The Rule of the Triumvirate
Reconciling Science, Religion, and Philosophy

Science, religion, and philosophy are often cast as rivals. Today, our attention focuses on the match-up between science and religion, but science and philosophy have also gone toe-to-toe many times over the ages. Philosophers of ancient Greece argued that nothing could be learned by paying attention to the senses, that real truth entered through the mind as pure, abstract reason. The medieval controversies over whether the sun or the earth was at the center of the universe boiled down to whether to accept an empirical understanding that did not accord with an established philosophical framework. Even so great a scientist as Albert Einstein argued against quantum mechanics from the philosophical point of view that "God does not play dice with the universe." Philosophy and religion have not always lived in peace, either. Thinkers like Augustine of Hippo and Thomas Aquinas lavished their great intellect on reconciling the two, in part by insisting that God is really a philosopher after all. Today, science seems to have its rivals on the run, yet they turn in flight long enough to point out, rightly, that science has no power to address the issues of meaning in people's lives.

It's time to reconcile these rivals, to recognize the power of each within its own domain and the synergy that arises where their domains interact.

Science, philosophy, and religion pursue truth from different directions with different tools. Each is tailored for a different domain of understanding. Each addresses different questions. Each can support the others where their domains interact. If these three would rule together, this powerful triumvirate could end many silly controversies and put humanity onto a more productive intellectual path.

The Domain of Science

Science seeks natural truth. It pursues its truths by empirically observing the natural world. Its tools are the human senses and the instruments we have built to augment those senses. Its method is inductive inference, that is, drawing conclusions from the relationships among observations.

Because observation senses the tangible qualities of the universe, science excels at revealing the phenomena of reality and understanding how they interact. Its tools readily answer *what* questions: What is that strange animal with the big feet and the hard bill? What is that star that is pulsing a thousand times each second? What is that chemical that turns rock greenish-blue? Science's inductive method then answers *how* questions: How does the sun shine? How does sunshine make the grass grow? How does grass keep cows alive? Science is so powerful in describing and explaining the natural world that there really is no room left in this enterprise for philosophy or religion. Even if science doesn't currently have an explanation for some natural phenomenon, for example human consciousness, it would be more intellectually honest to admit our current ignorance and pursue the question scientifically rather than to construct explanations using philosophy or religion.

The empirical nature of the scientific enterprise that brings it its strength is also its weakness. For science to draw valid inductive conclusions, its observations must truly represent the phenomena they reflect. Cosmology presents a recent example of this weakness. For most of the twentieth century, astronomers observed the universe expanding at a rate that seemed to be decreasing from the Big Bang. They drew an impressive set of inductive conclusions from this observation. But in the 1990's, new observations made available by advancing technology revealed that the universe was expanding at an accelerating rate. This new data invalidated many of the inductive conclusions that had been drawn from the less complete observations. The scientific approach to truth is inherently limited by the ability to observe.

The Domain of Philosophy

Philosophy uncovers abstract truth. It pursues its truths by reasoning about abstract concepts. Its only tool is the human mind. Its method is deductive reasoning, that is, chaining premises and conclusions together by the rules of logic.

Philosophy is not limited by the ability to observe, so it is useful for investigating the intangible elements of reality. Intangible qualities like justice and love, constructs like government and culture, and abstractions like numbers and triangles will not yield their truth to science's empirical inquiry. Yet by manipulating them with tools of reason, we can uncover useful consistencies and relationships.

Because reason employs an explicit structure of premises and conclusions, philosophy excels at revealing the connective tissue of reality. It builds a superstructure of understanding that can answer *why* questions: Why do the three angle of a triangle subtend a semicircle? Why are governments instituted among men? Why is murder evil? Empirical observation can reveal *that* the angles of a triangle subtend a semicircle, *how* governments are instituted among men, or *how* the consequences of murder propagate harms, but it cannot go to the next step and say *why* it should be so.

A scientist may seek reasoned, theoretical answers to the *why* questions about natural phenomena. Scientific pursuits are more fruitful when they are undertaken within a theoretical framework. It allows the scientist to form reasonable hypotheses and structure productive experiments. But when a scientist uses deduction to create a theory about natural phenomena, the scientist is acting as a philosopher. Any understanding or conclusions from deductive, philosophical theory don't become scientific truth until they are supported by empirical observation. However much we might admire the work of a master theoretician like Albert Einstein, the consequences of his effort were not fully embraced as science until they had been empirically verified.

(Perhaps you consider this insistence that a theoretical scientist is really a natural philosopher is just word play, mere semantics. It is certainly semantics, but semantics are a central tool of philosophy. Before we can reason about an abstraction, we must understand the precise meaning of the symbol that represents the abstraction. Semantics provides a precise meaning to words, so it is not a "mere" commodity in philosophy. This essay is, after all, a work of philosophy. A

semantic understanding that allows us to reconcile science, philosophy, and religion should constitute intellectual progress.)

The theoretical nature of the philosophical enterprise that brings it its strength is also its weakness. For philosophy to draw valid deductive conclusions, the first premises in its chain of deduction must be true. The world abounds with examples of reasoned theories that time has proven to be wrong because they were based on the wrong initial assumption. Consider the divine right of kings, or the geocentric universe, or the four elements of health. Indeed, it may well be argued that philosophy has gotten more things wrong than right across the ages. For all the seductive, explanatory potential of a philosophical theory, reason is easily abused. This is why science is much better than philosophy at producing truth about observable phenomena. Science, because it is grounded in observation, doesn't need an unprovable first premise. However, when a scientist strays from induction to deduction while reasoning about natural phenomena, his theory becomes vulnerable to the weakness of philosophy.

The Domain of Religion

Religion concerns moral truths. It derives its truths from intuition, for example from revelation, inspiration, meditation, and contemplation. Intuition occurs when an idea arrives in the mind without explicit reasoning, either inductive or deductive, but with a sense that it is true.

Religion is not limited by the ability to observe because it deals with intangibles, which can't be observed. It is not limited by an unprovable first premise because it does not employ chains of logic. Its origins are, frankly, mysterious. Like philosophy and science, religion cannot be trusted to always produce truth. Indeed, the mysterious origins of intuition make it more difficult to validate than either science or philosophy. The many, contradictory claims made by various religions cannot all be true.

Religion is so vulnerable to error that it may not seem like an equal partner with science and philosophy in the pursuit of its truth, but intuitive truth has a power that is not available to evidence or reason. Answering the *what*, *how*, and *why* questions of existence still leaves us short of knowing all we need for a meaningful existence. The shortfall centers on *should* questions. Consider, for example, the issue of global warming. We have an excellent scientific understanding of *what* it is and *how* its consequences propagate. We have a compelling theory *why* we ought to respond to it. What we lack is a deep, intuitive sense that we *should* act.

Religion traipses on the domains of science and philosophy, nature and abstraction respectively, to try to explain reality in a way that motivates behavior. A false, limited, or allegorical explanation can sometimes be more effective for motivating morality than one that is literally true because it may be more approachable. For example, the fable of the tortoise and the hare, though factually false, contains a moral truth. So a mythological explanation of, say, creation, though it is factually false, may contain a moral truth that a factually true explanation lacks. Moral truth has a different relation to reality than scientific and philosophical truth.

Science and philosophy produce cold truth. Indeed, their cold objectivity is essential to their success. The veracity of their truth depends on strict adherence to processes that have proven

their validity in producing truth. Before a scientific or philosophical conclusion is accepted, cool, objective heads must assess the evidence or examine the reason that formed the conclusion. Intuitive truth, on the other hand, is warm truth. Because it is based in intuition, a feeling of being true, it is inherently subjective. But its feeling gives it its power to motivate, its power to address *should* questions. Intuition inherently engages an emotion, and emotions propel our motivation.

The subjective nature of the religious enterprise that brings it its strength is also its weakness. Intuition speaks differently to different people. It is the most equivocal way of knowing truth. Intuition's feeling of correctness is no guarantee that the idea is literally true or even metaphorically true. Intuition can easily lead us to falsehood. Even when an intuitive truth contains real truth, the feeling does not reveal the conditions under which it is true. When intuition does yield a bona fide moral truth, its feeling of rightness may deceive people into thinking that they have found a literal truth. It often happens that the emotion coupled to an idea becomes so strong that some people will reject the evidence of science or the reason of philosophy about some literal truth. Creation is certainly the archetype of this mistake.

Producing moral truth is not really the point of religion. Religion fails unless it produces moral behavior. Warm, moral truth has all the power it needs to directly motivate behavior. When people try to isolate the truth component of moral truth from its moral component in order to bring it into the objective realm, the exercise cools its moral truth. Trying to understand why something should be a moral imperative is the kind of *why* question that is better left to philosophy. Trying to trace out the causes and consequences of immoral action is the kind of *how* question that yields better to the tools of science.

The subjective nature of moral truth makes it difficult to validate. It can finally only be validated by the moral behavior of its adherents.

Confederating the Domains

Science and Philosophy have a long and fruitful alliance. Science is wed to Mathematics, the most resplendent daughter of Philosophy. It is pure, abstract reason developed on the soundest of footings and constructed with only the most well-validated, logical tools. The power and virtue of Mathematics make it irresistible to the scientific enterprise. Science and Mathematics are joint sovereigns over many of the provinces of Science, especially Physics.

The border between the domains of Science and Philosophy is broad and indistinct. Many of its residents hold dual citizenship. There dwell theorists of the scientific disciplines; theoretical physicists occupy a special place of honor in this area. This border area also hosts attractive resorts for visitors from both domains. Scientists resort to philosophy to build theories that they can test when they return to their laboratories. Philosophers resort to science to inform their theories with natural reality. Today, great comity reigns in this border area because both Science and Philosophy respect each other's cold truths, but in centuries past, the territory was hotly disputed. There was a time when most of the territory now dominated by Science was ruled by Philosophy. Knowledge of everything from cosmology to medicine to an understanding of cognition was based on reasoned theories rather than empirical evidence. But across the ages,

Science's natural ally, Technology, empowered Science at the expense of Philosophy. Because Philosophy is reasonable by its nature, it yielded peacefully to the reasonable claims of Science.

The border between Philosophy and Religion is narrow and austere. In other ages, it was a vibrant center of intellectual life, but today most practitioners of moral philosophy and theology have retreated from the border to dwell more deeply in the domain in which they are most comfortable. Perhaps if the triumvirate can reconcile the domains of truth, this border area will regain something of its past glories.

Religion tends to be the most provincial of the domains. Its provinces have often bickered among themselves when their warm, subjective truths become overheated by being insulated from the cooler moods of objective truth. This heat also ignites skirmishes on the border between Science and Religion. Neither side seems interested in yielding an inch of its territorial claims. It falls to Philosophy to broker a peace between these rivals. This philosophical essay sketches what the contours of that settlement could look like.

Religion needs Science and Philosophy to achieve the kind of wholesome warmth that religious truth can generate. Philosophy can help put Religion into a context that makes its truth more compelling. Science can help Religion validate its truths and resolve its internecine disputes by bringing in evidence of the consequences of moral behavior. But Science and Philosophy also need Religion in order to make their truths more comfortable for the vast populace that cannot live with cold truth only.

The Power of Three

Science, philosophy, and religion each dominate a different domain of inquiry into truth. Each domain produces a different kind of truth: natural, abstract, and moral respectively. Each is motivated by different questions: *how*, *why*, and *should* respectively. Each rules its domain with different tools: induction, deduction, and intuition respectively. Each set of tools has strengths and limitations, and each field's strengths and limitations complement those of the other two. Any two working together can circumscribe broad areas of understanding, but only the three combined can provide the full volume of truth humanity needs to prosper.

Those of us with a special allegiance to Truth must never lose sight of the fact that as glorious as Truth may be, our master serves a higher master. Truth itself is the servant of Goodness. Goodness, not Truth, moves us toward human purpose. The resources of Truth cannot fully be brought into the service of Goodness while the domains of Truth bicker among themselves. They may even serve to undermine the will of Goodness. Let us acknowledge the roles of each of these domains of Truth so that we can cease the bickering and move humanity forward in pursuit of its highest purpose.