social and political reality in the name of science. This is fallacious. Philosopher Emmanuel Lévinas (*Humanism of the Other*) clarifies that there is still a tremendous failure in radical individualism, a crisis in late modernity

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[27] Huston Smith, *Beyond the Post-Modern Mind.* (Wheaton: Quest, 1989), pp. 98f. Many of the nastier political experiments of the twentieth century did just that.

[28] See also Solzhenitsyn's book *A Day in the Life of Ivan Denisovich.* Canadian bestselling novelist David Adams Richards begins his book *God Is* (2010), which includes a character analysis of Joseph Stalin and just how absolutely ruthless he was.

[29] Charles Taylor (1989) notes that the three competing *hypergoods* in our day are: Christian humanism, scientific/atheistic humanism and Nietzschean anti-humanism (one questions whether anti-humanism is a good).

to *take responsibility for the Other*. Such responsibility is basic to our ethics and our civility. It should not be a surprise that we have a crisis of identity if we look to the beasts, our evolutionary ancestors or machines (transhumanism) to find our truest and best selves. Scientism is the Grinch that stole our meaning; it has made a caricature of human existence. To paraphrase a famous quote from French scientist and theologian Blaise Pascal, "Faith/life has its reasons that scientific reason knows not of."

Part IV. Integration, the Way Forward to Human Wholeness and Whole Truth: Fruitful Dialogue with Science.

All philosophy is a participation in humanity's common struggle to attain truth. We know well, especially in our post-truth society, that there can be no freedom or justice without a high value on truth. All forms of terror and oppression involve manipulation, falsehood, propaganda and deception. The oppressor tries to manufacture truth to suit himself and justify his autocratic methods. This paper grapples with such language deflation. It constitutes a search for fresh, engaging metaphors to map the plenitude and multidimensionality of life. If scientism, as described thus far, is problematic and even destructive in its human and cultural consequences, what constitutes a more holistic outlook? What is a more integrated stance with respect to the wonders of science and the mysteries of the self and the full human imagination? What is science's place in late modernity amidst beauty, goodness, spirituality and other forms of knowledge? We would like to make three suggestions to set the conversation/dialogue in motion.

Recovery Point One

Firstly, it is our conviction that science must be more engaged with, and tempered by, wisdom. Natural philosophy or science is *philo-sophos,* the *love of wisdom about natural things.* That prompts persons to use all the skills of reason in the quest for truth, goodness and beauty. Rationalism is disingenuous in pitting scientific truth against beauty and goodness. Intellectual Jacques Maritain cautions that 'science without wisdom is blind'. It is also dangerous as a form of power when the ethics involved is arbitrary and self-serving. Upon deeper reflection, genuine knowledge is the cultivation of the virtue of wisdom, which entails that all knowledge including science benefits from a relationship with both the intellectual and moral virtues. Science within its appointed limits attends to matters of fact, quantity, cosmic order, matter and anti-matter, the physical forces and the realm of stars and galaxies (the *what* and *how* questions).

Wisdom, however, has a large vested interest in the qualitative conditions of life and research (the *why* questions): relationships, trust, meaning, purpose, value, idea, narrative, appropriate application of knowledge and other meta-issues. Even Nietzsche understood the importance of the why questions. Neither aspect should be ignored in the quest to attain a *whole* and *integrated* truth. They ought to be interwoven for strength and balance. Both are key if we are to make sense of the universe's richest *intelligibility*. Albert Einstein, aware that science is not the last word, once wisely countered the mentality of scientism with the cryptic phrase: "Everything that can be counted does not necessarily count; everything that counts cannot necessarily be counted." It is valid to ask whether the universe has a purpose beyond the mere fact and functionality of its wondrous existence. In all its vastness and complexity, does it dwell within a larger context? We possess within us the curiosity and desire to know *all truth* about our world and ourselves, and not

to settle for partial, one-sided answers.

As we have seen from brutal experience, science and technology employed without a conscience can be soulless, dangerous and death dealing. Drones can be used to do creative aerial photography or to assassinate a perceived enemy without trial. Einstein felt this worry personally as he worked with other scientists on the breakthrough physics that lead to the splitting of the atom, and ultimately the first atomic bomb. The 1945 bombing of Hiroshima and Nagasaki in a terrible way proved his gut suspicions. Think of all the people who died of malnutrition and starvation while we were pouring billions into our forests of weapons of mass destruction. Science employed to its best ends, like other forms of philosophy, is geared to improve the *common good* of humanity, not to destroy dignity or deprive people of personhood.[30] Scientists need philosophers, theologians and ethicists to reckon with the bigger picture and the broader implications of their research and inventions. They are essential partners in the pursuit of knowledge and wisdom.

Wise scientists should take responsibility for the human and environmental consequences of new research and technology, and they ought not hide behind mere collection of facts about the *physical realm*. University of Montana philosopher of technology and culture, Albert Borgmann (1984), agrees as he examines how current technology has shaped society and impacts how we see ourselves.[31] The DVD series *Test of Faith,* from the Faraday Institute of Science & Religion in Cambridge, England, raises many of these important *why questions* at the cutting edge of research, through a dialogue with top British and American scientists, theologians and historians of science. Some of the tough questions addressed in this series are: *What grounds science ideologically and culturally? Whence comes the mathematical order? Why is there something rather than nothing? Are science and Christianity in a deadlock conflict, or is there possible synergism between science & faith? Does the Big Bang eliminate the need for God? Can humans be explained fully in terms of their genetic template? Does one transcend one's neural networks in making moral decisions or are they predetermined? Does one's biology determine one's value and destiny?* These scientists strongly value and respect science, but they realize that it is not the only necessary form of reflection, nor does it in any way exclude the legitimacy of religious and theological reflection. They help shape a robust dialogue between religion and science, and cherish the overlapping concerns and quest for truth.

This is also important to a *theology of science* as Biophysicist Tom McLeish (2014) articulates.[32] He sees a connection between biblical wisdom literature and the task of science. A robust definition of reason, including scientific reason, does not make sense outside of this larger

[30] Former Oxford Geographer James Houston in *Joyful Exiles: Life in Christ at the dangerous edge of things* (2006) worries that culturally we have allowed the scientism of Modernity to destroy our personhood and our spiritual self.

[31] Albert Borgmann, *Technology and the Character of Contemporary Life*. (University of Chicago Press, 1984); see also Steven Bouma-Prediger's *For the Beauty of the Earth* (Baker Academic, 2011) on the impact of science on the environment.

[32] Tom McLeish, *Faith and Wisdom in Science.* (Oxford, UK: Oxford University Press, 2014)

framework, outside of the linkage of knowledge and wisdom.

> We know better than to swallow an inadequate narrative that portrays science as simply replacing an ancient world of myth and superstition with a modern one of fact and comprehension…. Science is 'the love of wisdom of natural things'..… Its primary creative grammar is the question rather than the answer. Its primary energy is imagination rather than fact. Its primary experience is more typically trial rather than triumph—the journey of understanding already travelled always appears to be a trivial distance compared with the mountain road ahead. (T. McLeish, 2014, 102)

Other angles explored by McLeish in his book include: Doing science is very old. Science is a deeply human activity. Science is more about imaginative and creative questions than it is about method, logic or answers to those questions. Science can be painful. The relationship between 'faith' in all its connotations and 'science' is a long and rich one. McLeish delivers a picture of science as a questioning discipline nested within a much older, wider set of questions about the world, as represented by the searches for wisdom and a better understanding of creation in the books of Genesis, in Proverbs, in the letters of St. Paul, in Isaiah and Hosea but most of all in that wonderful hymn to earth science known as the Book of Job. He refuses to see science as anything less than a deeply religious inquiry.

Wisdom is a virtue which is prior to, and necessary for, good scientific insight. It is also a valuable companion in the application of scientific discovery. Science is dependent on the best human and divine wisdom for direction, application and meaning, even when individuals do not have this awareness. It operates with a set of underlying metaphysical assumptions that it cannot prove. Poetry, the language genre in which wisdom often appears to us, proceeds from the totality of human sense, imagination, intellect, love, desire, instinct, blood and spirit together. The metaphors of wisdom are equally important to the inductive scrutiny of science. Virtues like prudence, courage, justice, self-control, honesty and other virtues are deeply relevant to both daily life and the scientific enterprise. Something that is clear to major decision-makers is that technological, statistical and scientific expertise is always helpful, but incomplete for adjudicating many issues that they face. Science, while it is a good method for investigating and manipulating the material world, is of much less value for deciding what to do with the knowledge and power acquired. In this light, twentieth century physicist, philosopher and historian of science, Pierre Duhem, provocatively argues for the priority of metaphysics and religion over physics. Psalm 90 to 103 gives a phenomenal range of wisdom, richness of insight about God and his world, and a tremendous aesthetic and scientific motivation to carry on our study. The Psalms and other biblical wisdom literature provide some of the motivation and infrastructure or *deep structure* of scientific investigation.

Philosopher Calvin Schrag (1997) urges respect for the significance of all four culture spheres: *aesthetics, ethics, science and religion*.[33] Scientific reason is only part of the human economy and should not dominate, oppress or eliminate other culture spheres. It should interact

[33] Calvin Schrag, *The Self After Postmodernity*. (New Haven: Yale University Press, 1997), Chapter 4, "The Self in Transcendence", especially pp. 133-35. He believes that Immanuel Kant is responsible for splitting these culture spheres from each other in Western thought.

with them in balance and tension, and benefit from their checks and balances, as well as their creative questions. Science, in its study of the cosmos, is master of one important theme in the story of life, but not the whole story. Some of the most important issues and decisions we struggle with are relational, moral, issues of beauty, purpose, wonder, life as gift and our religious identity. Many scientists now realize the importance of value judgments in the economy of scientific reason because of the groundbreaking work of biochemist and philosopher Michael Polanyi mentioned earlier. There are stunning resources available in the world's great wisdom literature, such as the Classics (Plato, Aristotle), the biblical Book of Proverbs, Psalms, Job, ancient literature that has stood the test of time.

Today, there is a revival of interest in virtue ethics applied to academic work, as in Linda Zagzebski's (1996) *Virtues of the Mind*.[34] A good scientist is guided by a genuine search for truth, a humble willingness to change one's theory when new evidence challenges it significantly (critical realism), humility in view of the limits of scientific knowledge. It includes honesty in reporting and interpreting data and reports of who did the actual work (professor or graduate student), respect and care for the subject or object under study, collegiality to share versus hoard key information for ongoing discovery. It respects the larger scientific community, shows generosity and benevolence for the good human use of the research, gratitude for the opportunity to be in a field of discovery. Sir John Polkinghorne (1987), noted physicist and theologian from Cambridge University, among other excellent scientists[35] agrees that we would also add gratitude to the God who created the wondrously beautiful and complex world, this cosmic gift we hold under study and that feeds our children. There is a *way of wisdom* for the scientist as well as the sage. Perhaps we should resurrect our sages once again to inform our science and bring new humility and servanthood to the various fields, wise stewardship of scientific resources and discovery.

Recovery Point Two

Secondly, we must retrieve excluded knowledge[36], addressing the refusal of the *transcendent insights* inherent in scientism, including that biases endemic to the infamous New Atheists.[37] During the Cold War, the Russians often constructed city maps that excluded churches, a practice that made it difficult for tourists. They wanted to eliminate knowledge of religion. In his important discussion of the "Immanent Frame", Charles Taylor (2007, Chapter 15) offers some very useful

[34] Linda Zagzebski's (1996) *Virtues of the Mind*. Steven Bouma-Prediger (2001) has a brilliant statement on the virtues of creation care in *For the Beauty of the Earth*.

[35] Edward Larson, a historian of science then teaching at the University of Georgia, recreated Leuba's survey, asking the same number of scientists the exact same questions. To the surprise of many, Larson's 1996 poll came up with similar results, finding that 40% of scientists believed in a personal God, while 45% said they did not. Other surveys of scientists have yielded roughly similar results." from http://www.pewforum.org/2009/11/05/scientists-and-belief/

[36] An allusion to E.F. Schumacher (1977), *Guide for the Perplexed*.

[37] See the answer to Dawkins in *The Dawkins Delusion* by Alister and Joan McGrath (2010); also see John Lennox, *God's Undertaker: Has science buried God?* (2009)*; and Rebuilding the Matrix: Science and Faith in the 21st Century* by Denis Alexander (2001).

discernment, noting that transcendence can be read from two opposite angles, both of which involve faith. It goes beyond mere rational argument or evidence.

> We can either see the transcendent as a threat, a dangerous temptation, or an obstacle to our greatest good. Or we can read it as answering to our deepest craving, need, fulfilment of the good. … Both open and closed stances involve a step beyond available reason into the realm of anticipatory confidence.[38]

Within late modernity's immanent frame, Taylor points out that things do go both ways, as shown by the case of professional scientists: atheists become Christian and Christians become atheists. Taylor is most concerned about the *spin* whereby someone claims that a closed view (CWS or closed world structure) is taken as obvious and conclusive: that we exist unavoidably because of science as *material beings in a material world*. This spin of closure although not universal, is often quite hegemonic in the Academy, often rendering the supernatural dimension of life *unthinkable*. Taylor challenges, "My concept of spin … implies that one's thinking is clouded or cramped by a powerful picture which prevents one from seeing important aspects of reality, … [promoting] unrecognized ways of restricting our grasp of things."[39]

Taylor calls this CWS a *horizontal world* or way of grasping meaning which can include an intentional *self-blindness,* partly because of the lack of one's conscious awareness of the background picture (assumptions) to one's thinking. A *world*, Wittgenstein's idea of an unconscious picture which holds us *captive*, is something which people inhabit. It gives the shape of what they experience, feel, opine, see, and controls the way they think, argue, infer, make sense of things. Taylor also refers to this as a *social imaginary*, from which people take their identity or sense of self, and their posture towards the world. But Taylor points out that a CWS is a form of construction, and no mere discovery or simple registration of external reality. He exposes the illusion of the rational "obviousness" of this viewpoint.[40]

There are real phenomena that we cannot see because of our world picture. For example, he notes that belief in the death of God is not a property of the cosmos that science lays bare, even though many in the West hold to this faulty logic. It is a choice, even if an unconscious one, a *value-laden* meta-position. Dawkins is in denial of his faith position in scientism, as was pointed out in a debate with Oxford mathematician John Lennox at University of Alabama https://www.youtube.com/watch?v=zF5bPI92-5o . Science itself does not lead us logically to atheism or Godlessness.[41] In fact, the power of materialism today comes not from the scientific "facts", but rather speaks to the power of a certain package uniting materialism with a moral

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[38] Charles Taylor, *A Secular Age*. (2007), pp. 548 and 551. Read the whole of Chapter 15 for deep insight into this phenomenon.

[39] C. Taylor, 2007, 551.

[40] C. Taylor, 2007, 556.

[41] C. Taylor, 2007, 569. In fact, NASA astrophysicist Jennifer Wiseman says the opposite: her study of the birth of stars show her the wonder of the Creator; it increases and informs her faith. Even the possibility of a multiverse (which is also beyond scientific demonstration) does not dissuade her from celebrating creation as the magnificent creative work of God.

outlook, the package we call *atheistic humanism*, or *exclusive humanism*. Scientism dismisses the transcendent, often quite crudely, and uncritically. The 2018 INPM conference and the PP 2.0 paper is clearly sympathetic with this concern, recognizing that mature happiness involves values, virtues and the transcendent. This conference invited courage, faith and meaning to the table of serious discourse and scientific research on human wellness.

Taylor proposes a philosophical *turn* toward intellectual and spiritual openness within our current immanent frame: the view that we live inside a time-space-energy-matter world, a natural order, with human flourishing as the priority concern. At the same time, he suggests an exposure of a myth within the ideology of scientism: that science eliminates the need for God and religion. I follow this trajectory in my book (G. Carkner, 2016), *The Great Escape from Nihilism*: the exploration of a transcendent turn to *agape* love. Good science does not seek to close us off from the world in some tight, immanent reality. Instead, it remains open to receiving the *gift* of complete insight, celebrating all kinds of reason.[42] Theology and religion are not the enemy of science, as the full and rich history of science bears out.[43] Rather, there is important complementary insight into the one world (*theistic humanism*) which is pro-science and pro-humanities. One can be open to a relationship with the divine while practicing excellent science (Jens Zimmermann, 2015). We need to improve our map of reality in a way that welcomes science, theology and other insights back into public dialogue/discourse. The modern experiment to live without religion has proved futile, an experiment in cultural *deprivation* rather than genuinee *progress*. It is time to *think differ*ently about old negative science-religion paradigms, and re-examine the historical and philosophical foundations of science with scholars like Colin Russell (1985), Peter Harrison (1998), Dennis Danielson (2000), Tom McLeish (2014) and Alister McGrath (2009).[44]

E.F. Schumacher (1977) is someone who has a very acute understanding of science and technology. He argues a good case for a *non-reductionist* picture of reality in his insightful book *A Guide for the Perplexed.* In his view, we must move beyond mere animal survival knowledge if we are to survive as a civilization. To flourish as a human race, we need more information and insight than science alone can offer. We are cheating ourselves of both insight and personal growth by bowing to the reductive outlook of scientism: its restrictive approach to knowledge. Schumacher urges us to strive for the highest and richest, most integrated possible truth at all levels of being. We are much more than our physics and chemistry can describe, and to say we are finished when we have captured this dimension of understanding is just not wise or practical. He calls us towards an intellectual honesty, to openness to higher orders of reality, to complete and

[42] Famous geneticist and former head of the Human Genome Project, now head of the National Institute of Health Brain Mapping Project, Francis Collins offers two books that are helpful here: *The Language of God* (2006) and his recent *Belief: readings on the reason for faith* (2010).

[43] See Colin Russell (1985), *Cross-currents: interactions between science and faith*. He shows that the split between science and religion only began in the mid-nineteenth century (Victorian Naturalists like Huxley and German Materialists like Haekel)

[44] Colin Russell (1985), *Cross-Currents*; Peter Harrison (1998) eminent Australian humanities professor and specialist in history of science, Dennis Danielson (2000), *Book of the Cosmos*; Alister McGrath (2010), *Science & Religion: a new introduction.*

whole knowledge—*integrated truth*. Swedish philosopher, Mikael Stenmark (1995), has an excellent critique of scientism, on the issue of various types of knowledge, moving us towards a more robust understanding of reality, a more honest picture of the human use of knowledge, and therefore human anthropology.

There are higher realms of being which begin at a level of wholeness and complexity precisely where science reaches its limits. *Higher* in this case does not mean spatially separate, but rather more important, more integrated, better, more real. Such were the convictions and assumptions of some of history's greatest thinkers: Plato, Aristotle, St. John, Cicero, St. Augustine, Thomas Aquinas, Erasmus, Galileo, Pascal, Owen Gingerich, and many other top scientific and cultural contributors. The biblical story and metaphors have much insight into many of the modern problems and questions we have examined in this essay and this leaves us with many good critical tools and significant horizons to explore. This is a vote for the expertise of some interdisciplinary thinkers like Tom McLeish (2014) and Alister McGrath (2009) who study both science and theology, including history and philosophy of science. McLeish is also an expert on medieval thought.

Cutting edge developments in science-theology dialogue are most welcome under such brilliant and original minds as Sir John Polkinghorne (1987),[45] a Cambridge physicist who studied with Stephen Hawking, turned theologian mid-career, and now a world authority on science-religion dialogue. He has many global colleagues among the most productive and active scientists and philosophers: Francis Collins (2006), Alasdair Coles, William Newsome (Stanford Neuroscientist) Alvin Plantinga (2012), Jennifer Wiseman (NASA), Simon Conway Morris (2009), Malcolm Jeeves (2009, 2015), and Katharine Hayhoe (Texas Tech University).

Three key associations are contributing to this vital conversation: the *American Scientific Affiliation* (https://network.asa3.org), *Christians in Science* (UK http://www.cis.org.uk), and the *Canadian Science and Christian Affiliation* (https://www.csca.ca) and the Australian ISCAST (http://iscast.org). They keep the God question philosophically open for people who value science and theological reflection, and see the pressing and vital benefits of this dialogue. This kind of discussion happens at several top universities in Canada, the USA, Europe and elsewhere: *Pascal Lectures* at Waterloo (https://uwaterloo.ca/pascal-lectures/), *Gifford Lectures* in Edinburgh (https://www.giffordlectures.org), *Graduate & Faculty Christian Forum* at UBC (https://ubcgfcf.com), *Veritas Forums* (http://www.veritas.org) at Harvard, Oxford and the Sorbonne and the *Faraday Institute of Science and Religion* at Cambridge University (http://www.faraday.st-edmunds.cam.ac.uk) created by Denis Alexander, a former successful cancer researcher, *BioLogos* (https://biologos.org) created by Francis Collins to reconcile evolution and faith. In fact, if every account of reason assumes something beyond it, some enabling condition that makes it possible but cannot be accounted for within its own systematic aspirations,

[45] John Polkinghorne (1986), *One World: The Interaction Between Science and Theology*. The DVD Test of Faith is a good selection of these minds and the positive tone of this dialogue. He has written a large trove of stimulating books on the topic. He is truly one of the great minds of the twentieth century.

this *something* (theological and philosophical insight) is well worth exploring. It can fuel the creativity and imagination of scientists and the whole scientific enterprise.

Recovery Point Three

Thirdly, we move beyond scientism's caricature of human existence, towards a healthier picture of persons. We want to recover our lost heritage of Christian humanism (Andy Crouch (2008); Jens Zimmermann (2012)). What are we to make of *homo sapiens* in late modernity? Under scientism, influential thinkers like Nietzsche and Skinner have charted a cultural course beyond good and evil, while also relieving us of our freedom and dignity. It paved an unpleasant cultural road. Much post-WWII cynicism led to nihilism. Reduced anthropologies have led to much political oppression and abuse as seen under such leaders as Pol Pot, Mao, Stalin, Mugabe and Hitler in the twentieth century, where the government became the *pirate of the people*. Scientific materialism has often morphed into political-economic exploitation, entailing massive human suffering and extensive violence. We must protest this impoverished and exploitive view of persons and seek an alternative one that is urgent in our age of tectonic pressures: climate change, militarism and nationalism, refugee crises, terrorism wars, economic inequity, oppression of women (Al Gore, 2013).

a. Humans must be distinguished from nature. Certainly, a person is continuous with nature biologically; this is one of the reasons that human biology and medicine has been so successful. But we should not settle for views of our identity reduced to our biological origins, our biological infrastructure; humans are not only *a part of* nature, they stand *apart from* nature in significant ways. Language and use of tools are only two prominent examples. They are much more complex and sophisticated than animals or machines despite the similarities, and we do serious damage when we do not recognize these important distinctions. Much that is true about us transcends our biology or physics. Humans are an order of magnitude different from animals in many capacities: human altruism goes far beyond genetic altruism. Consider Oscar Schindler who took incredible risks to save those who were not of his tribe or DNA, says Francis Collins head the National Institute of Health brain mapping program.[46]

Stanford neurobiologist William Newsome agrees that there is much more to us that our neurons. There is something wondrous about consciousness and he resists the popular neuroscientist trend toward reducing humans to their neural networks, although he is very good at explaining neural networks. We need many layers of description, he suggested at a 2018 lecture at UBC in Vancouver. Such networks are necessary but not sufficient to explain a human self. He noted that it is not religion or science which conflict with each other, but rather religion conflicts with the ideology of scientism. Neurologist Wilder Penfield contests that mind cannot fully be explained in terms of brain. "I am forced to choose the proposition that our being is to be explained on the basis of two fundamental elements, material and immaterial, physical and metaphysical."[47]

[46] F. Collins made this comment at a *BioLogos* conference in New York City. William Newsome is a major leader in the brain mapping under Collins at the NIH.

[47] Dr. Wilder Penfield, *The Mystery of the Mind*. (Princeton: Princeton University Press, 1975), p. 80. Walker Percy in his book, *Lost in the Cosmos* (Chapter 12) makes a convincing case for the distinction from animals based on human language and communication.

Warren Brown and Nancey Murphy (2007) develop this thought much further in their important book, *Did My Neurons Make Me Do It?*[48] Many of the questions we ask are *meta-physical* and *meta-biological*. Who am I? Why am I here? What is my purpose and destiny? What and who do I love? Why do I suffer? What is my quest for the good? As far as we know, animals, cars, trees and computers do not pose these kinds of questions *sui generis*. It is instructive that atheist philosopher Thomas Nagel (2013) sees that materialistic naturalism does not have the explanatory power or range to address these important phenomena—offering an inadequate explanation of consciousness, purpose/meaning and morality. The most powerful presentation of this concern is in David Bentley Hart's book *The Experience of* God (2013).

A human being is not just a "fact" or "thing" in the world, but an essence, something qualitatively distinct from and superior to mere things, nuanced and complex, not least including a tremendous cultural diversity and history. This is a *qualitative* concern. Jewish writer Martin Buber noted that it is the *I-you* and the *I-Thou* aspect of humans (the cosmic and human relational dimensions) that distinguishes us from nature. It is both the profound capacity for relationship with other humans and with the divine, and the complexity of those relations that sets *homo sapiens* apart from other higher primates, not to mention the wonderful ability of language (C. Taylor, *The Language Animal*, 2016).

Humans beings are ultimately ends in themselves and should never be treated as a mere means to a personal or corporate end, object or an *it*. Personhood involves an interpersonal and intrapersonal dynamic.[49] If someone we know treats a human as an object or an animal or kidnaps them against their will, we find it revolting, because it violates a person's freedom and decency. We take for granted rational attributes, free will, rational consistency, openness to evidence, desire for truth and justice, and basic dignity: all non-quantifiable but important qualities we want to preserve both in ourselves and in society. Whole personhood beckons us to return to spiritual and moral responsibility[50], freedom and dignity, to welcome the metaphors of *grace* and *gift*. The rich Genesis metaphor is that humans are made in the *image of God* (Genesis 1: 26, 27). This recognizes human uniqueness among the higher species, beyond merely having the largest neocortex. It entails a spiritual capacity that is unique. It seems to be part of our current cultural climate that we are less shy to talk about spirituality. For the PhD student in theoretical physics, the Psalms can act as a powerful conduit into God's wisdom, poems that capture human holism at a depth.

b. Humans have *ethical capacity,* remaining capable of apprehending the good and the true. This is quite an astounding phenomenon for your average animal. Without this critical ability, one could not expect good science or good relations among scientists. Science would be bankrupt without a

[48] Warren Brown and Nancy Murphey, *Did My Neurons Make Me Do It?:* Philosophical and Neurobiological Perspectives on Moral Responsibility and Free Will (Oxford University Press, 2007)

[49] Alister McFadyen**,** *The Call to Personhood: A Christian theory of the individual in social relationships*. (Cambridge: Cambridge University Press, 1990). It would be hard to find a greater advocate for personhood and the personal than Dr. James Houston, founder of Regent College in Vancouver, former Head of Hartford College Oxford. See also French philosopher Paul Ricoeur (1992), *Oneself as Another*, on the topic of personhood.

[50] French philosopher Emmanuel Lévinas is one late modern thinker who moves beyond radical individualism, and advocates for 'taking responsibility for the Other'.

high level of integrity, honesty and trust. We are made acutely aware of this when we hear reports of fake science that supports big tobacco, or big oil. Nor is this moral capacity simply a product of evolution. All humans by choice participate in a quest for truth and struggle with their grasp of the ethical, the just, and the fair. Both truth and love are together needed for genuine knowledge, notes philosopher Ludwig Wittgenstein.[51] In my PhD work, I was delighted to discovered the genius of Canadian philosopher of modernity Charles Taylor. In Taylor's (1989) important tome *Sources of the Self,*[52] he reveals that people are deeply embedded as moral creatures and universally have some relationship to the good. They cannot escape this moral capacity, behaviour or moral desires—he calls *qualitative discriminations*. As Canada's premier philosopher, he has something important to offer on this question of scientism, especially in this anthropological aspect of the conversation.[53]

Within the discussion of recovering our relationship with the good (our moral inheritance and agency in the West), Taylor has great insight into the importance of reconnecting freedom, agency and the good. I trace his *transcendent turn* to *agape love* and explore a thought experiment that integrates the quest for freedom and identity with a Trinitarian concept of goodness.[54] This trajectory avoids the nihilism and despair, which ensues from the ideology of scientism. This argument is now a published book, making the issues more accessible (G. Carkner, 2016). It answers the current cultural dilemma of choosing between either moral lobotomy or self-hatred. Charles Taylor, at the end of his tome *Sources of the Self*, speaks of the *strong* type of transcendence, one that does not involve escaping the world, nor does one need to take a position of contempt for, or harm towards the world, or scapegoat the other. It respects plurality of being. American philosopher Calvin Schrag (1997, 110-148) offers important insights into the distinction between *strong* and *weak* transcendence. With Taylor, I want to offer a *wager on such strong transcendence* as a route to meaning and mature happiness—a cultural recovery prospect.

- Scenario 1: We close ourselves off to grace, out of loathing for self and the world. Because this is so existentially painful, we project evil outward in an act of polarization between self and world. We are both alienated and disgusted. We rationalize that this justifies terror: thus, the evil world must be destroyed. We cannot associate our identity with such a world, cannot accept being part of it. Brilliantly, Dostoyevsky (*Brothers Karamazov*) showed how

[51] The early Wittgenstein took the scientific experiment to its limits, and hit a wall with Analytical Philosophy: typified in *Tractatus Logico-Philosophicus*. The second half of his career moved well beyond this narrow perspective.

[52] Charles Taylor, *Sources of the Self: The making of the modern identity*. (Cambridge, MA: Harvard University Press, 1989). See especially Part 1, "Identity and the Good"

[53] See Gordon Carkner in CRUX magazine Summer 2008, Vol. 44 No.2 for a summary: *Charles Taylor and the Recovery of the Qualitative Good for Renewal of Ethical Dialogue*.

[54] Gordon E Carkner, *The Great Escape from Nihilism: recovering our passion in late modernity*. (Infocus Publishing, 2016). See the full development of an argument which shows the way out of nihilism and towards substantial meaning. Carkner's PhD dissertation deals with a dialogue between Michel Foucault and Charles Taylor on the crisis of self in late modernity.

terrorism is a spiritual response to self-hatred. Suicide for the noble, or terror for the ignoble, seem our only choices within this stance. Pride is involved in this violence: *Arrogance, Deceit, Resentment*.

- Scenario 2: In a radically different stance, we invoke transcendent *agape* love. It allows us to love both the world and self at the same time, despite its brokenness and injustice. We accept that we are part of the world, and accept our part, our responsibility for its evil and brokenness (a major miracle, an *epiphany*). This miracle comes through accepting love from others and from God—we open ourselves to grace and switch over to an economy of grace. This is a critical new stance to self and world. *Humility and Servanthood, Other-orientation, Hospitality*.

This *strong* version of transcendence means that, while such love comes from outside human culture, it offers transforming dynamics within the economies of the full range of the culture spheres: in science, the arts, ethics and religion. This has implications for positive psychology. Taylor believes that the *epiphanic* discovery of *agape* love can act as a *hypergood*, in that it influences a rearrangement of the hierarchy of one's moral goods or values, bringing into play both a *transfiguration* and *transvaluation* within the horizon of the moral self. This impacts self-transcendence and motivation for embracing the good, sacrificing for the other. Such transcendence implies that the self is receiver, but a receiver, not of a content, a proposition, a truth, but rather of a 'Presence, a Presence as Power'. Furthermore, that Presence provides "the inexpressible confirmation of meaning", a meaning that calls out to be done, to be confirmed by the self in this life and in this world … This confirmation and this affirmation of God and self in the world are what Taylor calls a "changed stance towards self and world, which doesn't simply recognize a hitherto occluded good, but rather helps to bring this about." (M. Morgan, 1994, 60) This is quite a profound move or turn.

- As the individual encounters the radically transcendent other, this person is re-oriented in the presence of the inaccessible or sublime. It involves both an existential *I-Thou* encounter and a revelation. This is where one is taken beyond the present realized bounds of one's self to discover new depths. The self is coming in touch with that which lies beyond it, a ground or qualitative pre-eminence. One becomes open to its empowerment. Taylor clarifies, using his language of *articulation.* The process involves naming a good in its depth, and illuminating its power as an engine for ethical discourse and agency. This is what we mean when we say that *God is love*.

- But God's love is one active contemporary source of the good, the love of which has empowered people to do the good and exemplify the good in their character, social life and politics. He suggests that we need a transcendent turn to avoid the extremes of self-hatred, guilt and shame or alternatively the extremity of hating morality itself—*spiritual lobotomy*. The transcendent turn to *agape* becomes vital to solve this problem. "The only way to escape fully the draw toward violence", he writes, "lies somewhere in the turn to transcendence—that is, through the full-hearted love of some good beyond life" (Taylor, *A Catholic Modernity?* 1999, 28).

Taylor hopes for a participation with the divine that returns us to this world in such a way that we are able fully to embrace our deepest spiritual aspirations and fully to affirm the world, others, and ourselves without spiritual mutilation and without simply denying the reality of suffering and evil—a miraculous transformation indeed … As a thinker situated within the mainstream of Western culture … Taylor's proposed path to resolution of the crisis of affirmation involves appeals to God, grace, and agape, and there is no *a priori* reason to judge these appeals false or misleading. (W. Greenway, 2000, 38-9). In the quest for mature happiness and meaning amidst suffering and tragedy, the West is not without a response from its own philosophical, cultural, and spiritual tradition. *Agape* love, notes Charles Taylor, posits a stance towards self and the world that is morally courageous and life-affirming, enhancing the common good and promoting the wellbeing of the community. It offers to reduce violence, promote justice and improve an individual's mature responsibility—in line with mature happiness. It also offers the motivation to do the good that one knows—addressing the moral gap (John Hare, 1996). Taylor suggests that the first question we should ask is "Who or what do we love?", rather than "What are we obliged to do?"

To close ourselves off, to implode into a minimalist or reductionist language game, or to try to articulate all aspects of life with scientific language alone, to refuse theological, poetic, artistic and philosophical speech is a move towards cultural deprivation and decline. It is to be in denial of this longstanding, common human heritage: this larger linguistic and moral horizon, the *thick* understanding of human identity. It is to refuse our fullest humanity, to deprive us of the full academic and personal adventure, full flourishing in research, social and political life. Recovery of morality and meaning brings us into direct confrontation with the ideology of Scientism.

Our quest for human wholeness and integration takes us beyond *mere matter*, to what *matters most*: meaning, flow, purpose, and calling. It involves reaching for the richest experience and the highest knowledge available. Scientific analysis alone is a partial component. Our culture needs a new perspective to avoid the intellectual and cultural abyss that Nietzsche predicted would be our destiny. We seem intent on peering over the edge of this abyss from time to time and need wisdom to step back and set a new course. Perhaps we can hope for a time when we can see science in a fresh perspective culturally, in the overall context of a God-shaped universe, and as a servant to God and humanity. Perhaps wisdom, humility and servanthood will guide our culture down healthier intellectual and social paths. Scientific reason and personal Christian faith are deemed to be very compatible, and mutually stimulating in developing the soul's full economy and ecology, in pursuing the whole story of our human existence. Science and theology flourish as creative, fruitful interlocutors under the right conditions; they are radically complementary.

Conclusion

As we see, scientific reason alone is unable to answer all the important human questions, or to make us fully human—to accomplish fulsome human flourishing. In fact, we know things to be true in everyday life or society that we cannot prove with science; we need to search for other reasons, other forms of knowledge and wisdom. It is not 'scientific' to assert that the observable and empirical is all that exists; we must be open to supernatural sources of knowledge as well—revelation (Alister McGrath, 2009). The robust quest for whole truth proposed in this paper includes the best of scientific research and at the same time involves a generosity towards others, a radical fidelity to virtue, truth, beauty and love. By refusing to subordinate truth to power, to

avoid weaponized lies, or willful self-assertion, it serves us better as a race while we explore new horizons of insight. Truth is an activity, a judgment inextricably linked to the good and to love, and therefore to moral transformation; it is not to be taken lightly. This kind of truth is an important prerequisite for healthy human freedom. When we are pursuing truth and freedom, we must also pursue goodness or virtue. The limits Wittgenstein placed on philosophy for the sake of a life worth living are similar to the limits Aquinas put on philosophy for the sake of the Christian life as a way of following Jesus Christ into the truth of God. The accumulation and preservation of knowledge and the transmission of a common heritage is the role of both the university and the church.

Thus, we can appreciate science within its proper context, axioms and limits, its methodological rigor and testability, and the resultant valuable information. At the same time, we refuse the narrowness, simplistic illusions and falseness of scientism and its godchild nihilism. Life and reality are so much richer and creative than scientism allows. Late moderns need a substantial and holistic worldview to guide them through the twenty-first century. This will help them face its challenges, including global terrorism, environmental challenges, the surveillance society, equity of economic opportunity, health, education and poverty issues. This open-ended conversation ought to encourage heuristic developments in scientific, aesthetic, moral and theological work. We contend that Christian theism offers real promise for a healthy, non-reductionist worldview and posture to guide our thinking and living into the future.[55] This is what Faraday Institute's Denis Alexander (2001) offers in his brilliant tome *Rebuilding the Matrix*. The need is for an integration of knowledge and a language recovery (both designative and expressive-poetic), including the language of the good, which will open our minds and empower our work.

Author Flannery O'Connor wisely pointed out to one of her students who began to question her faith one day during college:

> Faith is more valuable, more mysterious, altogether more immense than anything you can learn or decide upon in college. Learn what you can, but cultivate Christian skepticism. It will keep you free—not free to do anything you please but free to be formed by something larger than your own intellect or the intellect of those around you.

We can wake up and escape the ideology of scientism with some effort and critical thinking. We want to affirm all the knowledge available to us. Scientific reason alone is unable to offer us the robust identity and purpose we long for, and the strong transcendence to make sense of our lives and our suffering. This can lead to a robust culture of meaning with purpose, belonging, transcendence, and a redemptive narrative, one that will give us good skills to traverse late modernity.

[55] A strong view is held by prominent German Lutheran theologian, Wolfhardt Pannenberg (1993, *Towards a Theology of Nature*), who is well studied in philosophy of science. He laments the tragic split between science and theology in the late 19th century, and sees both science and Christian theology as a study of one reality. He also wishes science to be accountable to a belief in God as Creator. The song by Amanda Cook, *So Will I (100 Billion X)* may be the posture some of us would like to take: https://www.youtube.com/watch?v=RwYuKlbk6BQ

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