

FOUR KINDS OF KNOWLEDGE

REVEALED KNOWLEDGE

SPECULATIVE KNOWLEDGE

SCIENTIFIC EMPIRICAL KNOWLEDGE

PRACTICAL EMPIRICAL KNOWLEDGE

Loyd L. Fueston, Jr.

© 2008, Loyd L. Fueston, Jr.

In the original version of this work as published on the website, <http://loydfueston.com/>, I reserved commercial rights, intending to allow personal use and copy of this work. In the interests of clarity, I'm switching to a Creative Commons license as described below.

Rights reserved according to Version 3.0 of the Attribution-Noncommercial-No Derivative Works license as written and published by Creative Commons Corporation. This license can be found at <http://creativecommons.org/licenses/by-nc-nd/3.0/>. A copy is also appended to the end of this book.

[T]he first philosophy
[metaphysics] utilizes the
teachings of all the sciences in
order to realize its objectives.

St. Thomas Aquinas in Chapter
4 of *Summa Contra Gentiles*,
Book Two: Creation, U. of
Notre Dame Press, 1975,
Translated by James F.
Anderson, page 35

Contents

Contents	i
Preface to Third Edition	iii
Preface to Second Edition	v
Preface	vii
Introduction	xi
Biblical Quotations	xiv
1 Preliminary Epistemological Issues	1
2 Revealed Knowledge	27
2.1 Introduction	27
2.2 How Can We Hear God?	29
2.3 Can Revelation Be Kept Pure?	34
3 Speculative Knowledge	39
3.1 Where Went Our Humility	39
3.2 What Then is Speculative Knowledge?	45
Biological Evolution and Moral Nature	46
The Big Bang and the Primordial Universe	49
4 Scientific Empirical Knowledge	51
4.1 Overview	51
4.2 Verifiable Sciences and Historical Sciences	53
4.3 The Empirical Nature of All Knowledge	55
4.4 Can We Keep Empirical Knowledge Clean of Speculation?	57

4.5	A Fresh Start	63
5	Practical Knowledge	65
5.1	Overview	65
5.2	The Morality of Doing	70
6	Confusing Realms of Human Knowledge	73
6.1	Overview	73
6.2	Absolutizing the Provisional	76
6.3	Confusion Reigns	78
7	Some Moral Aspects of Knowledge	79
7.1	Summary of My Position So Far	79
7.2	Authority and Claims to Authority	80
7.3	The Development of Human Knowledge	82

Preface to Third Edition

This new edition contains only minor changes to the Preface. I eliminated references to books I'd been planning on writing back in 2010 and didn't write.

The reader might be interested in some small progress I've made in the task of understanding being by way of understanding complex entities such as communal human being. If you are so interested, you can freely download *The Shape of Reality* at <http://loydfueston.com/downloads/shape.pdf>. Obviously, this is a book I did write.

Preface to Second Edition

This new edition contains only minor changes though I hope that I've cleaned up a few small problems and also made some sections more clear. In perhaps a violation of standards, I have revised the original *Preface*.

Preface

During some interval of time, reaching a climax in the middle of 2005, I came to believe, in my heart of hearts, that God is the source of all truths, even the most basic of logical or arithmetic truths. And I came to see that as part of the Christian message. It's not that I advocate a form of irrationalism, a belief that God can do what is logically impossible. I advocate a form of reason which is a result of the all-powerful God's decision to bring into being a particular Creation in which specific truths are manifested and even serve as the basic stuff of all created being. I advocate a form of reason which reflects our particular creaturely natures and, mostly, the specific Creation God freely brought into existence. Yet, most who think of themselves as Christians talk and act as if there is some body of fundamental truths, composing mathematics and metaphysics, that is independent of God so that it can be used – as one example – to prove that God exists.

The ultimate question is:

Does God think thoughts regulated by some body of absolute and abstract truths which are logically prior to Him?

Most people, even the most devout of Christians, talk and think and act as if the answer is “Yes, even God has to accept the basic axioms of logic and mathematics.” Against this sort of view, I am proposing that what we see as abstract truths are thing-like and fact-like, particular aspects of a specific Creation.

In a very preliminary way, I addressed this problem in an earlier book, *To See a World in a Grain of Sand*, which provides some background analysis which might make it easier to understand this book. In that book – which I will refer to as *World*, I did little more than state that Christians believe God to be the source of all truths. He is the source of the revelation that He exists and also the source of the revelation that He is Father, Son, and Holy

Spirit in one God. I claim also that the Almighty is the source of the truths of metaphysics and mathematics. I am ready to move a little past that tentative position, moving towards a view that Creation and its things and its abstract truths exist, came to be, were objectified, just because Creation is an object of God's love. I move a little bit closer to that more radical position in some preliminary discussions of the debate between Niels Bohr and Albert Einstein on the nature of physical reality. The interested reader could also read two blog articles:

- *A Christian View of Einstein's and Bohr's Debate on Reality*, found at <http://loydfueston.com/?p=10>; and
- *Quantum Mechanics and Moral Formation: Part 1*, found at <http://loydfueston.com/?p=34>.

In this book, I do not address questions such as:

Could God have created a world in which it is not true that “ $1 + 1 = 2$ ” or “a thing can be and not be at the same time”?

It currently seems to me to be no more than nonsense to ask if we, creatures that we are, have any truths independent of God. Perhaps these simple truths could not be otherwise, but that is no matter since they still come to us from God in His free-chosen role as Creator. It's hard to imagine that a creature, made of what does not exist, could have direct access to any truths but those embedded in Creation, where Creation does include what I called the Primordial Universe in *World*. The Primordial Universe is the manifestation of those truths God chose as the underlying stuff of our physical universe and of the universe of the resurrected. As God uses that stuff to tell a story centered around His incarnate Son, those universes become moral narratives of the strongest sort – worlds.

As St. Thomas Aquinas knew: things are true. Things are true just because they are manifestations of thoughts of God. I'm going further to claim that truths are thing-like, concrete in that they come to us, creatures, as aspects of created things, but more so in that they also are thoughts of God though they seem to be manifest in a different way than helium atoms or Mount St. Helens. Then again, it might be that Aquinas did say this and a fresh reading of his massive output might allow some bright historian of thought to prove he preceded me in this seemingly ridiculous

claim. In any case, truths are also thoughts of God – and this should be clear even to those who think certain truths, say those of mathematics, to be abstract and absolute so that they are beyond even God’s reach. But Christians cannot think in such terms since we believe in a God who creates from nothing. If there is nothing, there is not only no things but also no manifested abstract truths of even a metaphysical or mathematical nature. Arguably, the mathematical truth “ $1 + 1 = 2$ ” is concrete in the same way as the physical fact “A hydrogen atom has one proton and no neutrons”. Without individual things, there would be no hydrogen atoms and without a Primordial Universe, there would be no metaphysical truths, from which more particular forms of created being could be shaped. In that case, there would also be no arithmetic.

If there were no Creation at all, only God would exist and God is concrete in a way beyond any created thing.

And, so, I’m setting out on an extended effort to explore various aspects of these truths which come from the self-revelations of the God of Jesus Christ. I admit to feeling more than a bit disoriented, being a modern man used to the idea that there are realms of truths, mathematical and metaphysical, which come to man directly and are independent of even the Almighty Himself. Moreover, I’m disoriented by my own claim that realms of knowledge, mathematical and metaphysical and theological and empirical, don’t correspond to realms of reality but only to ways in which a finite human mind evolves and develops as communities and as individuals.

Introduction

As is true of various books I'm writing during the sixth decade of my life, I am using my first published book, *To See a World in a Grain of Sand*, as a foundation and reference point. As is also true of many of those various books, some of them even being novels, this book is part of an exercise in the raising of a Catholic Christian worldview. This means that this worldview will be deeply and explicitly Trinitarian and Christological and sacramental.

Those who wish to know the underlying assumptions of this worldview can do no better than to read the *Profession of Faith* from a Catholic missal. This *Profession* first came from the Council of Nicaea and was somewhat modified in later years. The *Profession of Faith* answered various questions raised by the orthodox faithful or the heretical faithful or the nonbelievers¹ about God and about the incarnate Son of God, using the Bible and the traditional liturgy and other Apostolic traditions as the sources of the answers.

The reader should beware that I will be arguing and writing in more conventional styles than I did in *World*, but I am still engaged in an effort to deconstruct modern thought which I consider to be burdened with so many errors introduced by various thinkers who had strayed from Christianity as well as many errors which have developed as Christian thinkers have tried to hold on to speculative thought and provisional understandings of empirical reality which are no longer valid. That's a mouthful, but it comes down to this:

¹I admit to an admiration for some heretics, perhaps many if I knew more history of Christian thought. I also have little or no confidence in the ability of church functionaries to recognize the truth or to distinguish between a heretic or a thinker such as Galileo who was probably more orthodox in his beliefs than were those who opposed him. In short, I use 'heretical' in a morally neutral sense. A similar comment would express my attitude towards many nonbelievers, even some outright atheists.

Our very language is deformed so that it is very hard to speak the truth. Our Lord, Jesus Christ, often spoke by way of parables and poetry. Seemingly garbled syntax will sometimes point towards the truth where straight talk will point towards lies no matter how you can struggle to speak clearly. That seemingly garbled syntax might well be the orderly ways of speaking for future generations.

God might be able to write straight with crooked lines, but we shouldn't assume we can. First, we must struggle to remove the crookedness from those lines or to find ourselves some new lines. At the same time, we should strive to be aware of the lines God writes and to follow even those which seem most crooked.

If I am to speak of physics and metaphysics being handmaidens of Christian theology, as I am doing, then I must have new words and maybe even new ways of arranging words. We Christians cannot speak as if there were multiple bodies of truths with God's existence and nature being subordinate to the truths of logic and of empirical science. Nor should we speak as if empirical knowledge and theological knowledge have no links, dismissing blatant contradictions with childish and irrational claims that there are no "conflicts between evolutionary biology and our traditional understandings of the stories in the book of *Genesis*."

As we redefine our language to better make sense of revealed knowledge and other forms of knowledge, we're forced to examine and contemplate the various sorts of knowledge which we have. Somewhere, someone – it might have been Dietrich von Hildebrand, noted that neither an excessive rigidity of mind nor an excessive looseness of mind is desirable but excessive rigidity seems to be less dangerous to the mind and soul than excessive looseness. Long-term, rigidity of mind would seem very dangerous and would seem to lead to dualistic and Manichaeistic attitudes such as those which have increasingly taken hold of the Catholic mind, then the Protestant mind, from at least the time of Galileo. I am aiming at the desirable state of mind where revealed truths, speculative truths, and empirical truths are treated in the appropriately flexible manner and are all given the proper respect.

Confusion between the different sorts of knowledge and, most especially, confusion about degrees of certainty can cause or exacerbate excessive looseness of mind or excessive rigidity of mind. In certain cases, we might find

excessive looseness and excessive rigidity in the same mind. One example might be the literalistic Darwinists, such as Dawkins, who claim to know the truth though they should be preaching that truth is no more than the facts of the moment in an evolutionary sequence. Another example might be those Christians who are rigidly orthodox in adhering to the Creed but also tend to prefer the fables of C.S. Lewis and J.R.R. Tolkien to harder-edged works of science or history or serious Christian literature true to our world. In the interesting cases, it's not often easy to evaluate a particular chunk of knowledge that we might know, not just in principle, but in fact what sort of knowledge it is and what degree of certainty it has. Often this will come down to an evaluation of the authority, if any, endorsing that particular chunk of knowledge and also the tradition testifying to it.

It takes an effort to think clearly and deeply before we can make the distinction between different sorts of knowledge. It takes a certain well-practiced discipline before we can engage in a little bit of abstract thinking stripped of concreteness or thingness. We must learn to think in a manner which is 'de-sensed' as Hannah Arendt said in *The Life of the Mind* without being contradictory to what is known of God's Creation. Thinking is natural to all human beings, but not thinking in a way that penetrates highly particular objects,² certainly not thinking upon truly abstract objects. In this world, there is a great need to develop this ability to think abstractly not just because we wish to reach abstract truths but also because we have such a mixture of highly particular realities. This isn't a statement of moral relativity, though we must acknowledge that cultural relativity which is a result of our very small and highly particular selves and concrete communities. The various institutional and cultural realizations of Christianity alone force us to step back to be able to see the commonalities, the human but benign differences, and the truly dangerous differences. But first things first.

First we need to understand the different types of knowledge and to understand the different sorts and degrees of certainty which attach to the different kinds of knowledge. We also need to understand the true sources of many of our beliefs. For example, there is nothing in empirical knowledge, certainly not politics as a practice nor any branch of modern science, and

²It's still better, but more convoluted, to speak of the desirability of thinking as if we were to become that other creature, star or wolf. In a word, a form of non-magical totemic thinking leads us to greater union, including intellectual union.

little of substance in speculative theory, to support the modern superstition that a human life has any inherently greater value than a chimpanzee life. It is a superstition because most, including most who call themselves Christians, have thrown away the Christian foundations of this belief in the higher value of human life: the Son of God, true God, become true man. The Son of God became our brother in the flesh. Moreover, the Father, who is the Father of Christ, adopted us in a special way. He is not our Father in the same way that He is the Father of Christ, but He is our Father and not only our Lord and Creator. We are seeing the respect for human life decay greatly in the modern West, but this is to be expected from the decay in the belief in Father and Son and Holy Spirit, from the decay in the belief that the Son of God became incarnate as our brother. We Christians have a duty to evangelize, to preach first the good news of Christ. It makes no intellectual or moral sense to preach the absolute value of human life as if it were a primary truth rather than being a gift from God.

The careful reader will keep this in the back of his mind as he goes through this book which has, in and of itself, a much more limited objective. But we need to understand the difference between the knowledge of revelation, of speculation, and of empirical realms – scientific and practical, before we can understand that our confusion of these different kinds of knowledge has allowed well-intentioned thinkers to imagine they can prove the existence of the God who reveals Himself, other well-intentioned people to have imagined that the Christian revelation of our relationship to God can be refounded upon either philosophical speculation or upon political action.

By way of these errors, we have largely lost our faith in the God of Jesus Christ and we have also demolished the only true and stable foundations for that ways of behavior associated with the wrong-headed term of 'human rights'. We have become idolaters and we have forged our own chains and also chains for our children.

Biblical Quotations

This book is written as a series of essays and not as an academic book complete with bibliography and index. I do quote from the Bible in several places and I'll merely note here that I use the *Revised Standard Version: Catholic Edition* as published by Thomas Nelson Publishers for Ignatius

Press.

1 Preliminary Epistemological Issues

Let's start with a definition.

Epistemology The study or a theory of the nature and grounds of knowledge esp[ecially] with reference to its limits and validity.¹

From a philosophical or theological viewpoint, epistemology is a sin of sort, a dangerously corrupting field of study. St. Thomas Aquinas never spoke of the so-called problems of knowledge. Etienne Gilson was the most prominent and plausible Thomist of modern times; Gilson denied that his good friend Jacques Maritain was a true Thomist just because Maritain was willing to discuss problems of knowledge with modern philosophers and theologians.

St. Thomas Aquinas went so far as to say that things were true. Modern thinkers will generally say that only statements can be true. For example, the statement "The ball is red" can be true, but the ball, as a thing, cannot be true, red or otherwise. Aquinas claimed that the red ball is true just because it exists. Once things are seen as being true and truths are seen as thing-like, we should have no more questions as to the grounds and nature of knowledge, though there remains much about human perception and cognition that needs studying. Still, even there, a Christian would have the faith that we have the proper perceptual organs and proper intellectual talents to see and understand what God has manifested in this universe.

We are physical creatures and what we know comes through our physical organs of perception. Truth comes from what we learn from the things

¹ *Webster's Seventh New Collegiate Dictionary*, based on *Webster's Third New International Dictionary*. G. & C. Merriam Company, Publishers, 1970

which surround us. It is a sign of our corruption that we retreat from our own physical nature and from the physical world into which we are born, pretending that – by some unknowable act of magic – we can have some sort of knowledge which transcends our own natures and those of the things around us. Our apish ancestors didn't come into this world knowing "1+1 = 2". They knew that two handfuls of berries were better than one. It took centuries for men to train their minds to imagine these abstract truths and that very process seems to have left us with the delusion that these abstract truths came to us independent of those two handfuls of berries.

To exist is to be true. From a Christian perspective, this is clearly a proper claim because things are manifestations of thoughts of God. Often, things with complicated histories can be better regarded, from the human viewpoint, as being the results of stories told by God, but that just adds another layer of complication to the insight that they are manifestations of thoughts of God. To speak in this more complicated way is far better because it emphasizes something that is obvious with an unbiased reading of the Bible: God is both the Transcendent God, I-Am, and also the narrating and participating God of the book of Exodus and the Gospel of Matthew. God's thoughts – including His stories – are true and, thus, things are true and events are true. Moreover, abstract truths are true. Those abstract truths accessible to human beings come from God in His immanent and freely-chosen role as Creator and Author just as things come also from God in that role.

I repeat that there are no problems with human knowledge in theology or philosophy as free-standing enterprises. That means that ultimately there are no problems with human knowledge. After all, theology deals with God the Creator and any existing thing is a image of God, that is, any existing thing is a manifestation of thoughts of God. Moreover, Christian theology is based upon revelations of the Incarnate Son of God, revelations which even tell us something about God's inner life, about the relationships between Father and Son and Holy Spirit.

God also has given us empirical reality and the human minds which form in interaction with that mundane reality. That is, God not only speaks to us through prophets and through Holy Scripture and through the Church, He also has given us a wealth of His own thoughts manifested as our human beings, the beings of rattlesnakes and lambs, the beings of stars and black holes.

Still, there seems to be plausible doubts about the reliability of human knowledge, though the question changes somewhat given the Thomistic perspective:

Can we know things well enough to perceive them as manifestations of truth?

There are limitations upon our perceptions and our thoughts. There are also glitches in the human perceptual systems and human brain that can result in outright errors. I'm not saying we should ignore these limitations and glitches, but only that they're of no concern to theology or philosophy. At least not directly. They do play an indirect role in so far as they help us to define and understand human nature, but knowledge of that human nature comes first in direct, first-person experience and then in knowledge from the sciences of physiology and neurobiology and so forth. And that tells again, if we need reminding, why philosophers and theologians aren't directly concerned with problems of knowledge – we can't even start doing our work if we can't accept what we learn by first-hand experience and what is given to us by biologists and physicists and historians and others. Of course, the real reason for us to have confidence in our senses is faith in He who created both those senses and the world which they deal with.

The human brain is potentially an encapsulation of the universe in being an organ that develops in response to the environments which are part of that universe, the environments which develop by processes which operate locally but also across the entire universe. Our brains and, hence, our minds are a toy version of the development processes which produce both galaxies and baboons. Any seeming limitations in our perceptions and thoughts likely tell us something about this universe, just as much as our actual insights and scientific theories. For example, our inability to deal with an act of something coming into being from nothing is itself a proof of sorts that such acts cannot be perceived, or even imagined, from inside an existing universe. Creatures like us are necessarily inhabitants of a universe and, thus, we cannot see a thing coming into existence outside a universe, nor can we see a universe coming into existence from nothing. What we can perceive is things that exist and we can perceive development and evolution so long as it happens fast enough to be perceived within a short lifetime. Properly disciplined human imagination extends our vision considerably so that we can think about the development of the universe over billions of

years. To a more limited extent, we can conceive of a more basic and more generic being which I called the Primordial Universe in *World*.

In other words, we can deal with things and changing things and thing-like being. To a lesser extent, we can deal with the more general being, metaphysical being, which underlies things and from which thing-like being is shaped. We – being creatures – can perceive what exists inside our Universe, our particularized phase or part of Creation. The Universe is unified, coherent, and complete, perfect in its limited, created being. Moreover, it can't have leaky borders, if it's truly the sort of entity it seems to be, that is, a universe or self-contained whole (self-contained and whole in the context of thing-like being with its physical laws). No thing can cross into our universe, nor can any thing pass out of our universe. Only God, both transcendent and immanent in each and every particle or whirl of created things, can move between different phases of Creation. It is even better to say:

Only God can be no creature of this universe and yet be here with us, in fact, present everywhere in each and every speck of time and space.

In most theologies, even those developed by well-intentioned Christians, there is a conflict between the immanence and transcendence of God. This conflict can lead to pantheism if God's immanence is over-emphasized, Deism if God's transcendence is over-emphasized. But it is a false conflict, created by the tendency of nearly all philosophers and theologians to think in terms of substance almost exclusively, even when thinking about the God of Jesus Christ or the possibility of such an all-powerful and all-knowing God. Despite the clues in the Bible, especially in God revealing His name to Moses as I-Am, and in Jesus claiming the same name, Christian thinkers have insisted on following the Greeks in thinking of God in terms of substance. Let me follow my inclinations and digress. . .

If we think of God as being the source of existence, then we avoid these particular theological problems which tempt Christians to explain the self-revelations of God in pagan terms. The great pagan thinkers have deeply influenced our understanding of the Bible and the Christian creeds, the nature of the skies and that of a living creature. This isn't all bad – Plato and Aristotle

and Lucretius were right about many things, but we must do a better job of filtering out those ideas that turn our thoughts of God in pagan directions. Unfortunately, those pagan thinkers have taught us to think of God as being a divine substance who is out there, in Heaven perhaps, but made of stuff that can't 'mix' with the stuff of this Universe.

There is more to this. Stanley Hauerwas, the Episcopalian theologian, spoke truly when he warned us: If you can prove that God exists, then He is not the God of Jesus Christ. Any proof, logical or from nature, of God's existence is the proof of the existence of a divinity corresponding only to the contingent decisions of the triune God when He took on the role of Creator. Viewed apart from God in His transcendence, Father and Son and Holy Spirit, the Creator God dwindles to Zeus. The God whose existence can be proven is Zeus and not the God of Jesus Christ. The advocates of Intelligent Design may think themselves to be Christians but they are really a sort of rationalistic pagan.

A Christian is defined by his belief in the God of Jesus Christ, Father and Son and Holy Spirit in one God, and that Christian must also believe that the God of Jesus Christ necessarily exists and could not have been other than He is, other than I-Am. That means that a proof of God's existence acceptable to a Christian must show us that the triune God exists, three Persons in one God. Any other proof leads to the proof of the existence of a false God, perhaps the great Pan and perhaps the Deity of Plato's *Timaeus* or the Deity of Leibniz.

At the same time, those proofs can serve a valid purpose, mostly in the context of an entire Christian theology – where Aquinas put them. That is, those proofs of God's existence show us that there is an inherent openness on the part of human beings to the general concept of divinity as well as a babyish capability of understanding God's self-revelations. But those proofs are dangerous for various reasons, the most obvious being that the God whose existence is the conclusion to a proof can also be reasonably denied. The God who comes out of the proofs of logicians or advocates of Intelligent Design can also be proven to not exist, which means only that the human mind can close itself to God's existence. Since God is present in His own Creation and in each of His creatures, a man open to that possible presence will hope that he can prove God's existence to anyone with an open mind. He will delude himself that those proofs are conclusive and

further imagine they can be denied only by those who lie in one sense or another.

That simply is not so and can be seen easily by anyone accepting the existence of the God of Jesus Christ, the triune God who is Father and Son and Holy Spirit in one God. You don't have to actually believe so long as you can accept the existence of that God for the purpose of understanding my argument. The God of Jesus Christ is a very particular God, so particular as to be far more concrete than any creature. Moreover, His triune nature makes Him seem awfully complex for a God proclaimed as absolutely simple in His being by many of the greatest of Christian theologians, but we have to remember this simplicity was not really a primary conclusion so much as it was a denial that God changes in the way of a creature.

The God who actually exists does not seem to be the sort of Being whose existence is provable. To evaluate the historical use of 'proofs', we need to realize that proof once meant 'test'. Thomas Aquinas proved the existence of God in the sense of testing human knowledge and human reasoning to see if they could discipline themselves to the demands of an absolute, revealed truth. God had to reveal Himself to creatures who could not have possibly come to realize that they had a Creator who is Father and Son and Holy Spirit in one God.² But this is more or less a part of the Christian tradition: even a simple belief in God comes from God by way of grace. We don't prove God's existence in any meaningful sense; God witnesses to His own existence, perhaps through the human witness of a parent or friend and perhaps through the community witness of a parish but always by way of His own witness through the Holy Spirit.

If any Christian thinks they can prove the existence of God, I'll simply dare them to prove the existence of the one God who is Father and Son and Holy Spirit. At the same time, there are many who witness to that God very effectively, by the way they live and by speaking of the Holy Scriptures. Witnessing to the God of Jesus Christ is not only a plausible activity for a Christian, it's a mandatory activity, but it doesn't prove anything in the way of a logical proof. Witnessing proves far more than any such logical proof could ever demonstrate.

²Similar statements with respect to Jewish understandings of God can be made about the proofs of God's existence used by Moses Maimonides who is said to be the first thinker to assemble such proofs into a coherent whole.

Moreover, once faith is well-established, it's also appropriate for some Christians to devote themselves to studying various aspects or parts of Creation: the Bible or history or astrophysics or evolutionary biology. But the pretense that such efforts constitute proofs of God's existence are meaningless except in their dangerous effects: they seem to lead to both atheism and Deism. I spoke of that in *World* and also of some modern scholars who had shown that popular atheism arose not from the Enlightenment Philosophes but rather from well-intentioned Catholic theologians who thought the Thomistic proofs of God's existence were free-standing and could be used outside of the complete faith-based theologies of St. Thomas, also from Protestant clergymen who thought God's existence could be proven from such facts as the complexity of the eye and ended by opening the possibilities of popular atheism, modern forms of pantheism, and forms of Christianity liberalized beyond recognition.

After this digression, I'll return to the discussion of the Universe and our relationship to it. The reader should understand at this point that I am not arguing from astrophysics to God's existence. Rather am I standing on my Biblical and Creedal faith as I look up into the heavens, seeking to understand God's Creation. I try to understand the so-called Big Bang and also the evolution of human beings on the basis of the Bible and also the Biblical beliefs summarized in the Profession of Faith which is part of the Catholic Mass, a Profession forged by the efforts of Church Fathers at a few councils more than 1500 years ago.

We should take the definition of the Universe and the limitations and weaknesses of our creaturely being, and God's self-revelations seriously for they combine to tell us:

What exists was created from nothing by God. We inhabit a particular phase of Creation but speaking generally, we can say that there is nothing but God and what He has explicitly created. In this context, 'nothing' does not mean emptiness but rather the lack of any being. There is not space, empty or filled, nor is there time, finite or infinite, during which there is nothing or no thing. Time and space are creatures also, as St. Paul told us in listing physical dimensions with the powers of this world.

Our brains are part of created being. We are creatures of the Particularized Universe which I call the 'universe'. We understand the universe, by

seeking to learn and understand the development of this universe from the Big Bang until now, a development which is powered by a great expansion from an extremely dense and hot Universe to the current Universe which has galaxies already separated by billions of light-years and still moving rapidly away from each other. We can understand the more basic or more abstract being which underlies thing-like being, and we can speculate coherently on other possible universes which God could have shaped from that abstract being which I call the ‘Primordial Universe’. We cannot think outside of the boundaries of Creation, not even to speculate coherently if God could have produced alternate systems of metaphysical truth, though I have no reason to believe God is limited in that way. There may well be an infinity of possible systems of metaphysics and possible systems of mathematics, though I believe those two systems would be tightly related to each other in any coherent Creation.

While it would seem likely that principles of non-contradiction and self-identity would hold in any metaphysical system, we should be modest about going beyond that. For example, there might be alternative systems of mathematical thought hidden in that absolutely infinite sea of random numbers which makes up the number line. Those alternative systems might well be beyond our wildest imaginations. And a Primordial Universe with a different set of possible mathematical objects and relationships would allow the shaping of abstract being into universes outside of our imaginations and our understanding.

But few there are who think of human intellectual and imaginative limitations in such high-falutin terms. Most people think in terms of ordinary errors, most of which can be dismissed. The misfires of a powerful V-8 engine have to be dealt with but they don’t really define the engine or its capabilities – unless something goes so wrong that the engine has become nonfunctional. Even then, it is a broken engine of a particular type and not a failed metaphysical experiment.

Of far greater interest are the apparent limitations and defects of the seemingly well-functioning human brain. Many of those are due to developmental problems during the crucial maturing phases of human beings. As just one example, the ability to do arithmetic, to even see the point of doing arithmetic, is not inherent in the human mind. Modern people, and some in earlier civilizations, developed arithmetic ability over several generations of struggle with the concepts and methods of arithmetic. When Pacioli included examples of double-entry accounting in his book on algebra

(1458 or so), it was considered a matter of the same intellectual complexity as relativity theory in the 20th century. Intellectuals and merchants began to shape their minds to the demands of arithmetic in general, but it took more generations of confusion about how to teach those concepts and methods effectively to youngsters. We have returned to that confusion and the inability of far too many modern people to think clearly should warn us about the effects of underuse and misuse of the human brain in this era of television and computers with visual interfaces and all sorts of canned experiences. We think to safely exploit the material world we do so little to understand.

Samuel Pepys was a prominent diarist and man of practical affairs from the 17th century. He was literate and well-educated and one of the most important figures in the management of the port of London when it was the dominant center of commerce in the West. And he struggled with even simple arithmetic. Trigonometry and geometry were well beyond him. Earlier European societies had somehow been run without such skills. To be sure, those skills had existed in monasteries and on the staffs of powerful lords as well in some of the Jewish communities of Europe, especially Spain. As hard as it might be for us to imagine, a society without IRS forms or mortgage tables can function. It is equally as hard to imagine that young people grow up in such societies without ever developing even the most basic skills in arithmetic. And their adult brains will not be flexible enough to learn those skills, except for a very small number of remarkable people.

Our minds are not immaterial substances given to us independent of our bodies, nor are they computers as most people think of them. Our minds are brain-based encapsulations of a universe which moves through time developing, or else they are ill-formed or unformed.

Our minds are potentially encapsulations of our universe. That potential has to be developed properly and we must have the right nurturing during specific windows of developmental opportunity during specific periods of our lives for our minds to develop in an optimal way. The universe itself is like this. If matter failed to reach a certain density in a region of the universe at an early stage of expansion, no galaxies will develop. Given what is known of physics, it's conceivable that the universe might have expanded in such a way that it would have been no more than a gas cloud too thin for the formation of galaxies or even individual stars. The universe had to develop in a proper way, passing through specific phases at the right time, for it to become our universe.

In all likelihood, we will discover, or at least theorize, that something similar happens on planets which have the potential to support life – if life doesn't come into existence during some crucial window of opportunity when that planet is young, it will never arise on that particular planet. Sometimes development can be forced out of its natural time and place, but that rarely produces good results and sometimes produces outright monstrosities. The most likely result of a failure to develop during a crucial period is that that particular capability will simply be lost. But the brain is not different from the heart or skeletal muscles in this way: even a well-developed organ can decay greatly if it is not used intensely and properly.

We theorize, very plausibly, that the universe is homogeneous through spacetime in the sense that the physical laws and the type of matter in a long-ago, far-away galaxy are the same as in our galaxy, the Milky Way. In many ways, the basic physical stuff of this universe has also been the same since approximately three minutes after the start of the expansion of this universe, which start is often called the Big Bang. There were some more changes coming, especially the creation of the heavier elements in the first generation of stars, but that makes only a difference of some tens of millions of years. For 15 billion years or so, the basic stuff of the universe has been substantially what is found in the solar system, though our universe has cooled greatly on average, that is, its energy density is much lower. That cooler state might be necessary for the development of life as we know. And maybe not. It's an empirical matter for scientists to decide, if they can, but we must always remember that any theory by scientists or theologians or novelists or historians will contain a large number of assumptions from speculative interpretations. The users of those theories will often be unaware of many of those assumptions, sometimes even unaware that speculation plays a role in statements of revealed truths and of empirical science. Sometimes, the originators of those theories will be unaware of the large number of speculative assumptions underlying their work.

But the universe is a story moving forwards and there are times when certain possibilities are open. If those possibilities are not realized, then they often close up. In regions of the universe, where matter became concentrated early on, galaxies were born. Since the universe is expanding, the other regions will never give rise to galaxies though there is a huge amount of matter in those so-called voids. At this time, 15 billion years into the life of our universe, thinly scattered matter is not going to come together into the sorts of relatively dense gas clouds that can collapse into

galaxies. At least, we know of no physical processes which can bring that thinly scattered matter into higher concentrations. Since God is active in His own World, there is nothing that could stop Him from bringing those diffuse clouds together into a concentration sufficient for a galaxy to form though there is little reason to believe He would have reason to do so.

I'm certainly not excluding God from His own Creation. I am, in fact, creating a worldview in which God is a direct participant in His own Creation, creating all that exists each and every second. I do find strange the general understanding of miracles. 'Author' is a good analogy for God's relationship to this universe and good authors don't break the rules they establish for their stories, though it might be hard to see what those rules are until those stories are complete. Moreover, a good, creative author – or Author – is not bound by any academic or other rule-based understanding of the proper rules of narrative. Mediocre authors or students doing exercises follow text-book style rules. Hermann Melville and Laurence Sterne had a gut feel for the true rules of real-world narratives. Those rules are generally of the sort which upset those who have the mentality of a Biblical Literalist or an advocate of Intelligent Design or would-be authors who think there are schemes and rules that will allow them to be true novelists or poets.

I am fascinated by Lourdes and think, of all the holy sites on Earth, there is the strongest – though quietest – evidence that God is working in a special way in those waters. But those sorts of special acts fit in with what we've been told so far of this story which is God's World. When the Son of God was on Earth in His flesh, He cured various sick people, of palsies and epilepsies and of severe mental or emotional disturbances. There is every reason to believe He would still be blessing us with these sorts of miracles but little reason to believe He would have a reason to form a galaxy which failed to form by the natural developmental processes of this Universe – and remember that there is no such thing as a natural process in which God is not present. God laid down certain laws in this Universe, for example, some that are called 'physical' and some that are called 'moral'. Remembering that the evolution of moral nature, especially in social mammals, casts doubt upon an absolute separation between the 'physical' and the 'moral', we should also remember that both general types of laws are given by God. We should probably presume that God created these laws as being adequate for the story He is telling and that includes the parts of that story in which He is acting in a way more visible to sensitive

human beings. When God acts in that way more directly perceptible, we often err by seeing Him as if He were a pagan god of magical powers over a world which exists independently of His acts (acts-of-being in Thomistic existentialism). He's up there, waving His wand over a world which sits beneath His throne on Mount Olympus. It's better to see Him as an author who has the power to enter the story He's telling in a more direct way.

In any case, human lives are little different from the lives of regions of the galaxies in many ways. Possibilities not realized during crucial periods will be lost forever, so far as we know, so far as we should prudently assume. In *World*, I strongly implied that a human being who does not take advantage of crucial windows of developmental opportunity will fail to develop into a true person, a creature who has taken on some of the characteristics of the only true persons: the Persons of the Holy Trinity, Father, Son, and Holy Spirit. In a story, important opportunities will not always arise a second time. Grace is never closed off until we are thrown into a permanent grave, but those who delay in accepting God's grace are betting with their own salvation. Parents and community leaders who fail to properly nurture their children and young adults are stunting and deforming those for whom they have great responsibility.

Our limitations and defects are those we would expect from characters in a story which is developing from a Creation to an Apocalypse. Our very limitations seem to confirm that the world is a story and not just a setting for entities passing through. The world of God, our universe seen in its true moral order, is a manifestation of thoughts that God wished us to have. Moreover, human beings see only what is around us – for the most part. The world which is this universe in its moral ordering is not fully present to mortal man because the world is a story in which much emerges from Creation through the ongoing and constant Creation and right up to the Apocalypse which is not in the end of times but rather from the beginning of time until the end of times. Modern technology united with modern physics has allowed us to see much that is distant in time or space. Modern technology united with modern science has allowed us to see inside our physical substance as well as seeing back in time and space. As a result, we now have some understanding of the story of life over the past three billion years, but our vision is still quite limited. We still see through a glass darkly even with our telescopes and electron microscopes.

Our understanding of a narrative is necessarily limited when we've lived through only a small part of the story and have only limited ability to find

out about past events. Our ability to foresee future possibilities is less than limited, though we can have some understanding of possibilities so far as the physical universe is concerned and some understanding of the moral meanings inhering in those unknowable events. Our empirical knowledge is and always will be incomplete and defective. More importantly, moral meanings can be seen in the possible futures of our Universe only if we have some sort of faith that tells us the moral meanings of the past and the present. Then again, we can know the moral meanings of the past and the present only because God has told us a little, a very little, about the future of this story He is telling. But that very little is enough to encourage us to accept His offer to make of us companions for His Son.

Speculative knowledge, starting with metaphysics – perhaps by way of unstated or unconsciously accepted assumptions, is dependent upon our empirical knowledge. Even truths which seem necessary (at least given the existence of this particular Creation) could have been easily hidden if the universe were not transparently rational to some extent though many important philosophers and scientists before Einstein over-estimated the degree of transparency. Is it just coincidence that the aspects of the world which seem to generate contradictions were not discoverable until human beings had already discovered the more straightforward aspects of the world which allowed them to build fancy instruments? If some of the ancient skeptics had known about quantum mechanics and relativity, Western science might have been routed into irrational paths similar to those of some lines of Oriental speculation.³ In fact, quantum mechanics and relativity are founded upon more rigorous mathematical laws than more mundane branches of physical science. Quantum mechanics and relativity are rigorously mathematical but they have strange aspects which seem arbitrary, though mathematically well-ordered. Those strange aspects give our world an implausible balance between order and disorder, stability and chaos – and be careful not to assume the dichotomy between stability and chaos is always much like that between order and disorder. As I use the terms, order necessarily has a moral component while stability is moral only as an accident. The early United States was somewhat well-ordered while the

³This is not to deny the value of some of those lines of speculation but only to say that they'd started in the wrong direction. We can see similar problems in some of the lines of speculation associated with Lutheran pietists and some of the Franciscan thinkers. And others as well. Nowadays, you can see strong tendencies towards irrationality in much of our popular science literature even when the author is a respectable scientist.

current United States has a stability suitable for the purposes of exploitive institutions and individuals.

So, the physical world can be very strange. Without that strong initial faith of Archimedes and Aristotle and Newton that the world makes sense in an obvious way, we would not have seen either early pagan anticipations of science or modern science as it developed in the Christian West. The human mind would have been steered down paths of irrationality and magic. As it is, too many human beings, many of them Christian, seem to think magical beings, demons and others, are as much a part of Christianity as God is.

I'll press on in this exploratory chapter of a modest exploration of human knowledge. I'll discuss that knowledge as being composed of four kinds:

1. Revealed knowledge.
2. Speculative knowledge.
3. Scientific empirical knowledge.
4. Practical empirical knowledge.

From a Christian viewpoint, revealed knowledge is a stream flowing out of the events recorded in the Bible, however incomplete and imperfect those records are. Revelation includes both the Bible as a text and the traditions coming from the Hebraic or Apostolic communities of worship, and I will speak of revelation only in terms of those particular streams of special revelations. Natural revelation will be treated as part of empirical or speculative knowledge.

Speculative knowledge is abstract thought which is a result of contemplation upon either revealed knowledge or experience. So far as I can tell, speculation organized as systematic knowledge preceded empirical knowledge organized in a systematic form, and this is certainly true if Homer and other tellers of tales are treated as speculative thinkers. Understanding the nature and motivations of speculative knowledge might allow us to better interpret not only Homer but also those parts of the Bible which seem to be reflections upon experience and those parts of the Bible which seem strange or inconsistent, most likely because the underlying facts were not known well enough to tell the story in a straightforward or literal way. Conjecturing that the birth narratives of Matthew and Luke are likely myths of a

sort is not a denial of the underlying truth of the incarnation of the Son of God unless you believe that a factually true telling of the birth of Christ is necessary to establish His divinity. At the same time, we should see that a sensitive reader can see the signs in a particular narrative stream which tell us that stream is literal historical fact, historical fact as best remembered (such as the rendering of the tales of the ancient patriarchs of Israel), or speculative attempts to understand revelation of one sort or another. There are still other possibilities but a recognition that the various authors of the Bible imparted knowledge other than historical facts will help us to better understand many of the sections of Holy Scripture.

Those fields of knowledge which we call science were not approached in a self-sustaining, systematic way until the explorations of medicine and optics in the Middle Ages. But we wear blinders when we refer only to physics and biology by the term 'science'. Scientific empirical knowledge is history and physics and biology and literary studies and this sort of knowledge did not appear in a mature form until fairly recent centuries. This is not because ancient human beings were less intelligent or inherently more superstitious than us; it is because of the immense time and effort it took to build the foundations that supported scientific instrumentation and methodical techniques. I'll refer to this sort of knowledge as scientific knowledge in most cases though some of those fields of study, such as literary studies, have a heavy speculative element. After all, some fields of physics, such as physical cosmology, have also a heavy speculative element.

Practical empirical knowledge is, crudely speaking, manipulative knowledge. Business studies – including economics rightly practiced, most branches of engineering, crafts, farming, and homemaking are examples of this type of knowledge. Most of the time, I will refer to this form of knowledge as simply practical knowledge. I'll also ignore the overlap between scientific empirical knowledge and practical empirical knowledge though I'll remind the reader that all these sorts of knowledge are dependent upon each other.

My discussion of these kinds of knowledge will be oriented towards the task of discussing the problems which have arisen because of the need to mix revealed and speculative and empirical and practical knowledge to provide, for example, a view of man in which the Church's teachings about sin can be placed. At the same time, I will discuss the reasons why there are ultimately no such divisions in knowledge but rather a simple split between knowledge of God in His necessary transcendence and knowledge of God in His freely-chosen immanence. The second sort of knowledge would include knowledge

of Creation. We could express the split in terms of God as His own Act-of-being vs. those acts-of-being which constitute His Creation, those acts-of-being which are manifestations of the freely chosen and contingent thoughts of the Creator. For now, let's pretend that the four-fold nature of knowledge corresponds to a deeper truth, and it does certainly correspond to a deeper truth about the limitations of the finite human mind and finite human perceptual abilities. Over the course of this short book, it should become obvious why this assumption that knowledge has a four-fold nature can help us to understand human knowledge in general and also why it can help us to discuss the specialized realms of knowledge which are necessary for a finite and mortal creature to ascend towards the greater and more unified truth.

Given all these qualifications, I'll give short descriptions of these four kinds of knowledge:

Revealed Knowledge Given to us by prophets who are recipients of knowledge infused by God or given to us in the Person and words of Jesus Christ. I believe that we are given revelations by a process in which our thoughts come into alignment with the thoughts God wishes us to have. I would discount the viewpoint that revelations come by way of God directly speaking to us. God whispers to us and we must make ourselves quiet in the proper way that we can participate in His whispers. It's only when we participate, when we talk or think along with God, that knowledge as such can appear.

Scientific Empirical Knowledge As I use the term, this is the result of disciplined, or scientific, investigations of empirical reality – directly accessible to human perceptions and directly understandable by the human mind. This includes history and literature and certain branches of philosophy as well as the physical sciences. In general, I exclude economics and much of sociology and psychology as being either practical or speculative or false knowledge.

Practical Empirical Knowledge Largely unconscious and composed of habits and procedures, this is the knowledge that most people are concerned with. It includes the lore of farming, retailing, teaching, and much of nursing.

Speculative Knowledge The result of human contemplations upon revealed knowledge or scientific empirical knowledge or practical empirical knowledge.

At the same time that this four-fold nature of knowledge can help us to understand God and His Creation, we should realize that all knowledge about God's world, as well as the knowledge He wishes us to have about Himself, is fully unified in one particular way. That is to say, this universe is the physical aspects of the world which is a story God is telling. This story is an image of its Author, not of its Author in His absolutely infinite and unknown Self but an image of thoughts He manifested and which He wishes us to share to the greatest extent possible. Those thoughts, even the most abstract of mathematical and metaphysical thoughts, fit into a story which is very complex and includes many sub-plots but it is a single story in which the absolutely dominant character is God Himself.

But our minds cannot grab hold of this story as a piece. We need to understand the physical stuff of the characters – stars as well as human beings and dogs. We need to understand the various relationships amongst this physical stuff and the complex entities which are shaped from that stuff. We need to understand stories, especially the – often ambiguous – moral order of a proper narrative. We need to learn much by various processes before we can have material for speculation and we also need to mature to the point where our minds are capable of more profound thoughts and deeper contemplations. We need to develop highly specialized equipment and techniques for gathering empirical knowledge. We need to make our livings and form our communities before we have the habitual and mostly non-reflective knowledge that makes up practical knowledge.

Before going on, I should note that I do not intend any disparagement by the term 'non-reflective'. The mostly non-reflective knowledge of a farmer handling a team of plow-horses and that of a highly skilled dancer or pianist are true knowledge. Moreover, most of the knowledge of mathematicians and historians is also non-reflective, implicit knowledge and also ingrained work habits and so forth. We should also realize this knowledge, even when it can be labeled 'non-reflective' is formed by way of disciplined effort directed by our own selves or our parents or our communities. We should also realize this knowledge exists because of the creative responses of some – perhaps long-ago – farmer or dancer or pianist.

A human being is of a piece, at least in the Christian ideal. As I argued in *World*, we have every reason to believe a man to be a physical animal of a particular type. Since there seems to be no non-physical mind-stuff, we should recognize that all forms of thought involve intelligence, including that which moves our feet or fingers through extraordinarily complex motions. Einstein's thoughts rested on a foundation of physical events. In this, Wendell Berry writing a poem or an essay is little different from Wendell Berry plowing a field.

Praying the rosary is as much an act of Christian intelligence as reading the works of St. Thomas Aquinas. Telling a child stories about St. Francis of Assisi can be as much a part of educating that child as explaining to her the *Apostle's Creed*. Carrying out morally responsible research to end a parasitic disease blinding Sudanese children can be as much a Christian act as catechizing those same children. All of this comes together in the life of a Church, the organ of the Body of Christ which is the ears and tongue of that Body as it prays to God, praises God, or simply talks to God. Each of us is but a part and some of us are carrying out specific acts of intelligence, some directly serving Christ and others serving the practical or medical or cultural needs of the brothers and sisters of our Lord.

Because of our limitations, because we are creatures inside a universe, and because of the fragmentation of our beings and our social roles and our perceptions of various aspects of the world, we see knowledge as being of different kinds, but the only true difference is between knowledge of God and knowledge of His Creation. Even His Creation is a knowledge of creaturely images of God, knowledge of thoughts which God manifested in our world, wishing us to use those thoughts to form our minds.

So we've got a complex mess, from a human viewpoint. Knowledge is but one, yet it appears as multiple kinds, some of those kinds of knowledge being accessible through empirical investigation and some through contemplation and some only through direct revelations from God. And it gets still messier. For example, some direct revelations from God give us knowledge we could not get as creatures, even in principle. There is no way we could ever penetrate to that Supreme Act-of-being which is God to discover He is Father and Son and Holy Spirit.

Being fragmented creatures in a world which is inordinately fragmented during this age dominated by the gods of the marketplaces, a world which is fragmented while it goes through the agonies of formation and birth, we can only begin to see the unified truth by dealing with knowledge in the

bits and pieces which we can grab hold of and digest. A Catholic Christian, and some others as well, must believe that revealed knowledge was given to the Church to protect and to interpret. But there are some funny aspects to revealed truths. First of all, revealed truths are very much primary. That is, the Holy Trinity – three Persons in one God – is not a conclusion but is the source of those truths we think to be more fundamental, such as “ $1 + 1 = 2$ ”. The Holy Trinity, Father and Son and Holy Spirit in one God, is not a detail added on to the pagan God proven to exist by Intelligent Design advocates or logicians. Second, revealed truths do not come with detailed explanations. That is, Christ told us He is present in the Body and Blood on the altar but the rest, including the most solidly argued positions of Aquinas and the Council of Trent, are human speculations. I’ll speak more on this and the other kinds of knowledge in the chapters devoted to each type.

There is a clear example of a major problem caused by mixing of the four kinds of knowledge and I discussed it from a different viewpoint in *World*. That problem is the illusion that the existence of a separable and immortal human soul is somehow either revealed knowledge or solidly founded speculative knowledge. I’m not sure how people came to believe this, since any reasonable analysis of the history of human thought tells us that this idea of a human soul, separable from the human body and immortal, came from philosophical speculations which were founded upon inadequate understandings of the physical world and of the capabilities of living flesh in particular.

It was only in the 20th century that physicists, starting with Planck and Einstein, began to explore the extremely dynamic nature of matter and energy and fields, which turn out to be three forms of the same basic stuff which is formed by God from the manifested metaphysical entity I called the Primordial Universe in *World*. This lack of understanding of the true nature of physical stuff, matter and energy and fields, was the major problem to the great thinkers such as Aquinas who could not understand how a physical organ could be plastic enough to draw abstract conclusions from particular instances. For example, how could the brain of a human infant reshape itself that the concept of ‘dog’ could emerge from the perception of three German Shepherds, two collies, and a dachshund.

Aristotle and Aquinas were both hard-headed empirical thinkers who simply lived in ages before the invention of the microscope or the convention-shattering study of the exotic flora and fauna outside of Europe. I will also

add that there is some serious doubt as to whether Plato ever thought of the immortal soul in terms of an individual human being; some scholars claim he thought of the human soul as belonging to Man the species. It's modern Christian thinkers who can be faulted for not having the faith in God's promises that would allow them to explore the empirical world with an open mind and to consider the possibility that God's promises can be realized in a way different from the conjectures of Plato and Aristotle, Philo and Augustine, Aquinas and Pascal.

The conjecture of a rational soul was reasonable given the pre-modern understanding of the world and of living organisms. The real problem is that most thinkers, including most serious – even brilliant – scholars, have inflexible minds that will look at one of the *Summas* of Aquinas and take it all as being dogmatically correct or as sheer silliness depending upon the prejudices they bring to their reading of that *Summa*. Few there are who see that Aquinas was producing a view of God's world by putting up a lot of scaffolding around a small core of revealed truths and a small number of brilliant speculations. Aquinas himself noted that metaphysics uses all the sciences, letting his more careful and creative readers know that his metaphysical system would be at least somewhat wrong if his physics and biology was wrong. And they were inadequate more than wrong just as our physics and biology will eventually prove to be inadequate.

But Aquinas was right given what he knew. The error lies with those who interpret the works of a dynamic thinker as if they were the instructions for assembling a bicycle. Those with such literalistic minds do no better with the writings of the Tridentine Fathers or even the writings of St. Augustine of Hippo, a creative firestorm who honestly showed the development of his complex thoughts. I would have thought it impossible to literalistically distort the writings of such a thinker though the orderly presentation of the thoughts of Aquinas, an equally complex thinker, seems to invite such mistreatment on the part of people who over-estimate the powers of the human mind and of human languages – to the point where they miss the warnings Aquinas himself made about the limitations of the human thinker.

But a person who has trained his mind, or had his mind trained, to travel down well-defined ruts will not even perceive his true situation if he is heading away from the goal of truth – he will only know he remains in the ruts to which he is accustomed. He perhaps intuits some truths in his initial movement and lets his feeling of righteousness power him through a

variety of bumpy and swampy regions and even through the curves which lead him away from the truth he first intuited.

Let me return to the example I dwelt upon in *World*. When Aristotle couldn't quite figure out how a physical organ could be dynamic enough to form abstract concepts from particular instances, he was showing himself to be a child of his time. Twenty-three centuries ago, no one knew about the dynamic nature of matter and energy and fields. In fact, they really didn't even have those categories. Before the later decades of the 20th century, no one knew that the human brain forms itself not so much by having external images imposed upon it but more by way of internal dynamic processes of self-organization in interaction with the physical surroundings.

Sixteen centuries later, Aquinas also couldn't find a way around the apparent inertness of matter and so that great Dominican conjectured the existence of an immaterial rational soul. St. Thomas was a hard-headed empiricist and well aware that the Bible presents man as a physical creature. The rational soul in his thought was a limited entity, no more than a dry-as-dust Mr. Spock which drew abstract concepts out of particular instances. The rest of our human nature, including our ability to love, was seen as part of the human body. It's most important to realize that this soul which appears in Thomistic writings is the result of an inability to answer a philosophical question and neither the result of a solid line of logical reasoning from basic principles nor the result of contemplation upon theological revelations. To avoid confusion on the part of many, I should note that Aquinas also spoke, more regularly, about the simple soul, the 'Aristotelian' soul which is a reification of the life-force of the human animal. In principle, this more general soul differs from the soul of a four-legged beast because of its connection to the rational soul, but that simple soul is an animal soul in all other ways, no different in principle from the soul of a dog. In any case, neither Aristotle nor Aquinas actually reified this animal soul because they both realized it dies with the body of the animal.

Why did Aquinas, otherwise so hardheaded an empiricist, conjecture the existence of an immortal soul in a human being? I believe he was driven by his faith in the ultimate unity of knowledge and the more immediate sense of unity in the concrete reality of which human knowledge is a poor image. In order to make sense of the revelations of God to mortal man we must have some idea of what this mortal man might be. In order to understand Creation, man must use an awful lot of empirical knowledge in addition to a small amount of revelation – little of it applicable directly to physical

reality. Even then, man has an ant-hill of revealed truths and a mountain of empirical facts. It begins to make sense, or fails to make sense in a rational way, once man begins to speculate about how it all fits together.

There is no such thing as a theology which is dogmatically certain because every theological system uses speculative knowledge to tie together the revealed knowledge it advocates with the empirical knowledge it accepts. The most precise human theological language does no more than allow a better description of what we see through a glass darkly. Empirical knowledge, both scientific and practical, also enters in – at least indirectly. In *World*, I argued that our decisions to organize our practical lives around marketplaces have left us a spiritually and intellectually deformed people whose beliefs have been reduced to useful ideologies, but those ideologies – even Marxism – retain strong connections to valid systems of thought or at least systems of thought valid and plausible in past centuries.

I think it might help if I were to provide a summary of the revealed truths of Christianity, but I can do that by referring the reader to the Profession of Faith (roughly – the Nicene Creed) which can be found in any Catholic missal, many histories of Christian thought, or on numerous sites on the Internet. Traditional and sacramental Christians believe:

- God is three persons, Father and Son and Holy Spirit, in one God.
- God created all that exists besides Himself.
- The Son came down to Earth and became man, Jesus of Nazareth.
- The Son suffered, was crucified, died, and rose from the dead as recorded in the Gospels.
- The Church is one and holy and catholic.
- Some or all of us will be raised in our bodies to live for time without end.

Though the items of the Profession and the revealed truths found in the Bible come from God, they come by way of a worshiping Church. The various creeds, including the credal hymns left to us in the letters of St. Paul, come from the liturgical needs of the Church. The Christian Bible itself exists more as an authoritative foundation for the Liturgy of Readings than as a free-standing source of revelation. This is not to say the Bible is a

mere book under the control of men. It is to say the living and worshiping Church is the Body of Christ even in this mortal realm. She is the mortal and communal creature which is the Bride of the Lord who speaks through the Bible.

The Church doesn't worship because She has read the Bible and recited the Nicene Creed. She worships because She was, and is, the embodiment of the worship of the Apostles and the other followers of the Lord Jesus who had known Him in the flesh. She is the Bride of Christ and, when She came to speak of Her reason for worshiping and when She had to teach new members, She had the power and authority to recognize those writings which were truly infused with Christ Himself. The Church could, and can, recognize the voice of Her Groom.

Yet, She came to a full self-awareness slowly and has often wandered away from Her Husband as did the whorish wife of Hosea. In that beginning when She was realizing who She is, no gospels existed nor even the letters of St. Paul who was himself converted in time to enter the struggle to define what was required for entry into the Christian Church. Yet, we should also remember that those letters of St. Paul were written early in the first decades after the Crucifixion of Christ, but the prophet to the gentiles was already able to quote liturgical hymns which the early Christians used in their worship services to sing the truths revealed to the Apostles. Those truths were later codified more systematically in the Apostle's Creed and the creeds which developed from that of the Council of Nicaea. The singing and the story-telling came before knowledge was pressed into a more systematic form.

The letters of St. Paul and at least three of the gospels came into existence during the Apostolic generation, the gospel of St. John perhaps a generation later, the book of Revelation and so-called Catholic epistles a little later. The Church was nearly three generations old before She had in one collection all the texts which would become the Bible and there is little reason to believe many Christians knew of the existence of most of those books until the later part of the third century, two and a half centuries after Jesus was crucified and rose from the dead. Historians seem to think the major dioceses of the early Christian Church, such as Rome and Alexandria and Jerusalem, had at least one Gospel and various other writings of greater or lesser reliability, but few if any dioceses or other centers of Christianity had much of the New Testament.

At that relatively late date, the Church was able to point towards the Bible and the major creeds. She gathered together the works of the Bible and She gathered Fathers to formalize the creeds in support of Her primary duty and that of any individual Christian – worship of God. If we consider the final agreement between Eastern and Western Christians about the canonical status of the book of Revelation, the Bible was not a firmly established collection of texts until 400 AD or later. The Church used the books of the Bible in Her Mass and in Her prayers as those books became available and recognized as scripture, but She was worshipping all those centuries, not waiting for the Bible to take final shape.

The Church's beliefs became explicit as the Apostles and other followers of Jesus Christ witnessed to His life and words, as can be seen in the Acts of the Apostles. It was only gradually, after the first two generations of Christians, that we see the beginnings of formal theology in the writings of men such as St. Irenaeus. It took the better part of a century for the books of the New Testament to be written and more than three centuries more for agreement to be reached on the canonical status of those books.

Over the years, the Church's liturgy has been enriched by the Liturgy of the Hours as well as by novenas, the rosary, and various forms of contemplative prayer. It is this Church at prayer and at worship which is not only the repository of the truths revealed by God but also our bridge to the world of the resurrected, the world where those who are blessed by God may live as His companions for time without end. The Church is, in fact, a foretaste but also the reality of that world of the resurrected and we must join that body of the faithful if we wish to live in that world we've not yet seen.⁴

The Church is the guardian of the most important knowledge of all. This knowledge, the doctrines of the Trinity and the Incarnation, is often held to be most important because it's the knowledge needed for salvation, but I'll propose a different viewpoint. It's a viewpoint I argued towards in *World:*

⁴I've more recently started to explore more complex possibilities in which the Church is not the entirety of the Body of Christ. She remains the organ of direct communication with God, but human beings need and desire relationships and activities which are satisfied best by other forms of human community. Grace completes and perfects nature, rather than destroying or replacing nature. Consequently, we should assume human needs will survive into the world of the resurrected though perhaps in a mature form which will surprise us greatly.

The revelation by God of His nature as Father, Son, and Holy Spirit in one God is the basis of all knowledge including those bits of knowledge which are regarded as absolute truths independent of God Himself.

Yes, I claimed in that earlier work and repeat here that this knowledge of the nature of the Triune God is more basic than our knowledge that “ $1 + 1 = 2$ ”. If God is truly the God of Jesus Christ, then He is the source of truths and not a complex truth to be derived from more basic truths. And we know God best when we worship Him in a bodily manner, even eating His Body and drinking His Blood as He commanded. The practical knowledge of how to live and worship as Christians is the true foundation for all Christian theologies.

But let’s move on to discuss revealed truths, hoping to gain a few insights as to the nature of revelation from the human viewpoint.

2 Revealed Knowledge

2.1 Introduction

We modern men are not receptive to revealed knowledge. We find it hard to acknowledge that a religious experience can be as valid and as objective as the visual experience of a Caribbean sunset, as valid and as objective as the mental experience of a black-hole mediated through radio-telescopes and computers. Many well-intentioned believers struggle to restore their sense of a religious experience but they descend into some sort of superstitious mysticism rather than experiencing the immediate Presence of God. Still, those superstitious human beings are better off than those skeptics who refuse to walk a path of a fuller human development by considering the possibility of knowledge being revealed to creatures by a transcendent God – they shield themselves from that immediate Presence of God. In *World*, I argued this was a more or less expectable result from the decisions of our ancestors to live in marketplaces and our decisions to continue living in such spiritual and moral wastelands.

Let me propose a simple, in fact – simplistic, fable:

There were some enemies of God who worked hard to make this an alien land for God and there were many friends of God who accepted the result. The first redefined nature and nature's laws so that a universe which is a very complex story was seen as a place of mere collisions of particles of matter. The second accepted the claim that this universe is too nasty a place to be the place God had intended it to be and set about separating the Almighty from His own Creation, some even turning it into a place ruled by demons who had taken Creation away from that Almighty God.

The two views are two sides to the same coin.

When God revealed Himself to us, He inspired some of His friends to write of their efforts to hear the Almighty and to understand what He was saying. Those worshipers wrote a messy collection of histories and poems and contemplations and hymns of praise, capped by the story of the Incarnate Son and the early years of the Church. The Almighty didn't dictate a physics manual nor an idiot's guide to demonology. On the whole, this mess which is the Bible forms a narrative, the narrative of God sculpting one mob of apish creatures into the people of Israel and also the narrative of God beginning to sculpting the greater part of mankind into the Body of Christ. In both cases, a community of bipedal apes was formed around the primary duty to love and praise God.

We are characters in a story that God is telling and it makes great sense that He told stories to His prophets and His beloved David, told stories in the life and teachings of His Son, and told a story of a ragtag collection of men and women who created a Church almost by accident while they were busy trying to figure out what they were supposed to be doing. We need to recover the deeper sense of that story and the only way to do that is to praise and worship God even if we do not yet fully believe in that God.

Even before we can accept God's love, a love that allows us to love Him in return, we must recognize our responsibility to praise and worship the triune One who made us and our World, the stars and the spiders as well as the prophets and poets, the intergalactic gas-clouds and the sharks as well as the saints and the innocent children.

It has been said that there is nothing in all creation so like God as silence and that silence can be heard as we pray by silent contemplation or by recitation of the Psalms, it can be heard most of all in that pregnant moment between:

The Body of Christ,

and your response:

Amen.

2.2 How Can We Hear God?

If we were to simplify and trivialize, we would have to state that all that we hear, all that we see, comes from God. But, saying this, most of us are trying to safely bracket the world, keeping us inside what has already been created and God outside of the time and space of this Universe, perhaps allowing Him to occasionally visit for the sake of a miraculous cure or two. To acknowledge God as Creator is not enough because it leaves open too many Deistic possibilities and most modern human beings who call themselves Christian do not seem to have any true sense of God's presence. Nor do they have any sense of the possibilities that God may speak with them, or act with them in their lives, in a direct and personal way.

The rose and the sunset and the pretty little girl receiving the Body of Christ for the first time are all made by God and thus come from Him, but there is a much stronger point I wish to make here. Our insides, our capacity to think and feel, to sense and to be aware, come from God and not just by way of a one-time conception in which God is the most important of three parties. No, there is still more. As I argued in *World*, God is constantly creating the stuff of which we are made, in the way that metaphysicians and physicists speak of creating, and He is constantly creating more complex entities – such as human beings, in the way that novelists and poets speak of creating.

The Almighty can speak with us even as He brings His story along, as He brings us into fresh being. He is telling the story and doesn't need to invade His own world to perform a miracle. He is not outside the world in the way imagined by so many Deists and even many who consider themselves to be orthodox in their Christian beliefs. Not only is He in His world, bringing all into existence on a continuous basis by His acts-of-being. Not only is He powering the gas clouds as they collapse into young stars. He is also inside of us, bringing us to awareness and giving us all those properties which human beings have tried to grab for their own under the name of an immortal soul. The Lord God Almighty is inside of us, deeper than we ourselves are, as St. Augustine of Hippo saw 1500 years ago.

The question is not: How can we hear God? The question is: How can we listen with God? But we refuse to listen with God, being afraid that would force us to also speak with Him even as He reveals Himself to us. Traditionally, we explain our own rebellious attitude and that of others by way of sin. We have turned from our Maker even in the depths of our

hearts and minds. This is true to our current situation. That is, we are the types of creatures who can listen with God, even think and talk with God, and usually we refuse to do so. The traditional answer distorts matters more than a little by claiming we are descended from god-like creatures who were created with a full awareness of God, god-like creatures capable of fully obeying God's commandments.

In fact, we are descended from creatures which were also the ancestors of chimpanzees. When we respond to God's call, we are not returning to a state our ancestors occupied but rather rising to a state never before seen by any creatures in this universe. It is a state we could have never even foreseen in all its glory since it involves a special filial relationship with a God who revealed Himself in specific words and particular events in human history. True it is that divinity in some vague sense is revealed in nature and in human thoughts, but those cloudy revelations would not have let us so much as guess at the existence of the Triune God however much He is the most basic of all facts and truths, the source of all other facts and truths.

We have the words that Moses and the Apostles left us. In the quiet stillness of prayer, those words can resonate inside of us, powered by the God who created the stuff of which we are made and who then brought us into being in this story He is telling. But we must remember that our Creator brings us into existence on an ongoing basis by acts-of-being.

Metaphysics and physics provide the tools to help describe God's acts-of-being by which matter and energy and fields are created once and then again at all instants for which they exist. It's the tools of narrative that we need to understand our own beings as well as the beings of all complex things, living and non-living, grizzly bears and galaxies alike. Once you realize that God is a story-teller – participating in His own story, you can get over the illusion that God is composed of some sort of substance that exists out there so that He has to invade His own Creation to simply talk to us, often not able to talk to us without surrogates such as the angels. God talks to us, listens with us, talks with us, mostly in quiet moments. He spoke a bit more loudly and more clearly with Moses, quietly but still more clearly with the human nature of His Son, Jesus of Nazareth.

Equivalently, we are probably seeing at Lourdes the ways in which God actually carries out miracles. He simply uses the natural processes which can lead to occasional unlikely cures, for example, a degenerated hip in a

young woman suffering from lupus.¹ The number of unlikely spontaneous regenerations or spontaneous remissions from cancer is extraordinarily high relative to expectations though still few and far between. God is not violating the various physical laws He instituted in this story, but He is acting on the pilgrims to Lourdes with great generosity within those laws. He can heal our bodies within the constraints of the physical laws He Himself created. Anyone who believes God has created the stuff from which He shaped this universe, anyone who believes He is our Creator, should find it relatively easy to believe He can heal within the limits He Himself set. Rainbows still appear and the covenant with Noah remains in effect as God chooses not to send floods that wipe out mankind. More generally, God respects His own Creation, His own work.

There are some deep problems in this area and I'm moving right past them, but I'll speak to one broad area. We do not distinguish well between what Hume would have called habits of nature and true causality. That he was too aggressive in denying causality is beside the point. His analysis contains at least a great deal of psychological truth and more scientific truth than some would allow.

In fact, we do not face so much a choice between law and habit as some might think. There are some behaviors of the stuff of this universe which seem to be absolute laws on first examination but later turn out to be a result of the initial conditions at the beginning of the expansion of this universe, which expansion is usually called the Big Bang. The manner of our movement through time and the consequent behavior labeled as the *Second Law of Thermodynamics* (entropy increases over time) doesn't seem necessary by any known rules of physics. There are a result of those initial conditions and likely also a result of God infusing energy in such a way that the universe began to move strongly in response.² There are speculations

¹Flannery O'Connor's hip was badly degenerated when she visited Lourdes with her mother. Miss O'Connor's regenerated spontaneously shortly after her return to the United States. In earlier versions of this book, I mis-remembered the event and thought she had not even entered the waters.

²This is to say that the universe began this expansionary stage in such a low state of entropy that it was, and is, extraordinarily probable that it would move into regions of higher entropy. If the current model of the universe's expansion is largely correct, this would be a strange fact, unverifiable in any direct way, also a fact to be properly used in different ways by metaphysicians and theologians and physicists. Yet, in the end, it is one fact about one universe and needs to be put in context of a more unified view such as I'm struggling to provide for myself and others.

and experimental results that indicate that backwards movements in time are possible and do occur even under the current circumstances of this universe, but the necessary expenditures of energy, and perhaps other factors, make it extremely unlikely that we will ever detect more than the occasional subatomic particle jerk backwards in time in some very high-energy experiment.

Returning to the more general argument, I would like to ask why people think that God's only choices are:

1. Let the world roll along in a deterministic way as if it were an experiment in freshman physics; or
2. Intervene by breaking laws and bringing about events which are impossible by those laws?

God is here. He's participating in this story He's telling and has complete freedom to change the direction of this story or the many sub-stories which are part of it. It wouldn't bother me at all if I were to go before God after my death and hear that the Lord Almighty has never broken one of the physical laws He set for this world I call a story. He doesn't have to since He has chosen to participate in His own Creation. We have often been told that the flapping of a butterfly's wings in Brazil can lead to a series of events that produce a hurricane in the Caribbean. Do we think the Maker of all that exists has less power or freedom to use physical laws than a butterfly has? Or less power or freedom than those particle physicists who know how to send subatomic particles back in time to the extent of billionths of a second?

Even more importantly, why have Christians and other Theists adopted so many Deistic assumptions about the relationship between the Creator and His world?

I've explored that question a little in *World* and may get back to it eventually. For this book, the most important question has to do with the tendency of even Catholic theologians to speak as if God is in some mythical divine home called Heaven. When the Almighty wishes to speak to a human being or to cure a child of leukemia in the waters at Lourdes, we would have Him sneak into His own world, acting as if He were some sort of alien entity or perhaps a wizard from Middle Earth.

Whether God is speaking inside of our hearts or minds or speaking publicly through a prophet or an angelic manifestation, He can do so in a

way that is the most natural of processes. He is here and more fully here than any of His creatures. We should not let abuses of cause-and-effect language make us think that God is only the ultimate cause, the cause which brought the Universe into existence 15 billion years ago. He is still the main cause in each and every event which occurs in His Creation and He can move things in a different direction, acting with far more freedom than we do when, for example, we help cure a child by participating in some sort of medical treatment for cancer, maybe just by donating blood or bone-marrow or by sending a few dollars to a Shriners' hospital.

St. Augustine of Hippo told us that God is deeper inside of us than we ourselves are, He knows us better than we could ever know ourselves. He is also more fully present than the chemicals themselves in the metabolic processes that need altered that a virgin might conceive a human nature for His Son. He is more fully present in the metabolic processes that need to be altered so that the child's leukemia might be sent into remission. As the Creator who must act to bring into being each and every bit of matter or energy or field or space or time, He is also more present in a supernova than are the gravity fields or the hydrogen atoms being rapidly fused into heavier elements.

I repeat: I feel no need to believe God executes miracles by breaking the laws He set up for this world, but I also have no reason to believe God sits on a throne in Heaven, looking down upon His Creation as stars and human beings travel from birth to death. I certainly have no reason to believe in a God who performs miracles in the sense that He has to invade His own Creation and break His own laws in order to move the World in the direction He prefers. To be sure, we have far less than a complete or perfect understanding of God's World and its laws but we potentially have a better understanding than earlier generations of Christians who understood the World as being the cosmos of Aristotle or something far less rational.

We should remember that many of our traditional Christian beliefs made sense to powerful thinkers in the context of an Aristotelian Cosmos which had far different properties from the Einsteinian Universe which has come into our view over the past century or so. The Bible did not supply these beliefs in the nature of the physical world – philosophical and scientific writings provided those sorts of beliefs; but we now read the Bible in light of those beliefs and think they are embedded in holy Scripture. The writings of Aristotle and other great pre-modern thinkers are no more, and no less, sacred than the classic works of modern science, such as Einstein's papers

on the two theories of relativity or Darwin's writings on his observations of nature in Patagonia and the Galapagos Islands. I should also point out in all fairness that many insights from Aristotle and other ancient pagan thinkers have survived in modern scientific and philosophical views, including the Platonic insight that the world might have been created from nothing, true nothingness and not just empty space and empty time.

It seems most plausible and most pious to me to believe that God created a physical universe which is adequate for telling this story which I call a world. And He has chosen to reveal to us knowledge we need to become His companions and which we could not otherwise gain, in principle or because of the practical limitations of finite human nature. God can speak with us more easily than we can speak with each other. If we learn to submit to Him then we might participate in this divine act of hearing, greatly attentive but free of anxiety, we can begin to share in God's freedom, in His very life.

2.3 Can Revelation Be Kept Pure?

In a word: No. God told us He is three Persons in one God. Roughly speaking, we can try to imagine a community of three persons sharing substance though not in the way of a human being who allegedly has three personalities. Nor, in my opinion, does the traditional Scholastic analogy work: the individual human being is like the Holy Trinity in the union of intellect, reason, and will in one creature. Father and Son and Holy Spirit are three Persons and not just three functions of a single being. The three Persons of the Holy Trinity remain distinct, fully present and fully active, though there is but one Act-of-Being which is Himself.

Let's face it. This whole business of three Persons in one God doesn't make much sense to a human creature and we shouldn't expect it to make sense. We try to make sense of the self-revelation of the Triune God, but we distort as soon as we go beyond the simple definition of Father, Son, and Holy Spirit being one God because this is more a fact than a conclusion from discursive reasoning. We search for proofs using presumably more fundamental facts than the reality of the true God: Father and Son and Holy Spirit in one God. But there are no such facts which are more fundamental than the God who truly exists.

We need to try to make sense of God's true nature, not because it's logically necessary, but because that is the sort of creature a man is. And,

for the same reason, we need to make sense of God's Creation – a task which does lie in the realm of human possibilities, at least in principle. Our minds will weave various tales to explain the world around us, often using various bits and pieces of superstitions or sloppy thinking that can be picked up on the street-corner as it were. In this decaying part of the Modern Age, as I search with faith and hope for signs of a new phase of Western Civilization, an excessive confidence in secular and skeptical reasoning has destroyed the empirical foundations of human reason and intellect. Call our ways of thought 'materialistic' or 'idealistic' if you will. What's clear to me is that we don't pay proper respect to empirical knowledge, knowledge of God's Creation.

A digression is called for. In the traditional language of Western philosophy, at least since the Middle Ages, reason refers to discursive reason which can be either figuring out, step-by-step, how to go about financing a new business or figuring out a proof in plane geometry. The intellect is a quieter and more intuitive 'part' of the mind which deals with abstractions and directly perceived truths. This is a complex and entangled mess here, apparently true insights were bundled up with cognitive and empirical errors – though ones repeated by biologists in many cases until they were able to actually investigate the detailed workings of brain-cells and to map out brain-regions, watching them at work in recent years.

We, Monday-morning quarterbacks that we are, can see that the ancient and Medieval and early Modern thinkers seem to have made a serious error. That is, they seem to have reified activities of the human animal, making it difficult to see that it is truly possible for that physical animal to become a true person, unified and coherent and complete in and of himself. Because of difficulties in understanding empirical aspects of the human being, those earlier thinkers traded in the concept of man as an organism for that of man as an assembly of more or less independent entities. In fact, we are organisms plastic enough that we can allow Christ to infuse us and reshape us into persons somewhat like Him. Eventually, I'll write more on this, but I'll return to the discussion of our knowledge of the God who truly exists – as opposed to some general intuition of transcendence or some general concept of divinity.

The dogmatic declaration of God as Father and Son and Holy Spirit in His unity, in and of itself, makes little sense to creatures who are fragmented even inside of their own selves, selves which in turn seem radically separated from the other creatures around us. Though inseparable by our own efforts

from our physical surroundings, we aren't even well-integrated into those surroundings. Evolutionary biologists point out that the very nature of evolution leads to a sense of alien-ness – we are adapted to the Earth of the New Stone Age when the human race became substantially what it is. That Earth no longer exists. And our desires to survive and our other basic desires lead us to seek to protect ourselves, to rise above our surroundings as it were. If we manage to achieve some degree of independence, we begin to nurture those desires, becoming selfish and self-centered and treating our fellow-creatures and our surroundings as mere means to our ends. Often enough, we will treat God as a mere means to our ends, using our prayers and worship to justify ourselves in our sins and errors and weaknesses – to the extent these can be fully distinguished. We are pulled back towards a nobler state, at the natural level by our social inclinations and especially our tender feelings for the young of our race. We can see divinity all around us if we are open-minded and open-hearted and we can hear the God who is His own Act-of-Being, the Holy Trinity, if we open our ears as well.

But the Trinitarian doctrine still makes no sense to the untutored human mind. The self-revelation of God about His inner life is the rawest and most basic of facts, but it seems so unusual and complex to human beings that we strive to build intricate structures of mind and imagination to support this foundation. We have built many a skyscraper stretching towards the moon thinking that we are providing an undergirding for the foundation-rock upon which it rests. There have been some who have climbed to the summit only to announce that no foundation can be seen. There have been those who have climbed to that same summit to declare that all the glass and steel upon which they stand is part of the foundation. Skeptics and half-blinded believers alike have not done well when the inevitable storms or quakes have shaken those man-made structures, bringing down major pieces, inspiring fears that there is no foundation if the building falls so easily.

We do not need to explain the Triune God in terms of His Creation. We need to reshape our minds so that we accept Father and Son and Holy Spirit in one God as a fact more basic than our own existence, more basic than “ $1 + 1 = 2$ ”. In the end, we are Trinitarians or not. A dangerous thought but one that carries some truth: the universe has developed for 15 billion years and life has been evolving for 4 billion years on Earth that a creature might arise that would be capable of molding its brain to be God-centered in the true way, molded to think deeply and naturally in terms of the Triune

God. For the most part, we must allow ourselves to be molded by the Son, to be infused by His Body and His Blood in the Eucharistic Rite, to allow Him to reshape us into Christ-like beings, creaturely persons.

Man is a finite and fallible creature. All of his works, physical or intellectual or spiritual are provisional and will fail, though he may contribute to a lasting work of God: the forming of the Body of Christ. Even structures built upon the absolute truths of God's revelations are bound to fail, for the most part, though the Church will stagger through Her time on this world, a mortal gathering of mortal creatures. And the Church will be formed more truly on the other side, everlastingly a peaceful and well-ordered gathering of peaceful and well-ordered lovers of God.

The foundations will last even unto the end of time and even into the world without end which God has prepared for those who have accepted His love. After all, the foundations are gifts from God out of His own Act-of-being which is not formed in time nor in space, the Act-of-Being which had no beginning, and will have no end. The foundations are the knowledge of Himself which God has given to us and even the fountain of grace which allows us to form ourselves into better images of our Creator, creatures capable of sharing in the divine life. It is this sharing which would make it possible for a finite creature to live for time without end, and probably the only way that we could tolerate life for time without end.

Unfortunately, our very efforts to understand the revelations in the context of God's story which I call a world will ever and always end up obscuring and distorting those revelations, but not because that is a necessary result. The real problem can be seen when comparing St. Thomas Aquinas to most of those who have called themselves Thomists over the past seven centuries.

St. Thomas frightened the mainstream orthodox believers of his day by daring to integrate the thoughts of the pagan philosophers, especially Aristotle, into the Thomistic worldview. Aristotle was well-known as an atheist and a necessitarian because he was interpreted through the commentaries of Arabic philosophers who had turned him into exactly that – an atheist and a necessitarian.³ By baptizing Aristotle, St. Thomas probably distorted his own thought as well as that of the great pagan thinker but he had truly seen much that was good in the thought of Aristotle. In a similar

³So far as I can figure out, mostly from histories of thought, Aristotle was actually a pantheist who did not consider the Prime Mover to be a personal God in the different ways of Judaism and Christianity.

way, I have baptized modern science in *World*, but I admit to the similar dangers there.

In principle, empirical science can be stripped of ideological distortions though not of the provisional speculations which hold together all complex human thoughts. In the current context, it is more important to realize that those Christians, including most Catholic Thomists, who have claimed to accept modern, empirical science have really just taken some final conclusions from that way of thought and pasted it onto their pre-modern worldviews, under the illusions that those worldviews were made fully of revealed truths or truths magically accessible to human beings independent of the world into which we are born and in which we are formed.

As I stated repeatedly in *World*, some pre-modern worldviews were magnificent products of the human mind and spirit, but they were dependent upon speculations, intertwined with understandings of empirical reality, that did not hold up to the critiques of Galileo and his successors. Revelation cannot be stated to make sense to creatures unless it is supplemented by the provisional, and ultimately unnecessary, structures of human speculative thought – including our understanding of the physical world in which we live. We see the foundations partly by trying to construct various sorts of superstructures and seeing which ones are stable – for some few generations at best. Those worldviews will eventually be proven inadequate and defective. When they are held too dearly and too long, they will decay into superstitions, superstitions which will collapse in such a way as to hide the very foundations with which so many confuse them. Many there are amongst the faithful who live in those ruins, thinking them to be palaces.

3 Speculative Knowledge

3.1 Where Went Our Humility

We're entering a minefield when we venture to speak of speculative knowledge. From a human perspective, it's speculation that ties together all forms of knowledge, even revealed truths, that a coherent whole might be seen. This accounts for the illusion that philosophy is somehow primary, coming even before truths about God. Surely, thinks the proud creature, there must be a set of basic truths which can serve as building blocks for a human system of thought, the likes of:

- “X cannot be a and not-a at the same time”;
- “ $1 + 1 = 2$ ”; and
- “a implies b, a, therefore b”.

For centuries, Christian thinkers have joined the pagans and skeptics in believing that God Himself would be subject to such laws of thought though we understand so little of what a Being of pure existence could be like. Now, some of the best and brightest of mathematical physicists think to develop a mathematical system that will tell us how and why this universe came into existence. To be sure, thinking to gain some control over God's being by way of logical analysis is still worse than a similar ambition regarding this universe.

A little thought might resonate with a claim I made in *World*:

If the God of Jesus Christ exists, then that very particular God, the Holy Trinity, is the most basic of all truths and all facts. He is the source of truths and facts.

My entire argument in *World* was based on the assumption that human speculative intelligence is capable of making sense of our environments, bringing first a universe into view as God brought it into existence, and then enlarging that view to a world as we are able to see that universe as ordered to God's purposes. From there, we can ascend in abstraction even to the truths God manifested for all of Creation, the truths from which He shaped created being.

So, I'm committed to the view that speculative intelligence can work, necessarily must work, by taking revealed knowledge as a foundation but taking other sorts of knowledge as if they were independent of the God who is the source of all knowledge and all truths and all facts. This independence is secured by God's truly free will. He was not forced to create this particular world. Our freedom in exploring Creation is an image of God's freedom in creating it.

Think of yourself coming upon the most marvelous sort of house. You wonder who built it and start to work in the style of a story-book detective but not having access to such evidence as fingerprints, only the house itself and its wonderful design and its wonderful parts. It seems likely you could construct a proof that this house was built by a competent builder, but which?

God is a very particular Being and not just a general sort of deity as was the object of study for pagan philosophers and Enlightenment neo-pagans. There's no way to go from this universe to the God of Jesus Christ unless you could prove He was bound to create this universe, in which case, He wouldn't be the God of Jesus Christ. Speculative knowledge is powerful and enlightening when it's the result of careful thought upon all the available revealed and empirical knowledge as well as relevant speculative thought of others, but it's provisional knowledge in a very strong sense. There has even been a major case where empirical knowledge of the physical world advanced by adopting a speculative framework of knowledge which now seems to have been less truthful than prior speculative frameworks – but more specific and 'scientific' and thus subject to rational exploration.

Most literate people have at least a vague awareness that Einstein's theories of relativity deny that there is such a thing as absolute space to provide a reference for movement.¹ Few people know that Newton battled

¹I'll ignore time because it involves some greater complications that have nothing to do with my current discourse.

to gain acceptance for his proposal of a universal framework of absolute space because it really doesn't make intuitive sense, but Newton developed his laws of motion using Euclidean reasoning that requires such a framework.² One of the interesting aspects of modern times is the number of people who defended Newtonian concepts of the universe against Einstein's 'relativism' not realizing that the absolute space of Newtonian physics is a modern idea and that pre-modern thinkers had more flexible and varied ideas about time and space. In addition, Einstein's theories of relativity are not really what the name implies. Space and time are replaced with a space-time structure which has well-defined geometric properties and the speed of light is invariant in a way that's stronger than the (false) absoluteness of Newtonian space and time.

Einstein returned us to a universe seen in terms more compatible with the Gospel, though not necessarily so friendly to efforts to explain the universe in textbook, discursive terms. When the universe is regulated by invariances such as the speed-of-light, a matter of communication, then relationships are dominant over the substances which are objects of those relationships. The world did not come to be and then God chose to love it. The world came to be as a result of God's love for it.

Newton used questionable speculative ideas in order to create a consistent worldview where the physical components were described by his new dynamics. This means that not only did the things of this universe behave according to the three laws of motion, but they also interacted according to his brilliantly conceived but inconsistent theory of gravitational force. This latter theory was inconsistent in that it assumed some sort of transmission of that gravitational force which was instantaneous no matter how far the distance between, for example, the earth and the moon. And yet it was consistent with the three laws of motion that Newton also proposed, because they also described forces as being transmitted instantaneously and without any changes to the 'stuff' of which the interacting things were made. In a truly astounding act of intellectual weirdness, especially from

²It is a matter of some strangeness that so much of modern thought descends from Kantian philosophy which raised the errors forced upon Newton to the status of metaphysical truths. The absoluteness of space, even independent of the objects in that time and space and the relationships between those objects, was treated by Kant as a metaphysical axiom, an absolute truth. Biographers of Newton say that he was uncomfortable with those assumptions of the absolute nature of space but knew he had to make some such assumptions to move forward.

the Christian viewpoint, space was no longer a creature – space was beyond the control of God Himself though available as a container for God’s Creation. An example of the more Christian viewpoint is that of St. Paul where height and depth, physical dimensions, are considered as creatures (Romans 8, 38-39). More than that, the absoluteness of time and space – as separate entities – along with the behavior of creatures inside time and space implied that creatures were not reshaped or inherently changed by their relationships with other creatures. Love could no longer change us because we stood apart from all relationships, doomed to be what we were at our conception.³

There is also an example of speculative knowledge being used to create a framework for the revealed knowledge of the Gospels. As I described in *World*, at least some of the early Fathers of Christianity saw that the assumption of an immortal soul was not necessarily consistent with Biblical revelations and is in potential conflict with the concept of a bodily resurrection. Over time, later Fathers – including Augustine and Aquinas – integrated the idea of a separable soul with Christian doctrine.

Aquinas considered the soul to be a limited thing – only the organ of conceptual thought and not of love nor faith nor hope nor even of discursive reasoning – and, according to Gilson, Aquinas was careful to respect the truth that only God is truly immortal.

Aquinas labeled the human rational soul as being subsistent, that is, it came into being by an act of divine creation and then continued to exist unless God specifically destroyed it. This was perhaps the most coherent possible idea of a human soul made of soul-stuff, but it makes no sense in Einsteinian terms. The idea of a soul which has its existence and its development separate from those of the body is also inconsistent with what is known of human nature, from observations of children developing or people sick or dying, and also inconsistent with what’s known from scientific research on the human brain. It’s also inconsistent with the existential insights of Aquinas.

³There is another act of intellectual weirdness in the later history of physics – it was Einstein who defended the view underlying Newtonian physics and the ‘radical’ quantum theorists such as Bohr who, at least implicitly, placed relationships before substance. See my articles, *Einstein and Bohr’s debate on the meaning of reality* at <http://loydfueston.com/?p=10> and *Quantum Mechanics and Moral Formation: Part 1* at <http://loydfueston.com/?p=34> for discussions of this issue.

All that exists is an act-of-being and God is His own Act-of-being, but a subsistent soul would be an entity out of the essentialist philosophy of Plato and Aristotle and most other philosophers. So far as the rational soul is concerned, creation would be a one-time event rather than an ongoing act by which God continually brings into existence that which would otherwise fall into the abyss of non-existence. God would be an Intelligent Designer rather than He who is His own Act-of-being. God would no longer be the source of creaturely being at each instant.

Aquinas thought he inhabited an Aristotelian cosmos where heavenly being is with us though on the other side of the moon's orbit. Different types of stuff could inhabit such a cosmos with no contradiction. Moreover, the human rational soul, at death, could fly off to Heaven which was on the other side of the moon – though perhaps the seventh heaven was far beyond. That could actually make a lot of sense – the hard part was figuring out how the spiritual stuff of the immaterial and immortal human soul could make its way to the rocky regions below the moon's orbit. Conception was not enough; each individual immortal soul had to be implanted by God, in an act which was undetectable in empirical terms though it involved empirical creatures living in an empirical world.

Against this sort of view, I will claim that God's acts-of-being in this world are empirically detectable and subject to human exploration – at least in principle. God manifested the truths He wished to use for Creation, in an act-of-being which lies – in a manner of speaking – on the other side of the so-called Big Bang or beginning of this expansionary phase of the universe. This act of bringing stuff into existence is undetectable in principle, but God's acts of shaping from that raw stuff, that very abstract created being, are subject to human exploration and analysis and speculation and understanding. We can see God's Creation, even using our imaginations to see the parts of Creation which lie beyond this universe, but we can't see God's act of creating from nothing, not even in our imaginations.

There is no far beyond in the Einsteinian universe, but only more physical stuff. True it is that there is still the possibility of laws of motion and physical properties changing over time and being different in different regions, but those differences would still be at least mathematically describable after the fact and probably predictable. I'm not advocating a universe which makes modern reductionists and positivists comfortable, not even a universe which would make most modern scientists comfortable. I'm advocating a view of our universe which allows us to see it as a true world:

unified and coherent and complete. In other words, I am insisting that this physical universe is part of a story, and many stories, God is telling. As Aquinas claimed things to be true, I am claiming stories of things and physical creatures to be true and even moral in a more complete way, that complete way being determined by the intentions of the Author. I'm also claiming that Heaven, the world of the resurrected, has to be sought elsewhere than in this world.

I consider a clear and unqualified view of God as Creator and Ruler of this universe, as Author of the story which is this World, to be more important to Christians than any human soul could be. I can readily believe the Creator of the Einsteinian universe, or some other coherently described universe, is capable of resurrecting a mortal creature who has suffered true death. By 'resurrecting' I mean God would direct into that new world the same love He has for a human being in this world and it would be that human being alive again. That man or woman or child will be cleansed and perfected in certain ways beyond our imaginations formed to this world, though we have clear hints in the post-resurrection stories of our Lord Jesus Christ. Such a view, placing the full weight upon God's broad shoulders, allows a full consistency between the revealed truths of Christianity, modern empirical knowledge, and a reasonable though highly speculative understanding of Creation as a whole.

To step back for a moment, the problem with many traditional Christian theologies is that they were fleshed-out using either Neoplatonic or Aristotelian speculative frameworks of knowledge. That was not wrong at the time, but those bodies of speculative knowledge are not consistent with what is now known of the physical world. They are also not consistent with modern knowledge of mathematics and logic as I discussed in *World*. There is nothing in those frameworks of speculative knowledge which are important to Christian belief though they were once important in tying Christian beliefs into a coherent system. Arguably, the philosophical frameworks of those Christian theologies were not fully consistent with Biblical revelations but it is likely there are similar objections which can be fairly raised against any possible speculative framework for revelation which is possible in this mortal world.

We have no reason to believe that the bodily resurrection is dependent upon the existence of an immortal human soul. The same God who created this universe and created us, in a slightly different way, can bring us back to existence in a different phase of Creation – the world of the resurrected.

Some Christians act as if God's powers as Creator are limited so that we are gone forever if we do not have continuous existence from here to the world of the resurrected. It is pagans who need and desire a soul that can survive bodily death – to Christians, such a soul would actually be a burden preventing the sort of unified, Christ-like human being that can be truly labeled as a 'human person'.

Einstein's definition of a universe implies that truly different sorts of being cannot be found in the same universe which is defined in terms of a common gravitational field and all that is subject to it. Einstein's theories also imply strongly, despite science-fiction nightmares, that creatures cannot travel of their own power from one universe to another.

God is His own Act-of-being rather than a being of substance analogical to creaturely substance. The Creator is present in each and every bit of matter or space or time and has no need to travel from this universe to that of the resurrected. It is only He who could possibly move a creature from one to another and this for a simple reason: any creature or entire universe exists as an object of God's love. If it is possible for a creature to move from one universe to another by natural means under his own power, as happens in some science fiction, then those two places are not truly separate universes. Most likely, we simply die and then are created anew in the world of the resurrected when, and if, God chooses to direct the love that is me or you to that new world.

3.2 What Then is Speculative Knowledge?

One definition of the act of speculating in the context of philosophy is:

Speculation The act or process of reasoning *a priori* from premises given or assumed.⁴

A more general definition from the same dictionary is:

Speculation Mental view of anything in its various aspects and relations; contemplation; intellectual examination.⁶

⁴ *Webster's Seventh New Collegiate Dictionary*, based on *Webster's Third New International Dictionary*. G. & C. Merriam Company, Publishers, 1970

In my worldview, speculation draws even its premises from Creation, having a very small core of revealed truths and a body of empirical knowledge. That body of empirical knowledge has grown greatly over recent centuries.

Speculative knowledge is drawn from that empirical knowledge by a very complex process which is iterative and recursive and very, very dynamic in cultures where individual minds and the communal 'mind' are in active development. Cultures with high scholarly standards don't necessarily qualify while a barbaric culture filled with thinkers responding to their environments might well be producing serious and valid speculative knowledge.

For now, I'll move on to show my way of deriving speculative knowledge by the doing of it. It's possible I may continue to work that way in my writings or I might address this issue in a direct way in a later article or book.

Biological Evolution and Moral Nature

Christians, including some powerful thinkers, have trouble reconciling biological evolution with a belief in absolute moral truths, even with the basics of moral order explored so well by both pagan and Christian thinkers over the centuries. For many a decade, biological evolution has been considered tightly, perhaps necessarily, linked to disorder and randomness. The basic theories, even without ideological distortion, did a lot of damage to the idea that man is a special creation somehow qualitatively different from chimpanzees and pigs and salamanders. Some of the most clearheaded evolutionary thinkers, such as Thomas Huxley and George Williams, developed a sort of secular manichaeism after they sensed some sort of malignant and perhaps personal evil which man had to fight against to become a moral creature. This evil force was the dominant force in a world in which the most innocent of young children, such as Huxley's much beloved son, could die after great suffering.

This development in the thoughts of men such as Huxley and Williams was remarkable for they were both not only brilliant scientists but also seemed to be materialists in an intelligently non-reductionistic way. If man's morality came not from a biological nature, where did it come from? Morality can't come from nature, on this they agree with many Christians, though they believe nature to be evil whereas most Christians who reject

evolution as the real answer to the rising of mankind believe nature to be morally meaningless. A volcano has no moral aspects, nor does a leopard, according to this new form of dualism.

My way of dealing with the source of creaturely morality is to start with my claim that creatures and their relationships are manifestations of thoughts of God and then ask:

Do not the thoughts of God have moral aspects?

I'll mention a few random facts:

- Voles, a rodent similar in habits to prairie dogs, show altruism in the sense that they give their lives to save nearby voles, standing in the open to give warning as a predator bird swoops down. Their tendency to do this is greater for more closely related voles. It's likely that voles living near each other from a young age would act this way, that is, that physical nearness is the proxy for genetic nearness.
- Wolves have stronger instincts not to kill members of their own species than do human beings.
- Maternal love, the strongest and purest of creaturely loves, is stirred into being by the hormone oxytocin.
- Research shows specific ways in which the brain of a female rat is altered after giving birth. For example, she becomes much faster at finding food and returning to her nest than female rats who haven't given birth. Human mothers also show brain changes after giving birth. For example, giving birth changes a mother's brain so that she can pick out the cry of her own baby in a roomful of crying babies.
- Sociobiologists have presented serious arguments, and supporting facts, that indicate that love between mates began with love for their offspring. The 'accidental' transfer of that love would have resulted in more strongly bonded mates who would have presumably been better parents.

These facts are typically viewed as being opposed to our understandings of human moral nature and our beliefs in absolute moral truths. I'll suggest here that this view can be maintained only by thinkers bereft of imagination

and that a more reasonable interpretation of the known facts of moral nature in light of evolutionary facts and theories is:

Moral nature has evolved.

This is not to say that I can provide certain arguments that moral nature has developed along the sometimes ugly and bloody path of biological evolution, but I do believe a human thinker with a well-developed imagination can step away from the prejudices he's inherited and see that there are great similarities in the patterns of the evolution of the eye and those which seem to point towards the evolution of moral nature. One similarity is that there are animals which can see better than us and animals which have stronger versions of important moral characteristics, such as the wolf with its stronger instinct against killing members of its own species.

It takes an imaginative leap, a leap of speculation, to see still further than I've indicated so far. We know that God tells the story of salvation, beginning with the evolution of human creatures and culminating (though not ending) with the Incarnation of the Son of God, His human life, His mission, His suffering and death on the Cross, His resurrection, and His final commissioning of the Apostles.

Contemplation of modern empirical knowledge indicates to me that the drama of salvation is embedded in another story told by God, one stretching over billions of years – the birth and evolution of life on Earth. Moreover, that story is embedded in a story of this dynamic and expanding universe, a story taking place in an initially explosive phase of expansion. That explosion, the so-called Big Bang, was probably some sort of transition in the state of physical energy-matter.

For my next example of the possibilities of speculative thinking, I turn to the birth of this universe and, more specifically, to the question:

What existed before the universe expanded into its current sort of being?

Does the universe have a parent? Is there a creature from which the universe was born?

The Big Bang and the Primordial Universe

In my first published book, *To See a World in a Grain of Sand*, I traveled back in time to the Big Bang and then beyond. I'll not repeat that journey here, but I'll say that the first step in my contemplations about the nature of this universe was to note that astrophysical observations of fossil remains of the early universe and particle physics experiments here on earth tell us that at high temperatures or – equivalently – at high densities, matter and energy and fields begin melting down into a smaller number of classes or types of 'things'.

Moving forward in time, I said in *To See a World in a Grain of Sand*: “When the temperature cooled down to a certain point, the stuff of our universe went through phase changes much like that of water cooling down and suddenly becoming a different state of matter – ice. In the case of what is called the electroweak force, cooling caused it to change state so that it partially froze into the hotter, or higher-energy, electromagnetic force and the cooler, or lower-energy, weak nuclear force. One specific symmetry was broken.” In this statement, I intended to say that both forces were much cooler than the electroweak force but electromagnetic force is hotter, or more energetic, than weak nuclear force.

Little is known about what happens to the remaining forces and other entities at the extremely high densities which occurred in the first thousandths of a second after the expansion of our universe began but I hypothesized along with some theoretical physicists that the meltdown continues as we move imaginatively backwards in time, or the freezing continues if we move forwards in time. There are various schemes worked up by those physicists and not all are consistent with my proposal but one interesting idea is that time and space as we know it don't exist on the other side of the Big Bang.

I contemplated these facts and speculations, along with many others from the world of modern empirical knowledge, in light of Thomistic existentialism, including the insight that:

Things are true.

From there, I developed my own ideas on the stuff from which this universe was shaped by first noting the ties between thing-like being and truths. Things are true and, I added, truths are thing-like in being. That is, I began to wonder if God had created truths as we know them.

Soon enough I'd expanded my worldview to include the basic stuff of Creation, the Primordial Universe, a manifestation of the truths God chose for Creation. Details can be found in *To See a World in a Grain of Sand* or in various writings at my websites, <http://loydfueston.com> and <http://loydf.wordpress.com>. More details will be forthcoming, God willing, in future books or future writings to be posted on my websites.

4 Scientific Empirical Knowledge

4.1 Overview

By ‘empirical knowledge’, I mean that knowledge which comes from experience or observation. Basically, it is what comes in through the eyes and ears and nose and senses of the tongue and fingers as well as our experiences or observations of our own bodies. Empirical knowledge also includes knowledge we acquire or refine through instruments that extend our physical senses. It includes astronomy and the art of barbecuing a slab of pork. It includes ballroom dancing and jazz dancing and ballet as well as civil engineering and chemical engineering and mechanical engineering.

Now comes the confusing part:

All of our knowledge starts with empirical knowledge but empirical knowledge is not self-organizing. It must be organized by speculative knowledge, frameworks if you wish. At the same time, we should be open to the lessons of history and our own individual lives: we should be willing to admit that it is only revealed knowledge that can give the general structures that tell us the overall purposes and meanings which are the foundation of our world and our individual lives. In fact, it is only those revealed purposes and meanings which can allow us to see a world in our universe, itself an entity we can see only with great uncertainty.

In this chapter, I will make some comments about empirical knowledge in general but will mostly be talking about systematic or scientific forms of empirical knowledge. I’ll take up practical empirical knowledge in the next chapter. This causes an artificial split in accepted realms of knowledge and

practice. For example, a modern farmer might use some theoretical knowledge to interpret seasonal weather forecasts and much practical knowledge handed down from his father and grandfather, which practical knowledge might tell him what pattern of timber harvesting is appropriate for the wooded areas of his land. The most theoretical of scientists seem to be educated by apprenticeship to master scientists as much as by reading journals and textbooks. Medicine is possibly the best-understood example of a field which is an entangled mess of theoretical and practical knowledge. For now, I'll ignore these sorts of entanglements and consider 'scientific empirical knowledge' and 'practical empirical knowledge' as separate disciplines if only because that's how we tend to split knowledge in our daily talk and thought.

When discussing the more systematic or scientific forms of empirical knowledge, I will generally use the term 'science', which originally referred to any way of thought which had reasonable procedures for acquiring, organizing, and understanding data that it might become true knowledge. In recent centuries, some thinkers have spoken or written as if the term 'science' refers only to physics and chemistry and biology and the other physical sciences. Others use the term 'science' to cover such fields of study of man as sociology, history, and so forth. I think this is appropriate so long as the practitioners in those fields apply the appropriate discipline. This doesn't mean that the sciences which study, for example, the art of music, should use tensor equations as Einstein did in the general theory of relativity. It means they should use the forms of discipline appropriate to their field. If I'm right that more concrete being 'melts' into abstract being, then disparate forms of concrete being might be shaped from the same abstract being. From there I can speculate that the knowledge of those forms of concrete being might be one or at least overlapping at some level of abstraction. In that case, all fields that deal with relationships, such as moral philosophy and moral theology, might benefit from use of concepts developed by Einstein and others who figured out how to apply tensor calculus and differential geometry to describe various relationships under the constraints of specific invariant relationships.

History, the attempt to reconstruct a narrative flow of events, is science as much as history, the attempt to reconstruct a chronology by way of radio-carbon dating. The wordsy study of literature and the meanings inhering in Melville's use of symbols is as much science as the efforts of linguists to find the emergence of grammatical structures in specific de-

velopments in the human brain. At the same time, we have to recognize there is some evidence that the ‘harder’ sciences have managed to maintain their methodological standards better than any other fields of academic studies. Perhaps, discipline allied with well-structured methods is easier to maintain?

Some of the sciences of the modern world resemble history as much as they resemble laboratory chemistry, or perhaps even more. Amongst those historical sciences, I would count anthropology and archeology, cosmological physics and geology – and most certainly evolutionary biology. Narrative structures are necessary to put Humpty Dumpty back together again after we’ve done our reductionistic best to turn him into shell fragments and piles of glop.

4.2 Verifiable Sciences and Historical Sciences

By verifiable sciences, I mean those like physics and chemistry where:

- the results of experiments and observations (of perhaps solar events) have to be published with enough information on procedures to allow other scientists to verify those results; actual verifications have to occur for the results to be generally accepted; and
- any theoretical and speculative results have to (generally) be consistent with experiments and observations from the past and, if the results are important, will lead to predictions that would not have come from already accepted theories and other speculations. A truly revolutionary result might cause scientists to realize they were observing with biased eyes in past years and, in those rare cases, even seemingly rock-solid observations and theories might be tossed.

But even physics and chemistry are not always verifiable when the practitioners in those fields start to deal with more complex events which develop over time. Sometimes those events, essentially historical, can be repeated under controlled circumstances and sometimes not. Even events which seem to be repeatable in principle might not be repeatable. For example, the cosmological principle posits that physical laws and the underlying substances are the same over the time between the so-called Big Bang and

some unknown end to this universe and throughout the entire expanse of this universe. This should not be taken to mean that conditions are the same throughout the time and space expanse of this phase of Creation that I call the universe. It may be a simple case of unwarranted human pride to assume that we can reconstruct even a theoretical description of the conditions on Earth when life began more than three billions years ago. We have reached a point where it takes great genius on the part of particle physicists and a lot of funds from the tax-payers to reproduce conditions in the early Universe and it would likely take both genius and a lot of funds to reproduce specific, small-scale conditions similar to those of the early earth when life was first emerging – but we don't even know what those conditions really were.

Astrophysicists working on the early moments or seconds of the universe work with states of matter which are very basic. There was little thingness and consequently, it's plausible that a model can be developed that describes well what happened to bring the world to a state where things appeared. Theoretical physics at that level can be seen as a branch of metaphysics, a form of reasoning about truths which are absolute in some sense, but the situation would have changed dramatically as soon as the complexity, sheer messiness, of things emerged out of that early bath of radiation and unstable fundamental particles. At that time, the nature of the universe became that of a narrative, a story more like a novel than a solution of a set of equations. It's not even much like a complex set of poorly defined equations. This is not to deny that equations play a role in our understanding of the universe or things inside the universe.

Entities in a coherent story must correspond to possibilities laid out in the laws and manifested truths of the world of which that story is a part or the entirety. Events must also obey those laws and manifested truths. That doesn't mean that the life and work of Beethoven can be reconstructed by a deep understanding of genetics and cellular mechanisms. Nor does it seem likely that the history of this universe, such as the chapters in which galaxies develop, can be reconstructed by a deep understanding of gravity and particle physics. It does mean that any plausible reconstruction will use such a deep understanding.

The universe is a historical entity and so is each complex thing inside of it. It can be said that a galaxy is a story and not an object amenable to full description by way of formal physics. Most certainly is it true that a human being or a rat or an amoeba is a story and not just a set of metabolic

processes with no context other than immediate chemical interactions with the environment.

Even serious scientists seem to forget this aspect of physical nature, thinking that their findings in verifiable matters can translate directly into a complete understanding of this universe. Most of what happens in this universe is not verifiable or even repeatable but is part of the flow of a complex story.

4.3 The Empirical Nature of All Knowledge

As I noted often in *World*, Aristotle and Aquinas observed the human mind is formed by our interaction with the physical world around us. More than that, Aquinas was ready to admit that man was so tied to his body that he could only know through the physical world. Thus, God can be known, at least proximately, only by way of His created things, His effects in the world. This doesn't mean that we are restricted only to what some would call worldly knowledge. God can speak to us directly, through the effects He has upon our brain-cells or our ear-drums or our eyes. We cannot communicate with God in His transcendence, not directly, because we cannot detect an act-of-being, not even the Supreme Act-of-being. We are creatures who are the result of acts-of-being performed by God and those acts-of-being inhere in the substance we call flesh and blood.

We do not know act-of-being, we do not know existence directly. What we know is substances that we can perceive through sensory organs also made of substances. We do not know God in His transcendence but we can know His Incarnate Son, our Lord Jesus Christ. Our substance is perhaps necessary to our situation as creatures with some moral freedom, with some independence from God Himself, but that is a topic for a book about our spiritual duties and not for one about the sorts of knowledge available to human beings.

Our inability to see God as the principle actor in His own Universe is perhaps due largely to our inability to see the way in which the Supreme Act-of-Being carries out His plans. A God of substance, however 'divine' would seemingly be detectable. After all, as I said above, we are creatures of substance and it is substance we can sense and think about. Ours world is one of substance in which we move about. The human race was selected for survival and successful reproduction in this particular world of

a particular type of substance. We're creatures of substance and we assume deeply in our languages and our thoughts that substance carries its own existence. We need to learn how to speak otherwise to better understand God's revelations.

Modern science bothers many Christians by the questions it has truly raised about this universe, this phase of God's Creation. It bothers still more by the questions it has raised about the universe coming into existence. Is a transcendental Creator necessary? And certainly it has caused many moral problems by giving us more powerful tools to commit various sins. We should not let our own sinful nature or our other sorts of weaknesses give us the wrong idea about empirical investigations of God's universe. It's important not only because of God's commandment to 'subdue' the earth but also because of what St. Thomas understood: we are physical creatures and we know through our physical senses. Thus, we understand God by way of His effects in this universe. By better understanding this universe, we better understand God's revelations, both His commandments to us and also His self-revelations.

Most of all, modern science has given us some ways of thinking and talking that might allow us to attain a deeper knowledge of the nature of creaturely existence and a deeper understanding of God's revelations. By contemplating what astrophysics has to teach us about the nature of physical stuff and how it has come to take on the states we know about, that is, by contemplating the developmental nature of this universe, we can come to understand the need to see the things of this universe as passing from one state to another. By contemplating what quantum physics has to tell us about the primacy of dynamic relationships and the way they bring stuff from one state to another, we can gain a hint of the way in which God brings stuff to exist from nothing and then shapes that stuff – all by acts-of-being which are divine love. By contemplating what modern mathematics has to tell us about the factual nature of random numbers, and perhaps the most elegant of mathematical truths, we can better see God as the source of all truths as well as the source of all being. By contemplating what modern mathematics has to tell us about infinities up to absolute infinity, we can better appreciate the truth of the Augustinian insight that God's infinity is far beyond anything we can imagine when we say or think 'infinity'.

We'll get ourselves stuck in a rut if we merely contemplate all of this in terms of traditional, or modern 'radical', ways of viewing Creation or God. We move in ruts in any case, but we can pass on to a rut that leads to

better places by turning to the Thomistic version of the traditional ways of viewing Creation and God – by seeing God as His own Act-of-being and by seeing Creation as the result of constant and ongoing acts-of-being which can only be performed by God Himself. This Thomistic version of the traditional ways of viewing Creation happen to coincide to a surprising extent with some of the more radical ways of viewing Creation which came from modern physics and mathematics. And now I've traveled in a circle.

I'll repeat one of my most basic claims:

This world created by God can be seen as a manifestation of the thoughts God wished us to have.

To be sure, God supplemented purely natural knowledge by revelations which can only be seen as such by way of faith. I'll discuss this issue, discussing why this is necessary in a later chapter. For now, I'll return to the question of how we can know something true about God or the world of the resurrected through knowledge gained from the things of this world. The answer is: faith of the sort that leads to an appropriate speculative analysis of Scripture and other physical communications from God, yet that analysis has to recognize that the world in which the resurrected will live as companions of the Son of God is part of the same Creation as this world. There is much work to be done to understand what that really means.

4.4 Can We Keep Empirical Knowledge Clean of Speculation?

The short answer is, “No”, but there is a longer answer – of course. Scientists will often say something like this:

Without a theory, there is no fact.

The human brain shapes itself to be able to perceive the sorts of entities and events to which it is exposed. The classic example is acquisition of language skills. Unfortunately, there have been some sad cases where children were not exposed to rich, human languages at certain crucial times, ‘windows of opportunity’ in the usual manner of speaking – those children typically were never able to use language in a fully human way, perhaps

using it as signs in the way of a smart chimpanzee or gorilla. Perceptual skills develop along with the very ability to perceive objects for what they humanly are, that is, what they are within the context of a particular human culture. Basic thinking skills develop to allow exploitation of the surrounding environment, perhaps for a simple life of foraging and seeking natural shelters from the cold and storms. Other thinking skills, tied to specific brain regions – as are all known mental skills and memory capabilities, develop to allow for highly abstract reasoning skills related perhaps to advanced hunting or farming techniques, the working of stone or metal, or the more abstract mental skills making possible mathematics and literature and the organization of bowling leagues.

None of this comes together by necessary development. Once again, the development of even those human talents and skills we think to be inherently ours occurred in streams of particular and contingent events. The current evidence of the development of civilizations indicates that man did not jump in one step from the practical skills of making stone axes and arrowheads to building pyramids. Nor did he progress in the organized and pre-planned way somewhat possible to corporations or universities or governments which have large populations of scientists, engineers, and machinists in well-equipped laboratories. Most progress was by way of trial-and-error and our current technological problems, and the many social and moral problems that have come even from technological successes, should tell us that the situation has not really changed. We are pretending to plan progress but we are playing with dangerous toys and risking the destruction of modern civilizations. There are various ways in which we threaten to create or spread new diseases or new cancers by genetic manipulation but I'll speak here about the damage we are doing to our moral structures.

We are making great progress in our morality though it is odd that what we call 'progress' is always in the direction of concentrating power, and money as a secondary matter, under the control of corporations, governments, and their good servants – including scientists and medical doctors. As I noted in *World*, scientists have been just as willing as lawyers and MBAs to work for the most evil of causes just so long as they are well-paid. To be sure, scientists also require that their favorite research projects are adequately funded before they go to work making weapons or new diseases or developing ways to turn the human body into raw materiel for the use of others. Yet, various scientists, ignoring the actual history of modern science, make claims that science is an inherently moral field of study and its

practitioners clearly the most moral creatures the earth has yet seen. Scientists are honest to the extent that the technical procedures of their fields enforce verification, but there are few cases indeed where any scientist has refused to develop even the most horrible of weapons or the most dangerous of civilian technologies. Throw some gold coins in the sty and scientists and medical doctors will put their snouts down and root for those coins along with the most greedy of oil executives.

As Hannah Arendt told us in her histories of modern totalitarianism, including colonialism, Nazism, and Stalinism, it has been nice, middle-class human beings who have actually executed the schemes of Cecil Rhodes, Adolf Hitler, and Josef Stalin. Nice human beings are often bereft of moral integrity and they have an odd ability to shut off their minds when convenient. It is our modern forms of political and economic organization which systematically turn us into such pitiful creatures that we might move more compliantly about the marketplaces. For all my disagreements with Adam Smith's overall stance on human communities, he was an insightful man and he feared very early in the development of modern industrial capitalism that human beings adapted to marketplace life might be just that way – bereft of a deeper and tougher moral integrity, a true moral integrity. Liberal democracy and liberal capitalism reached a peak of sorts in the 20th century when it became crystal clear that the vast majority of human beings in the West were willing to pretend they had no moral responsibility for even the worst crimes of their governments or their corporations. This shedding of moral responsibility, a sham that has no effect on God's knowledge of us, is necessary for the functioning of our fascist societies, our governments and our corporations, necessary for the functioning of all our artificial hierarchies of authority. Moreover, our willful and self-righteous blindness which covers our lack of tougher moral fiber, is necessary to maintain our delusions about our own goodness.

And, yet, we and our ancestors didn't become such creatures on purpose. Step by step, we simply made decisions to make our lives easier and more prosperous, allowing ourselves to become dependent upon the central governments and commercial corporations of this world. We're not dependent upon our churches nor our families nor our local political communities. Our dependencies draw our hearts and also shape us, but that's a story for another book. For now it's more important to realize that our moral gutting of our own selves can be described in terms of Adam Smith's 'invisible hand'.

A few years back, I saw a television documentary about the Egyptian pyramids. Some people think they were designed and some even imagine the ancient Egyptians were mathematical mystics because its not that hard to find the likes of the golden ratio in the various proportions of the surviving pyramids. But ‘surviving’ is the key word. It seems that the proportions of the standing pyramids are what they are by coincidence from a human viewpoint. The builders learned by trial and error, and at the cost of more than a few crushed workers, that more extreme proportions lead to collapses. Flying buttresses were also an ad-hoc addition to Medieval castles and cathedrals when some of the outer structures began to fall off the main building. Yet, after the fact, those flying buttresses seem like noble and preplanned parts of those great structures.

We’ve learned to anticipate certain types of problems with very sophisticated design techniques, but we’ve not learned to foresee new problems nor have we learned how to so much as build a bridge without destroying major human habitats. It was known in the early 1960s, before the urban renewal programs had even gotten into full swing, that such programs destroyed impoverished but human-centered neighborhoods. In place of those impoverished neighborhoods grew instant slums.

One might have thought that supposedly rational and compassionate politicians, bureaucrats, civil engineers, and social-workers would have immediately tried to change the programs to instead help existing neighborhoods to survive and overcome their problems. But there was a lot of support for the big budget urban renewal programs. Bulldoze half of Harlem so that we could replace brownstone slums with 25-story concrete slums. Steel-workers and construction engineers, social-workers and other government employees, politicians needing to buy votes in a way that didn’t lead to jail, all had quickly become dependent upon the programs. To complete the story, those slums became home to a variety of drug-dealers, weapons-dealers, muggers, and other sorts of violent criminals. In retrospect, the United States could be seen as a kinder, gentler Soviet Union by at least the 1960s. Technology was being used in the service of the central powers and to provide good environments for the criminally inclined.

We have an out-of-control system and the same sorts of people who claim moral superiority have given us many blessings:

- Nuclear weapons and anthrax aerosols;

- Highway systems which have destroyed many of our best human habitats in cities and small towns and farmlands;
- Factories which require dumbled-down and slave-like workers; and
- School systems which prevent proper development of the human mind and which nurture slavish habits of thought and behavior.

All of this has been at least partly the result of well-intentioned human beings experimenting with our basic moral and social structures the way that the ancient Egyptians played with piles of stone to eventually find out how to build piles that didn't fall down on the masons and laborers. Unlike those ancient Egyptian builders, we haven't learned the appropriate lessons, mostly because such a learning process would require central powers to start shedding their powers and would also require local institutions to re-develop. Human moral and social systems can't be designed; they must develop over time. And such a proper developmental process requires less greed and also more humility than 20th century man possessed. It's likely 21st century man will do better only because better will be necessary to prevent a return to relatively impoverished barbarism.

We shouldn't hold our breath waiting for the lessening of greed and the increase of humility. Now scientists, empirical investigators in general, are benefiting from those concentrations of power – especially the existence of a speculative and liquid economy – and they aren't about to voluntarily return to their make-shift laboratories and home-offices any more than the rest of us are about to voluntarily return to the farms and the small-town crafts shops. Nor is it necessary we should have to return to such simple ways of working, except that we've shown no willingness to respond properly to the world as we've discovered it – not quite the world our grandparents had thought it to be. Under those circumstances, a retreat to lesser levels of prosperity and civilization will likely be necessary before we can start advancing again.

For now, my concern is with understanding the world and not with the secondary process of responding properly to that world in practical ways. We shouldn't underestimate the distorting effect of these selfish interests on the speculative bodies of knowledge which try to make sense of our modern, empirical knowledge. There is no discipline of verifiability which would bring the moral beliefs of scientists, or anyone else, under control. And so...

We have a lot of collapsed structures in our societies and much of that's due to pigheaded and overly-proud scientists and engineers and politicians who can't admit they aren't smart enough to do what they promise they can do and no one else could do it either because much of what we try to do in the modern world is irrational and impossible. Quite unlike those ancient Egyptians, we are refusing to learn from our disasters, partly because those disasters have led to a situation where wealth and power are concentrated in the hands of men whose major qualification is their lack of moral integrity and their consequent willingness to serve the various gods of the marketplaces. Adam Smith observed a Christian society organizing efficient and reasonably moral marketplaces without anyone explicitly planning those organizing efforts, but the so-called 'invisible hand' can organize evil institutions when it works through thoughtless men with little moral integrity. Such evil institutions will be stable only in the way of cancers. They feed off healthier communal structures, draining and killing those healthier structures. Cancers die with their victims but that's a little late to help those victims.

The world is a story. Knowledge of complex things and complex systems isn't out there to be excavated and then fed into a computer to design better systems. While there is basic knowledge about the nature of the stuff of this universe and basic knowledge about the relationships between things, the more important forms of knowledge about things concerns their participation in stories, including the large story that is this world, this phase of God's Creation. There is a still larger story which would include the world of the resurrected and perhaps other phases of Creation, but this chapter covers certain types of knowledge of this world, scientific empirical knowledge.

As the story progresses, much knowledge is becoming irrelevant and some is likely even disappearing. Human communities, with their complex moral and social structures, are also no more than snapshots of stories. Only hubris, mind and soul destroying pride, can lead some people to believe they can fully understand human communities, or galaxies, by studying snapshots. A still greater hubris has led many to believe they can beneficially reshape human communities, by way of bulldozer and concrete mixer or by way of profitable new technologies. We should shudder in anticipation of the results now that these people, scientists and engineers, corporate executives and U.S. Senators, have gained some power over genetic material. We should shudder at the possibility that physicists will come to under-

stand gravity because corporations and governments will rush to exploit that knowledge even in the form of weapons. One day a psychotic terrorist might set off a gravity bomb that will implode the entire solar system into a black hole. That psychotic terrorist might well be a nice American sitting in the Oval Office.

After all, remember that Leonid Brzezinski has bragged that he and his superior – Jimmy Carter – trained those killers in Al Qaeda and amongst the ruthless warlords of northern Afghanistan that we labeled as ‘freedom-fighters’. We trained them to infiltrate civilian areas and kill innocent people in order to bring down that evil regime in Soviet Russia. I’ll leave it to the reader to deal with the moral insanity and moral inanity in that statement by a well-known Columbia professor and Presidential Adviser. Not all knowledge is true knowledge even when it is based upon verifiable facts.¹

The moral issues are most important, especially with American antinomianism on the rise. We justify our criminal wars and we are proud of our greed. Our motives and our fuzzy feelings of righteousness are irrelevant unless they match up with the reality of our actions seen in their context. We should have learned this from the mis-match between our appetites and our nutritional needs which has developed as our wealth has allowed us to exploit each other by appealing to those appetites in ways that lead to moral and physical diseases.

4.5 A Fresh Start

We need to nurture healthy minds and souls in our bodies that we can learn from the universe and then speculate properly to make sense of what we have learned. We need to have faith that it all makes sense and that our lives can make sense. And we need to try to find the ways in which our lives can make sense.

This will require us to see the universe in our environments and that requires us to see those environments as more than exploitable and controllable regions. We must re-learn how to know, how to truly know, to make

¹It’s more likely, when we know the entire story, that Michael Scheuer, the retired CIA agent, is right that they didn’t need our training and direction but only our money and weapons. That doesn’t change the ugly story of the moral decay of our country in having leaders that would even deal with such men.

sense of the universe by seeing it as such. But such a program is in radical opposition to the directions in which we travel in our empirical investigations, our political and economic activities, our crippled imaginative efforts, and even our man-centered forms of worship and prayer.

5 Practical Knowledge

5.1 Overview

I admit my partitioning of knowledge is a bit artificial. I might upset those who think that science is a new way of thinking or that abstract thought is somehow pure and apart from physical constraints. Against those ways of viewing human thought, I proposed in *World*, and I still advocate, that the human mind develops as the human brain develops in response to its physical environments – including its own liver and legs and hands. Before complex human civilizations grew up, the minds of human beings developed largely in response to needs to hunt and forage though archaeological evidence indicates that man was painting on cave walls and carving fertility figures and burying his dead nearly 100,000 years ago. That was a time when it's uncertain if those human beings were even members of the same species that we modern human beings belong to, but I would argue they would have seemed a different species because their environments would not have encouraged the development of abstract thinking abilities.

While it is now generally believed that ontogeny doesn't recapitulate phylogeny, there are logical reasons why they would be similar. That is, the development of a fertilized human egg-cell into a human being with all her organs will be similar in some ways to the paths by which human beings evolved from single cell organisms in the earth's primeval oceans. There are similar things to be said for the development of higher mental skills. The final development of higher-level abstract reasoning seems to occur during adolescence and seems to largely end at sexual maturity. That raises the likelihood that human beings who grow up in a society encouraging early sexual maturing will not develop all those higher-level abstract reasoning abilities, and that has great consequences for our complex society which relies upon higher skills of literacy and upon the ability to, for example,

generalize from exposure to the moral and social habits of different human societies. The low quality of American literacy and the low level of American abstract reasoning skills may largely explain the strange sort of tolerance we have for other human beings – we think they are really aspiring to be just like us. People who cannot reason abstractly will not easily conceive of the possibility that other people do not aspire to such heights. I will not go into those problems in this book and will confine my discussion to the general situation.

Before our apish ancestors could realize that marks on a rock could correspond to the number of enemies in the territory ahead or the days of journey to the next camp, they had to develop the general capacity to abstract from particular examples. The example I gave in *World* is a child seeing only normal, wolf-like dogs – such as German shepherds and Labrador retrievers – and somehow managing to recognize a dachshund as a dog. A dog can recognize a strange beast as another dog because of smell. We human beings may well have lost much of our sensory acuity just because it was an expensive superfluity after we developed abstract reasoning abilities. This is not to say that evolutionary pressures directly purge us of unnecessary skills or organs, but rather to say that evolutionary pressures work always to maintain or change a species and there is a cost to be paid for keeping organs and skills. Maintenance is necessary to keep a species healthy and viable just as maintenance is necessary to keep human factories or computer systems healthy and viable.

A child is, in a sense, a complex system which must be developed and maintained. This is a dangerous analogy, to be sure, but useful at times. My reason for considering it a dangerous analogy is different from what some might expect: in order to become a true person in the Christian sense, a human being has to be unified. We endanger the process of becoming a true person, an imitator of Christ if we begin to think of ourselves as beings made of components: body and mind and soul and whatever else. And yet it is necessary for us to sometimes engage in talk as if we have something called a ‘mind’ or a ‘soul’ which must be developed separately from our biological development. After all, we do have mind-like and soul-like attributes though not mental or soulish substances attached to our bodies. The developments of our overlapping mental, moral, and spiritual aspects are fascinating and complex processes, and it is well-worth studying these processes as if they were really separate from the human being as a whole.

Children, up to their late teens, cannot reason abstractly with moral

principles as just one example. This is despite the early development of their ability to set up abstract categories with respect to things. The ability to abstract from particular relationships to abstract categories of relationships occurs with approaching adulthood. I could even conjecture that it's mostly by way of social interaction of the proper sort that we develop the reasoning skills – during a crucial period in adolescence – to handle the moral abstractions which make it possible to live peacefully with people of other cultures without trivializing them into middle-class Americans who like to dress funny on those ethnic holidays. The very loss of moral reasoning skills, even amongst many moral philosophers and moral theologians so far as I can tell, is a sign of our social and cultural deterioration, which is of a piece of a similar deterioration in our individual beings – most certainly including our minds. We live in marketplaces rather than morally well-structured human communities and that choice of ours is beginning to show as we descend into barbarism of a rather unhealthy and unattractive sort.

As I discussed in *World*, Adam Smith, when formulating his economic theories, was observing a society which was imperfectly but substantially ordered to moral teachings of Christianity as interpreted by the Scottish Presbyterian church. There was a substantial amount of hypocrisy and those Scots tended to suppress sinful desires rather than to try to heal sinful nature – inspiring Robert Louis Stevenson to write *The Strange Case of Dr. Jekyll and Mr. Hyde* a century later, but it was a substantially well-ordered human society in terms of public honesty, attitudes towards useful work, and other character attributes which can make for a successful free-enterprise society with minimal need for government regulation. We know from the ensuing conquest of the so-called Third-world, by way of missionaries and colonial rulers, that even the morally well-ordered peoples of Europe were seemingly incapable of understanding alien societies. Some of the early Jesuit missionaries had entered alien societies, studying them from the inside, before proselytizing Chinese or Amerinds or anyone else, but they weren't typical missionaries. Without a deep understanding of those alien peoples, even the most noble of missionaries could destroy cultures and individual human beings as effectively as the most vicious of deliberate exploiters.

We modern people have become more tolerant than many of our missionary ancestors, in a superficial way, but we don't understand or appreciate alien societies or anything else which falls outside of the range of possibilities

given by modern liberalism which, by ideal definition, allows only societies which are composed of individuals with no intermediary institutions. The reality in this year 2008 [second edition – 2010] is frighteningly close to the ideal, perhaps as close as could be achieved by human means. Modern liberalism is also a particular historical product, an effort of well-intentioned but misguided thinkers – beginning with Hobbes and continuing through Locke and Jefferson – to eliminate conflict in societies which they saw as coming from local loyalties and from belief in absolute truths.¹

Alien human beings, those not part of this Western mindset, are regarded as children who dress funny and sing interesting songs; beings who really, in their heart of hearts, aspire to be members of the modern, liberal middle-class. We have lost our parochial understanding of our own moral and social orders without gaining any sort of ability to achieve an abstract understanding of the moral and social order of other peoples. In fact, given our natures as concrete beings of an apish sort, it's hard to imagine how we could develop in our own minds the abstract reasoning abilities that would allow us to understand other peoples if we don't even understand our own concrete societies. And we don't understand them, largely because Western societies are complex in a way beyond the understanding of human beings who are illiterate or human beings who are literate in a low-quality way. Even more importantly, we live in the virtual worlds of our television screens and hand-held mind-sucking devices rather than living in a concrete world of, say, a small-town in the Chicopee River Valley in Massachusetts.

In any case, having lost our understanding of our own order, we've largely lost the order itself in our efforts to perfect or to exploit what we don't understand. We've lost that order by way of our various irresponsible actions or inactions in politics and business and culture and we never even saw that danger because Christians and modern liberals alike insist on seeing men as well-formed agents, bundles of desires who possess some magical attribute called free-will.

In fact, man comes into this world as a hunk of clay with fairly well-defined possibilities. That hunk of clay is also limited in many ways. It cannot be shaped into the smooth, regular shapes necessary for corporate capitalism and liberal democracy to succeed for long. It cannot be shaped

¹I perhaps misunderstand Jefferson in this statement because, in 2010, it now seems to me that Jefferson was less a Lockean political philosopher and more a Virginia planter tied to his native soil and community.

into an electronic computer. It loses its pliability over time and thus largely keeps the shape it acquires in its early childhood. It can be shaped into a being suited for life in small groups as a hunter and forager. It can be shaped for life in small groups as a craftsman or scribe. To some extent, it can be shaped for life in larger, cosmopolitan societies, but it seems to resist that. That resistance shows itself in various psychological, social, and political problems. But that is a major subject in itself and beyond the scope of this book.

Human beings are primarily story-tellers when it comes to practical reasoning, including those forms of reasoning which deal with most moral aspects of our lives. Most human beings do most of their reasoning about abstract matters as well through stories. Telling a tale about the world does not seem so sophisticated as developing a metaphysical view of our relationship to God or a mathematical view of the elements of physical reality, but it is the foundation of those other types of abstract reasoning and it still plays the primary role in trying to understand the universe. In fact, that primary role of narratives has been reinforced by the discovery that things develop over time rather than being created in the form we know them.

The Egyptians and other ancient peoples were building massive structures before they had the abstract mathematical skills or the understanding of materials that would have allowed them to explicitly design them. Those pyramids were built by trial-and-error procedures in which each construction project was a story allowing knowledge to be passed on through master-apprenticeship relationships. Nearly all human practical work was like that until the development of so-called rational bureaucratic techniques for organizing our societies, techniques based on slavery and murder and torture in the cases of Maoist China and Soviet Russia, techniques relying on bribes in the case of that kinder, gentler fascist state we call the United States. I'm not talking about bribes from corporate executives to politicians but rather the bribes which entice parents to place their children at the mercy of the modern educational and entertainment industries and the bribes which draw people out of their families and local communities.

As we have tried to create abstractions from practical empirical knowledge, the main result has been the destruction of practical knowledge of any sort not convenient to the rulers of centers of political and economic power in the modern West. This has resulted in the loss of that eminently practical knowledge of how to live in the way of a Christian. In that sense,

only the Amish and cloistered monks are Christian nowadays. The rest of us lead fragmented lives but the true centers of our lives as biological creatures needing to eat, be fed and clothed, and so forth, are in the public squares, not in our families or other local communities. Our hearts are oriented by our relationships of dependency, and we do not have the higher-level mental skills necessary to even see the ways in which we've been trapped into loyalty to the gods of the marketplaces.

Most of our moral and social knowledge is embedded in our practical bodies of knowledge. We're morally well-ordered shop-keepers or attorneys or machinists or homemakers or we're not morally well-ordered at all. We are Christian shop-keepers or attorneys or machinists or homemakers or we're not Christian at all. In fact, we have ceded our moral responsibility and our very souls to corporations and central governments. And we should remember that those corporations and central governments have now the power to re-define what is a moral truth, what is moral behavior, what is marriage or family life. We have played with fire by ceding control over our lives to these corporations and central governments, thinking we would obtain comfort and security from our cowardly acts of surrender, and we have ended by dismantling much in our societies which took centuries to build.

We have no practical knowledge and we're not morally well-ordered. Moreover, we are not Christians, that is, human beings whose lives are focused upon the true Life shown to us by the Incarnate Son of God.

5.2 The Morality of Doing

We've traded our true skills in making livings and making communities in return for what seems a more comfortable and more secure life in a fascist society, that is, a society in which political power is concentrated in the bloated central cities and economic power is vested in large corporations and government regulatory bodies. Our hierarchies of authority are artificial and imposed from above. Far above.

Rather than making livings, we're given the livings appropriate to cogs in the massive machinery of central governments and large corporations. This is true even if we're small businessmen, running perhaps a small-town construction or realty company. The central governments as well as the large corporations which serve them so well have reshaped the modern

world to their needs. And we've been the willing tools of these centers of power and wealth. We've built highway systems so people could commute out of their hometowns and towards large employment centers and so they could also travel to the malls and outlet centers and such. We've upped the pace of life, requiring heavy use of environmentally dangerous climate control systems even during the winter in the southern states and during the summer in New England. We've turned our homes into way-stations that parents and children check into on their way to industrialized schools or fast-food restaurants or child-care centers or monstrous factories or equally monstrous shopping centers. Moral decision-making responsibility is ceded to institutions, government or corporation.

We cannot be moral creatures if we have work which is so highly specialized that we are just processing certain pieces of paper in certain ways, or pretending we can teach history separate from theological and moral assumptions (a pretense that always leads to atheism under another name), or programming the computers that run chemical plants producing inflammatory agents intended for criminal military use. We become what we do because we're creatures who shape our minds and souls by interactions with the world around us. If we live our lives in Pilate's marketplaces, then we shape ourselves as little Pontius Pilates and soon wonder, "What is truth?". If we live our lives serving a murderous bureaucracy, then we become no more than cowardly sorts of murderers – perhaps squeamish but certainly not compassionate in any meaningful sense.

If we are to be God-loving and God-centered human beings, we must learn how to work in the presence of God. For a Christian, it is a matter of the utmost importance that our practical lives, that is – our work and our politics and our education, be organized so that we can move towards a state of Christian person-hood, a state in which we are unified and coherent and complete in our beings in imitation of our Lord Jesus Christ.

Because of this, no Christian should pretend that any true or sustainable practice, not even plumbing, can be independent of our moral, Christ-centered lives. We can't work as plumbers in factories producing immoral products nor can we work in school systems which strip children of their beliefs and stunt their minds and souls nor can we pretend that murderous war-criminals like Winston Churchill and Franklin Delano Roosevelt were great men by Christian standards, without endangering our chances to enter the Body of Christ. Why should we wish to enter this Body of Christ? Primarily: we owe to our Creator what He asks of us. In addition, it's the

only way we have of achieving life without end as a companion to Father, Son, and Holy Spirit. It's the only way we can become human persons who can even tolerate Heaven. Other sorts of human beings would consider Heaven to be Hell.

Practical knowledge is not merely technical knowledge of how to manipulate iron ore or farming soil or cows or human beings so as to maximize profits. It is knowledge of how to use the things and processes of this world to make a Christian human life which is unified, coherent, and complete across all of our activities – worshiping and playing as well as working for a living.

Yes, this is an unreachable goal, but it should be our goal even at the cost of wealth or power, even if we have to give up participating in politics or mainstream business. There's much that all Christians can learn from the Amish.

6 Confusing Realms of Human Knowledge

6.1 Overview

Ultimately, knowledge is unified. All that necessarily is is God and all creatures are images of God or – still better – objectified thoughts of God. The Holy Trinity is the source and foundation of all truths as well as all facts. Where else could truths and facts come from but the all-powerful and all-knowing God? To hold a lesser view of God is to be already on the path to Deism or some other form of non-Christian theism or perhaps some form of paganism.

But human beings are creatures who see the effects of God and not God directly nor even the acts-of-being of God directly. If we think in terms of a human building, knowledge of the true God – Father, Son, and Holy Spirit – is the foundation. Practical empirical knowledge is the brick or the studs and siding and how they're assembled. Scientific empirical knowledge is the study of the environment in which the house sits, the raw materials used to make the components of the house, and also the properties of the components as assembled for use in building the house. Speculative knowledge is the various mortars and nails and glues which hold siding to studs, sills to foundation, clear panes of glass in the window casements. From the human viewpoint, it is speculative knowledge that seems to hold it all together. Speculative knowledge, being mortar and glue, even holds itself together – or else fails to cohere.

Like all analogies, that of human knowledge to a building of man is limited and can lead to all sorts of silliness if taken literally, but there are hints of our creaturely situation in that analogy. One major problem is the way that revealed knowledge is seen as just part of the building, albeit

the foundation. This cannot be said often enough or strongly enough: if the God of Jesus Christ exists, He is neither a conclusion drawn from more basic truths nor is He just a particular, transcendent part of what exists. He is the source of all truths and all that exists. He is the source of the law of non-contradiction (“a well-formed statement cannot be both true and false at the same time”) and of the truth that “ $1 + 1 = 2$ ”. These logical and mathematical truths and the truths which are physical things and relationships all have their source in the God who is Father and Son and Holy Spirit in one Act-of-being.

All knowledge, all facts and theories, are one for they all come from God. We creatures cannot perceive this situation directly but only by contemplations upon God’s revelation of His own Triunity and of our relationship to Him. This is not a matter for worry. God has created a world where we can become the sorts of creatures who can share in the life of Father, Son, and Holy Spirit. This World is the physical universe as seen through a moral ordering process given to us, to a great extent, through revelation. We are expected to complete that moral ordering process on our own, holding to the basic duty to acknowledge God as our Creator and all that is entailed by that, holding to the revelation that Jesus is also our Lord in the flesh and all that is entailed by that.

This World, including that revelation, is a manifestation of thoughts that God wishes us to have, though it was not created for only that purpose. As I argued in *World*, our brains, hence our minds, are shaped by interacting with that World. Our minds are encapsulations of that World which is the story God is telling. Or else our minds are ill-formed, at least in the sense of immaturity and perhaps in the sense of perversity.

Our minds are not containers holding knowledge. Our minds, and the shape of the underlying brains, cannot be distinguished from the knowledge they hold. Someone who holds the Nicene Creed in their mind, who has allowed those expressed beliefs to shape her mind, has made that Creed and her mind one. She has dedicated herself to the God of Jesus Christ and has, at the best, come to see the Holy Trinity, Father and Son and Holy Spirit as one Supreme Act-of-Being, as the most basic of all truths, as the source of all truths. All knowledge is in God, even when He chooses to manifest it in one or another phase of Creation. All knowledge is ultimately part of the unity which is He who is His own Act-of-being.

For a Christian, believing in the unity of knowledge is easy, at least in principle, though it’s hard for a creature to see that all that seems so solid

is made of that which is not. Only God, Whom we see in an indirect way truly exists; that is, we see God through His effects in Creation and through the human nature of His Son. Still, one can admit in a formal way that all knowledge is one just because God is one, and an active life of worship, including private prayer, can help a human being to make that insight part of her very own mind. The hard part is reconciling this insight with the fact that knowledge is fragmented to direct human perception and to direct human thinking.

Why do we know in a fragmented way if knowledge is unified?

First of all, we're apes, though unique apes for sure. We come forth from our mother's wombs as creatures with large but very undeveloped brains. We are still in a fairly early embryonic stage at birth. We are not able to rise and run rapidly within an hour or two of birth as is true of horses and many other creatures. We do not develop into strong and well-coordinated creatures in a matter of weeks or months as is true of other apes. Being born in such an embryonic state, our brains are not pre-formed for specific ways of life, specific ways of knowing a small range of different environments. Nor do we have the powerful sensory organs or the strength and teeth of wolves or bears or other animals which are good opportunists, just as we are.

We are born as wrinkled, purplish bundles of potentiality.

We do not know how to conduct our lives at birth as do so many other animals. We learn and usually we learn by processes of trial-and-error. This leaves us with provisional knowledge and it leaves us in a position where we have to construct that house of knowledge which I earlier used as an analogy.

We are like the blind men with the elephant. We feel about and necessarily come into contact with only small parts of the total beast, with only very tiny parts of God's world. We feel the tail and decide the elephant is like a rope, we feel the legs and decide the elephant is like a tree-trunk.

The greatest of poets or philosophers have done little better than the humblest of us. All of us try to piece together an image of the universe, struggling to use our own developing moral natures to see order in that universe, turning it into something of a world. That world we see will be only a distorted and fuzzy image of the world which truly is, the world which is the story God is telling. We calculate the orbit of planets with extraordinary accuracy and decide the world is a mathematical construction. We appreciate the simple comforts of our American homes and decide the

world is a suburb, safe and secure against the dangers which come to us as rumors. We ascend to the top of a large human organization and decide the world is a place made for the satisfaction of our desires and ambitions.

We're no more competent than those blind men but we can avoid their errors. We can seek knowledge from multiple vantage points within God's world and we can try to learn from the knowledge of God's world – however provisional – which others have acquired.

6.2 Absolutizing the Provisional

Our knowledge of God is always provisional in certain ways, even that part which is revealed by the Almighty. God speaks only truth, necessarily so since what He speaks comes into being. This is why things are true, as Aquinas claimed. But God is God and we are not the sorts of entities which can readily hear and understand even the clearest revelation from God. I'm not speaking here about distortions in our hearing and our understanding caused by our prideful desire to transcend our creaturely status nor am I speaking about our sinful lack of gratitude to our Maker. As God made us, we do not easily hear and understand that which does not correspond directly to the context of our environments and our creaturely needs and desires.

The God of Jesus Christ, the only God who exists and the only one who could exist, created a world in which He manifested certain of His thoughts which were to be part of a story He would tell. Human beings evolved from an apish creature which is also the ancestor of the chimpanzee. We human beings are apes and have brains which are made of the stuff of this world, the world which is a story God is telling. Our human brains operate according to the laws and principles which regulate the behavior of matter and energy and fields. Let me make this more clear:

Every operation of the human brain is subject to the laws and principles which correspond to the thoughts which God manifested in this world. Each and every thought we have, true or perverse, draws upon those thoughts of God. Each and every simple and basic truth we know is supplied to us by our Creator by way of His manifested thoughts which show up in the

interactions of hydrogen and carbon as well as in the abstract truths of mathematics.

We have no transcendental parts and no direct access to any hypothetical realm of absolute truths. What we know comes from God, by way of the things of His Creation or by way of His more direct revelations. We know that “ $1 + 1 = 2$ ” because it is built into this world, though it might be better to think of such truths as part of the Primordial Universe from which this universe was shaped. We have no reason to believe it is a truth independent of God’s specific acts-of-being which are Creation. Certainly, we cannot access that truth independent of the stuff around us and the stuff which is us. The most abstract of truths, even those of transfinite set theory, come to us through mere things, including that complex thing which is the human brain. The most abstract of truths known to men, or knowable in principle, must be part of what I called the Primordial Universe, the raw metaphysical stuff from which this World has been shaped. Else how could we access those truths?

It seems remarkable to me that theologians, philosophers, scientists, and many in practical professions as well make the mistake of assuming that a physical creature whose mind is shaped by a particular empirical reality has some sort of magical access to a realm of absolute truth. There is a more sophisticated analysis which has not yet been performed – though some mathematicians are headed in that direction – that will try to determine the nature of the truths which we derive from the workings of our own brains or from the workings of the universe in which we live. In saying this, I most certainly do not intend to even imply that our minds can think only the thoughts manifested in this Universe, but I do mean to say that our minds can think only the thoughts which are manifested in the raw or abstract stuff from which this Universe has been shaped. From particular manifestations, thing-like manifestations, we can work back to the more abstract or more general stuff of Creation.

It’s important for Christian theologians to recover a sense of the primacy of our Creator, His existence and His acts-of-being. If the Holy Trinity’s very existence is dependent upon other, supposedly more fundamental truths, then He is, at most, a pagan God dependent upon truths or even a universe which is somewhat independent of Him. He would be only a King and not a Creator, source of all being – including His own.

But, I emphasize, our loss of the sense of God's absolute primacy first came about as Christian theologians and philosophers, even spiritual writers, absolutized empirically-given truths which they were analyzing in their effort to support Christian beliefs. That is, they raised provisional truths, time-bound views of of God's own state of being the status of absolutely reliable statements of transcendental being. We pretend humans can hear God's Word in such a way as to gain an absolutely reliable understanding. We pretend God's own being is subject to human analysis.

6.3 Confusion Reigns

We now have philosophers who tend to believe they are no more than physical creatures but somehow they have brains which access regions which transcend physical reality. We also have theologians who think the self-revealing God of Jesus Christ can be proven to exist and physicists who forget that a mathematical equation doesn't endow concrete existence. Ordinary people have more common-sense than those head-in-the-sky types. Don't they? Well, unfortunately, we have a large population of human beings who worship a God who is happy to be the center of their lives for the hour a week that we take off from our duties as citizens of the marketplaces. A God who exists for only an hour each Sunday doesn't really exist at all. We are atheists to a frightening extent.

We have dismantled a magnificent culture with at least some moral structure acceptable to Biblical Christians. We allow exploiters to turn our children and grandchildren into aggressive consumers who keep alive the corporate marketplaces because it is the gods of those marketplaces who have given us so many goods, so many comforts, so many promises of security. A major theme in my work is the idea that this moral corruption we've so gleefully accepted is deeply connected with our failure to see that empirical knowledge gained from God's Creation should have priority over human speculations, even those speculations which once gave our ancestors the best possible understanding of Creation and its Lord. And, yet, it is a still more important theme that any such empirical knowledge must be understood within the context of God's revelations.

7 Some Moral Aspects of Knowledge

7.1 Summary of My Position So Far

The following are some of my more important claims about the nature of human knowledge:

- Things are true.
- Truths are thing-like, or fact-like if you prefer.
- Human beings know through the things which make impressions upon our physical sense organs.
- Specifically, we know even God only through His effects in this world, though those effects might carry direct revelations.
- Much of our knowledge has a narrative form since we are creatures living in a world which is a narrative happening 'in' our universe.

But what does this all mean? Can we really know enough to create a human version of God's story? Even if we do live in a story being told by God, how can we know anything with certainty?

While striving for a radical openmindedness towards empirical knowledge, I hold always to the revealed truths of Christianity. But, and this is a big 'but', we have to be careful not to mistake for revealed truths the speculative conclusions of Christian or pagan thinkers. An example I use often is the Original Sin interpretation of the story of Adam and Eve. Original sin isn't a direct revelation nor even a primary insight from Biblical sources. It was a secondary insight derived through the speculative efforts of Christian

Fathers, capped by the work of that greatest of all early theologians – St. Augustine of Hippo whose primary insight was: we do not sin, we are sin. That is, we’re in a radical state of disorder. From this basic insight, it’s not too hard to understand the story of Adam and Eve in a way that doesn’t engender conflicts with empirical knowledge of the evolution of man. In fact, the most basic interpretation of my claim would seem to be:

A state of nature becomes a state of sin with moral self-awareness and also the awareness that we have a Creator.

7.2 Authority and Claims to Authority

“Render unto Caesar what is Caesar’s and unto God what is God’s.”

Was Jesus granting some sort of absolute and free-standing independence to political systems? The authority of legitimate political, social, and economic leaders is for real but is granted that they might serve God and all that God has put under their stewardship. Religious leaders, including the Pope, are in pretty much the same situation. Unfortunately, there’s no easy way to be sure, in most cases, if those leaders are in a substantial violation of their stewardship responsibilities. There’s rarely a way to force a turnover in government that will improve the situation – revolutions draw both violent idealists and violent opportunists, but violent men in any case. Bad governments are best overturned by the weight of their own crimes and errors or perhaps by the peaceful non-cooperation of those under their rule.

Principalities and powers have legitimate authority, subordinated to the purposes of God as is true of the authority of parents and priests and ministers, but that authority is often used for the benefit of the stewards rather than the benefit of who and what they are supposed to be guarding and nurturing. We need some trustworthy human beings to gather information to evaluate those principalities and powers if we are to evaluate the decisions of our leaders and to understand our own world. This would require those trustworthy souls to become knowledgeable about history and current events, climate history and atmospheric chemistry, industrial techniques and criminology, just to help us carry out our duties as citizens.

Clergymen and other Christian leaders clearly have the responsibility of helping us to deal with certain aspects of the expansion of empirical knowledge in the Modern Age. For example, the American Catholic Church

has joined with mainstream Protestant groups and secular groups of various types to oppose the teaching of so-called Creation Science in public schools, but bishops and priests stand at the pulpit and talk as if the story of Adam and Eve were literally true and as if the obvious and only meaning is that of a Fall into a state of original sin. They have enough sense to either avoid speaking about the first few verses of Genesis or to speak of those verses as being some sort of allegory. Most Catholic and Protestant clergymen would hear a literalistic homily or sermon on the creation of the world in seven days as some sort of silliness. Don't they realize that young men and women taught some more or less coherent version of evolutionary biology will hear those homilies on Adam and Eve as the same sort of silliness? It matters little that some of those sermons on Adam and Eve might be intended as commentary upon an allegory; that's not how they're heard by most modern human beings.

In any case, we have learned some hard lessons about the nature of earthly authority, including that which guides us in judging what is truly true and what is true only within the context of human empirical knowledge in its current state. It is this confusion that has, for example, allowed the American Catholic bishops and many other American Christian leaders, to cooperate with the dismantling of Christian culture to the advantage of the powers and principalities of this world. One good example, and I'll use it repetitively in my writings, is the support of such programs as Social Security, programs which have made all of us greatly dependent upon the principalities and powers of this world. Human love and loyalty tends strongly to accord with bonds of dependency. Christian leaders have taught their followers to love the powers of Earth rather than God. They have taught their followers to favor dependence upon politicians and bankers rather than upon parents and cousins and community leaders.¹

Those Christian leaders have encouraged countless members of their flocks to drift away to the paths worn by the wolves and all those who have already followed the wolves. They have taught even the remaining members of their flocks to become dependent upon the powers of this world, powers which serve the truth when they are properly constrained by our distrust of

¹Obviously, the situation needs to be expressed in more complex terms but not here. For example, I'm barely old enough to remember when there were true town fathers and when the local lawyers and bankers could be trusted to give good advice and moral service to those in their communities.

them, powers which compete with God for control of our minds and souls when we let ourselves become dependent upon those powers.

Modern empirical knowledge indicates strongly that those powers are not personal but rather the result of the very complex interactions of a social animal – man. There are also the natural forces, but we have clearly reached a halfway point where most Christians have, illogically, realized Satan doesn't push molten rock up the shafts of volcanoes but they still think he's responsible for the increase in our rates of violent crime. The more likely villains are Arnold Schwarzenegger and the producers of *Law and Order*, the corporate executives who make despicable decisions knowing they can hide behind limited-liability and the war-criminals who've lived in the White House. But we ordinary citizens are also guilty because we and our children couldn't be so readily exploited if we didn't allow it and if we didn't ourselves accept good jobs and benefits from the exploitive individuals and institutions.

We're not the victims of Satan in this destruction of Western Christian civilizations but rather the victims of our own greed and willful ignorance and the greed and willful ignorance of our ancestors for the past 4 or 5 centuries. We prefer the gods of the marketplaces to the God of Jesus Christ. We prefer the promises of career paths and social security programs to God's promises of salvation.

Neither we nor our leaders strive to better form our minds or to seek after the knowledge which would allow us to properly serve our God and our fellow human beings. We aren't even capable of protecting our children from their exploiters who would twist their minds and deform their souls to make them more enthusiastic participants in the modern marketplaces. We don't understand the modern world well enough to be able to teach our faith to our children. We don't understand it well enough to spread the Gospel to unbelievers. We don't understand it well enough to see the dangers to Christian life or the opportunities for enriching Christian life.

7.3 The Development of Human Knowledge

The world itself is the product of ten billion years of development or more, with perhaps many more years of development to go before the end arrives, whether it end with a bang or a whimper. The human mind is, at the species level, the product of more than three billion years of development, biological

evolution, on Earth. A particular human mind is the result of developments, largely spurred by interactions with the immediate environments, over the life of that particular human animal.

Human knowledge is also part of this developmental nature of our universe. This is true even of human knowledge regarding the revelations of God – as John Henry Newman and his successors have taught us. That modern god, Progress, is a false idol but it also points to this basic truth of this universe, this phase of God's Creation. This is a universe in which things develop, in which God grants freedom not as if we were autonomous well-formed agents from the start. Our freedom is that of influencing our own development or that of others. We also have some freedom to shape our immediate environments even to the level of the earth.

Our knowledge, our specific acts, and our states of being are all intertwined in ways that indicate they might well be ultimately one. And they all move through time. Whatever we may know about absolute beginnings and absolute endings, it is certainly true that our knowledge of the universe in which we are embedded develops over time. The universe itself develops over time, being enriched by the efforts of God and man, though we men can also do a bit of damage to ourselves, other creatures, and our environments. It would take a metaphysical discussion beyond the scope of this book to discuss the relationship between a developing universe and developing knowledge. I raised some of the important questions in *World*, particularly in my discussions of mathematical order and randomness. For now, I merely wish to advance a general view of the development of knowledge.

Colophon

This book was typeset using the LaTeX typesetting system created by Leslie Lamport and the memoir class written by Peter Wilson.

The LaTeX typesetting system is a set of macro commands using the TeX typesetting system written by Donald Knuth. The body text is set 10/12pt on a 33pc measure with

Computer Modern Roman designed by Donald Knuth. Other fonts include Sans, Smallcaps, Italic, Slanted and Typewriter, all from Knuth's Computer Modern family.

Attribution-Noncommercial-No Derivative Works (3.0 Unported)

Attribution-Noncommercial-No Derivative Works 3.0 Unported
<http://creativecommons.org/licenses/by-nc-nd/3.0/>

Attribution-NonCommercial-NoDerivs 3.0 Unported

CREATIVE COMMONS CORPORATION IS NOT A LAW FIRM AND DOES NOT PROVIDE LEGAL SERVICES. DISTRIBUTION OF THIS LICENSE DOES NOT CREATE AN ATTORNEY-CLIENT RELATIONSHIP. CREATIVE COMMONS PROVIDES THIS INFORMATION ON AN "AS-IS" BASIS. CREATIVE COMMONS MAKES NO WARRANTIES REGARDING THE INFORMATION PROVIDED, AND DISCLAIMS LIABILITY FOR DAMAGES RESULTING FROM ITS USE.

License

THE WORK (AS DEFINED BELOW) IS PROVIDED UNDER THE TERMS OF THIS CREATIVE COMMONS PUBLIC LICENSE ("CCPL" OR "LICENSE"). THE WORK IS PROTECTED BY COPYRIGHT AND/OR OTHER APPLICABLE LAW. ANY USE OF THE WORK OTHER THAN AS AUTHORIZED UNDER THIS LICENSE OR COPYRIGHT LAW IS PROHIBITED.

BY EXERCISING ANY RIGHTS TO THE WORK PROVIDED HERE, YOU ACCEPT AND AGREE TO BE BOUND BY THE TERMS OF THIS LICENSE. TO THE EXTENT THIS LICENSE MAY BE CONSIDERED TO BE A CONTRACT, THE LICENSOR GRANTS YOU THE RIGHTS CONTAINED HERE IN CONSIDERATION OF YOUR ACCEPTANCE OF SUCH TERMS AND CONDITIONS.

1. Definitions

1. "Adaptation" means a work based upon the Work, or upon the Work and other pre-existing works, such as a translation, adaptation, derivative work, arrangement of music or other alterations of a literary or artistic work, or phonogram or performance and includes cinematographic adaptations or any other form in which the Work may be recast, transformed, or adapted including in any form recognizably derived from the original, except that a work that

constitutes a Collection will not be considered an Adaptation for the purpose of this License. For the avoidance of doubt, where the Work is a musical work, performance or phonogram, the synchronization of the Work in timed-relation with a moving image ("synching") will be considered an Adaptation for the purpose of this License.

2. "Collection" means a collection of literary or artistic works, such as encyclopedias and anthologies, or performances, phonograms or broadcasts, or other works or subject matter other than works listed in Section 1(f) below, which, by reason of the selection and arrangement of their contents, constitute intellectual creations, in which the Work is included in its entirety in unmodified form along with one or more other contributions, each constituting separate and independent works in themselves, which together are assembled into a collective whole. A work that constitutes a Collection will not be considered an Adaptation (as defined above) for the purposes of this License.

3. "Distribute" means to make available to the public the original and copies of the Work through sale or other transfer of ownership.

4. "Licensor" means the individual, individuals, entity or entities that offer(s) the Work under the terms of this License.

5. "Original Author" means, in the case of a literary or artistic work, the individual, individuals, entity or entities who created the Work or if no individual or entity can be identified, the publisher; and in addition (i) in the case of a performance the actors, singers, musicians, dancers, and other persons who act, sing, deliver, declaim, play in, interpret or otherwise perform literary or artistic works or expressions of folklore; (ii) in the case of a phonogram the producer being the person or legal entity who first fixes the sounds of a performance or other sounds; and, (iii) in the case of broadcasts, the organization that transmits the broadcast.

6. "Work" means the literary and/or artistic work offered under the

terms of this License including without limitation any production in the literary, scientific and artistic domain, whatever may be the mode or form of its expression including digital form, such as a book, pamphlet and other writing; a lecture, address, sermon or other work of the same nature; a dramatic or dramatico-musical work; a choreographic work or entertainment in dumb show; a musical composition with or without words; a cinematographic work to which are assimilated works expressed by a process analogous to cinematography; a work of drawing, painting, architecture, sculpture, engraving or lithography; a photographic work to which are assimilated works expressed by a process analogous to photography; a work of applied art; an illustration, map, plan, sketch or three-dimensional work relative to geography, topography, architecture or science; a performance; a broadcast; a phonogram; a compilation of data to the extent it is protected as a copyrightable work; or a work performed by a variety or circus performer to the extent it is not otherwise considered a literary or artistic work.

7. "You" means an individual or entity exercising rights under this License who has not previously violated the terms of this License with respect to the Work, or who has received express permission from the Licensor to exercise rights under this License despite a previous violation.

8. "Publicly Perform" means to perform public recitations of the Work and to communicate to the public those public recitations, by any means or process, including by wire or wireless means or public digital performances; to make available to the public Works in such a way that members of the public may access these Works from a place and at a place individually chosen by them; to perform the Work to the public by any means or process and the communication to the public of the performances of the Work, including by public digital performance; to broadcast and rebroadcast the Work by any means including signs, sounds or images.

9. "Reproduce" means to make copies of the Work by any means including without limitation by sound or visual recordings and the

right of fixation and reproducing fixations of the Work, including storage of a protected performance or phonogram in digital form or other electronic medium.

2. Fair Dealing Rights. Nothing in this License is intended to reduce, limit, or restrict any uses free from copyright or rights arising from limitations or exceptions that are provided for in connection with the copyright protection under copyright law or other applicable laws.

3. License Grant. Subject to the terms and conditions of this License, Licensor hereby grants You a worldwide, royalty-free, non-exclusive, perpetual (for the duration of the applicable copyright) license to exercise the rights in the Work as stated below:

1. to Reproduce the Work, to incorporate the Work into one or more Collections, and to Reproduce the Work as incorporated in the Collections; and,

2. to Distribute and Publicly Perform the Work including as incorporated in Collections.

The above rights may be exercised in all media and formats whether now known or hereafter devised. The above rights include the right to make such modifications as are technically necessary to exercise the rights in other media and formats, but otherwise you have no rights to make Adaptations. Subject to 8(f), all rights not expressly granted by Licensor are hereby reserved, including but not limited to the rights set forth in Section 4(d).

4. Restrictions. The license granted in Section 3 above is expressly made subject to and limited by the following restrictions:

1. You may Distribute or Publicly Perform the Work only under the terms of this License. You must include a copy of, or the Uniform Resource Identifier (URI) for, this License with every copy of the Work You Distribute or Publicly Perform. You may not offer or impose any terms on the Work that restrict the terms of this License or the ability of the recipient of the Work to exercise the

rights granted to that recipient under the terms of the License. You may not sublicense the Work. You must keep intact all notices that refer to this License and to the disclaimer of warranties with every copy of the Work You Distribute or Publicly Perform. When You Distribute or Publicly Perform the Work, You may not impose any effective technological measures on the Work that restrict the ability of a recipient of the Work from You to exercise the rights granted to that recipient under the terms of the License. This Section 4(a) applies to the Work as incorporated in a Collection, but this does not require the Collection apart from the Work itself to be made subject to the terms of this License. If You create a Collection, upon notice from any Licensor You must, to the extent practicable, remove from the Collection any credit as required by Section 4(c), as requested. 2. You may not exercise any of the rights granted to You in Section 3 above in any manner that is primarily intended for or directed toward commercial advantage or private monetary compensation. The exchange of the Work for other copyrighted works by means of digital file-sharing or otherwise shall not be considered to be intended for or directed toward commercial advantage or private monetary compensation, provided there is no payment of any monetary compensation in connection with the exchange of copyrighted works. 3. If You Distribute, or Publicly Perform the Work or Collections, You must, unless a request has been made pursuant to Section 4(a), keep intact all copyright notices for the Work and provide, reasonable to the medium or means You are utilizing: (i) the name of the Original Author (or pseudonym, if applicable) if supplied, and/or if the Original Author and/or Licensor designate another party or parties (e.g., a sponsor institute, publishing entity, journal) for attribution ("Attribution Parties") in Licensor's copyright notice, terms of service or by other reasonable means, the name of such party or parties; (ii) the title of the Work if supplied; (iii) to the extent reasonably practicable, the URI, if any, that Licensor specifies to be associated with the Work, unless such URI does not refer to the copyright notice or licensing information for the Work. The credit required by this Section 4(c) may be implemented in any reasonable manner; provided, however, that in the case of a Collection, at a minimum such credit will appear, if a credit for

all contributing authors of Collection appears, then as part of these credits and in a manner at least as prominent as the credits for the other contributing authors. For the avoidance of doubt, You may only use the credit required by this Section for the purpose of attribution in the manner set out above and, by exercising Your rights under this License, You may not implicitly or explicitly assert or imply any connection with, sponsorship or endorsement by the Original Author, Licensor and/or Attribution Parties, as appropriate, of You or Your use of the Work, without the separate, express prior written permission of the Original Author, Licensor and/or Attribution Parties.

4.

For the avoidance of doubt:

1. Non-waivable Compulsory License Schemes. In those jurisdictions in which the right to collect royalties through any statutory or compulsory licensing scheme cannot be waived, the Licensor reserves the exclusive right to collect such royalties for any exercise by You of the rights granted under this License;

2. Waivable Compulsory License Schemes. In those jurisdictions in which the right to collect royalties through any statutory or compulsory licensing scheme can be waived, the Licensor reserves the exclusive right to collect such royalties for any exercise by You of the rights granted under this License if Your exercise of such rights is for a purpose or use which is otherwise than noncommercial as permitted under Section 4(b) and otherwise waives the right to collect royalties through any statutory or compulsory licensing scheme; and,

3. Voluntary License Schemes. The Licensor reserves the right to collect royalties, whether individually or, in the event that the Licensor is a member of a collecting society that administers voluntary licensing schemes, via that society, from any exercise by You of the rights granted under this

License that is for a purpose or use which is otherwise than noncommercial as permitted under Section 4(b).

5. Except as otherwise agreed in writing by the Licensor or as may be otherwise permitted by applicable law, if You Reproduce, Distribute or Publicly Perform the Work either by itself or as part of any Collections, You must not distort, mutilate, modify or take other derogatory action in relation to the Work which would be prejudicial to the Original Author's honor or reputation.

5. Representations, Warranties and Disclaimer

UNLESS OTHERWISE MUTUALLY AGREED BY THE PARTIES IN WRITING, LICENSOR OFFERS THE WORK AS-IS AND MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE WORK, EXPRESS, IMPLIED, STATUTORY OR OTHERWISE, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT, OR THE ABSENCE OF LATENT OR OTHER DEFECTS, ACCURACY, OR THE PRESENCE OF ABSENCE OF ERRORS, WHETHER OR NOT DISCOVERABLE. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO SUCH EXCLUSION MAY NOT APPLY TO YOU.

6. Limitation on Liability. EXCEPT TO THE EXTENT REQUIRED BY APPLICABLE LAW, IN NO EVENT WILL LICENSOR BE LIABLE TO YOU ON ANY LEGAL THEORY FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES ARISING OUT OF THIS LICENSE OR THE USE OF THE WORK, EVEN IF LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

7. Termination

1. This License and the rights granted hereunder will terminate automatically upon any breach by You of the terms of this License. Individuals or entities who have received Collections from You under this License, however, will not have their licenses terminated provided such individuals or entities remain in full compliance with those licenses. Sections 1, 2, 5, 6, 7, and 8 will survive any termination of this License.

2. Subject to the above terms and conditions, the license granted here is perpetual (for the duration of the applicable copyright in the Work). Notwithstanding the above, Licensor reserves the right to release the Work under different license terms or to stop distributing the Work at any time; provided, however that any such election will not serve to withdraw this License (or any other license that has been, or is required to be, granted under the terms of this License), and this License will continue in full force and effect unless terminated as stated above.

8. Miscellaneous

1. Each time You Distribute or Publicly Perform the Work or a Collection, the Licensor offers to the recipient a license to the Work on the same terms and conditions as the license granted to You under this License. 2. If any provision of this License is invalid or unenforceable under applicable law, it shall not affect the validity or enforceability of the remainder of the terms of this License, and without further action by the parties to this agreement, such provision shall be reformed to the minimum extent necessary to make such provision valid and enforceable. 3. No term or provision of this License shall be deemed waived and no breach consented to unless such waiver or consent shall be in writing and signed by the party to be charged with such waiver or consent. 4. This License constitutes the entire agreement between the parties with respect to the Work licensed here. There are no understandings, agreements or representations with respect to the Work not specified here. Licensor shall not be bound by any additional provisions that may appear in any communication from You. This License may not be modified without the mutual written agreement of the Licensor and You. 5. The rights granted under, and the subject matter referenced, in this License were drafted utilizing the terminology of the Berne Convention for the Protection of Literary and Artistic Works (as amended on September 28, 1979), the Rome Convention of 1961, the WIPO Copyright Treaty of 1996, the WIPO Performances and Phonograms Treaty of 1996 and the Universal Copyright Convention (as revised on July 24,

1971). These rights and subject matter take effect in the relevant jurisdiction in which the License terms are sought to be enforced according to the corresponding provisions of the implementation of those treaty provisions in the applicable national law. If the standard suite of rights granted under applicable copyright law includes additional rights not granted under this License, such additional rights are deemed to be included in the License; this License is not intended to restrict the license of any rights under applicable law.

Creative Commons Notice

Creative Commons is not a party to this License, and makes no warranty whatsoever in connection with the Work. Creative Commons will not be liable to You or any party on any legal theory for any damages whatsoever, including without limitation any general, special, incidental or consequential damages arising in connection to this license. Notwithstanding the foregoing two (2) sentences, if Creative Commons has expressly identified itself as the Licensor hereunder, it shall have all rights and obligations of Licensor.

Except for the limited purpose of indicating to the public that the Work is licensed under the CCPL, Creative Commons does not authorize the use by either party of the trademark "Creative Commons" or any related trademark or logo of Creative Commons without the prior written consent of Creative Commons. Any permitted use will be in compliance with Creative Commons' then-current trademark usage guidelines, as may be published on its website or otherwise made available upon request from time to time. For the avoidance of doubt, this trademark restriction does not form part of this License.

Creative Commons may be contacted at <http://creativecommons.org/>.