Notes on Philosophy

A working rough draft

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These are notes which I have used over the years to form discussions for a philosophy class.

This is certainly a work in progress, and will continue to change as I revise it and add to it over the coming months and years.

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1.1.1 Anaximander: Order Out of Chaos (2022-01-23 16:01)

The career of Anaximander was both destructive and constructive. He formulated objects to the views of Thales, and then assembled lines of reasoning to support his own views.

Against Thales, he argued that finding the systemic principle of the universe in any one element was too limited, too specific. For one particular element to be the source and foundational principle for the universe seemed impossible to Anaximander, because that one element would be locked into the narrowness of not being any of the other elements.

So Anaximander proposes a view that there is some indeterminate stuff that is not any one element, but contains the potential to give rise to each and all of them, as Donald Palmer writes:

> For Anaximander, the ultimate stuff behind the four elements could not itself be one of the elements. It would have to be an unobservable, unspecific, indeterminate something-or-other, which he called the Boundless, or the Unlimited (*apeiron* in Greek). It would have to be boundless, unlimited, and unspecific because anything specific is opposed to all the other specific things in existence. (Water is not fire, which in turn is not air, and air is not earth [not dirt and rock]). Yet the Boundless is opposed to nothing, because everything is in it.

Anaximander's language is vague, but the modern reader can consider concrete examples from the twenty-first century. In complex organisms, a stem cell is indeterminate, or undetermined — it can eventually become one of a long list of different and mutually exclusive types of cells.

Likewise, in the plasmatic chaos in the center of the star, subatomic particles are freely existing which will later constitute definite, but distinct, types of atoms: hydrogen, helium, lithium, beryllium, boron, carbon, etc.

So Anaximander's proposal for a limitless boundless something as a foundational principle for the universe isn't too bad, as Donald Palmer explains:

> Anaximander seems to have imagined the Boundless as originally moving effortlessly in a great cosmic vortex that was interrupted by some disaster (a Big Bang?), and that disaster caused opposites — dry and wet, cold and hot — to separate off from the vortex and to appear to us not only as qualities but as the four basic elements: earth, water, air, and fire.

In his analysis of Thales, Anaximander presented an early version of the concept of entropy: the idea that, without some force to the contrary, the universe tended toward some homogeneous equilibrium.

It is also possible to read into Anaximander an early version of the hypothesis that life is the principle which opposes entropy: action which moves the universe away from entropy is life. The biological process might be the one force in the universe which moves things toward more order, and which makes more complex structures.

1.1.2 Rebellion among Philosophers: Anaximander Questions Thales
(2022-01-21 07:01)

Given that Thales is widely considered to be the world's first philosopher, it was left to the world's second philosopher to be the world's first intellectual rebel. It was a historical inevitability that, Thales having expressed some views, someone else would later express different views.

The task of the reader is to compare both sets of ideas. This task will require thought about evenhanded and fair readings of the two competitors. A stalemate or a tie is a perfectly acceptable outcome — as is the production of a third alternative arising from the comparison. The task is more about the thinking process and less about the outcome of a final judgment.

Every disagreement also involves a certain amount of agreement. While no two philosophers agree on everything, it is also true that no two philosophers disagree on everything. In the case of Thales and his successors, Donald Palmer points out that:

> Several generations of Thales's followers agreed with his primary insight — that the plurality of kinds of things in the world must be reducible to one category — but none of them seems to have accepted his formula that everything is water.

The second philosopher has two tasks: First, he must first produce reasons or evidence which support his disagreement with the first philosopher. Second, he must produce reasons or evidence which support his innovation, his new idea which is proposed as a replacement for the first philosopher's idea.

So who was the world's second philosopher?

Thales taught his philosophy, whether in a formal academic setting, or merely by example, we do not know. "His student Anaximander" lived from around 610 B.C. to around 546 B.C., and was "also from the city of Miletus, said that if all things were water, then long ago everything would have returned to water."

Anaximander was in some sense a "student" of Thales, whether through formal education or through merely being exposed, firsthand or secondhand, to the ideas of Thales. It is not certain whether or not the two men ever met in person, although it is very likely, given that they lived in the same city at roughly the same time.

In any case, Anaximander argues against Thales — in the philosophical sense of 'argumentation' which means a calm presentation of a line of reasoning, not an emotional quarrel — by a technique which amounts to saying, "If what you say is true … "

This technique is called *reductio ad absurdum* or simply *reductio* for short. The writer grants his opponent's view, and then shows that this view entails something clearly illogical or false.

Anaximander's first argument amounts to this: If it were true that everything is essentially water, then by now, everything would have returned to the simple state of water, and there would be nothing in the universe besides water.

In a slightly different argument, Anaximander points out that fire is the opposite of water, and asks how it would be possible for water to produce fire. He asks it as a rhetorical question, i.e., he expects no answer, because he thinks that the answer is obvious to everyone — water can't possibly produce fire.

The reader will recall that the "principle of charity" is necessary here. One could quickly retort that, from the viewpoint of modern chemistry, water is hydrogen and oxygen, and can easily give rise to fire. But such a retort would miss the point.

Donald Palmer gives a more detailed account of Anaximander's line of reasoning:

> Anaximander asked how water could become its deadly enemy, fire — how a quality could give rise to its opposite. That is, if observable objects were really just water in various states of agitation — as are ice and steam — then eventually all things would have settled back into their primordial liquid state. Aristotle paraphrases him this way: If ultimate reality "were something specific like water, the other elements would be annihilated by it. For the different elements have contrariety with one another … If one of them were unlimited the others would have ceased to exist by now." (Notice that if this view can be accurately attributed to Anaximander, then he subscribed to an early view of the principle of entropy, according to which all things have a tendency to seek a state of equilibrium.)

The modern reader might be tempted to agree with half of what Anaximander asserts here, and disagree with the other half.

One the one hand, the tendency of physical systems to move toward a state of equilibrium, which can be variously characterized as chaos or homogeneity, is a valuable insight. Anaximander might be credited with anticipating the famous second law of thermodynamics, and is a forerunner of thinkers like Rudolf Clausius, Max Planck, and Ludwig Boltzmann.

On the other hand, he blithely assumes that something can't become its opposite, or that a quality can't give rise to its opposite. After Anaximander, some later philosophers — among them, G.W.F. Hegel — will assert the view that a thing or a quality will always give rise to its opposite.

In any case, the world's first philosophical revolution — Anaximander's opposition to Thales — is groundbreaking and worth studying.

1.1.3 The Principle of Charity and Thales: Making Sense of Apparent Nonsense
(2022-01-20 07:06)

When reading philosophical texts, the student will inevitably come across passages which seem odd, confused, or even simply wrong. Yet the student learns that these passages were written by some of the greatest minds of the ages. How does one understand this?

Wise readers will apply an approach called 'the principle of charitable interpretation.' This approach looks at a text, seeks and explores competing possible interpretations, and attributes the most rational intentions to the author, and attributes truest meaning to the text, or the meaning most likely to be true, or the meaning nearest the truth — sidestepping, for the moment, exactly what it means to be "true," and working simply with a *prima facie* and intuitive sense of 'true.'

Another related approach requires the reader not to reject an entire text or its author simply because a small part of that text seems to be in error. A number of major authors have repeated the notion that garlic juice neutralizes a magnetic field. These authors — including Johannes Eck, Georg Agricola, Paracelsus, Portaleone, Andreas Libavius, and Johann Baptist van Helmont, among others — wrote texts which were otherwise relatively rational and reliable.

So it is with Thales, the world's first philosopher. Donald Palmer applies the "principle of charity" to Thales:

> I regret to say that I must add three other ideas that Aristotle also attributes to Thales. My regret is due to the capacity of these ideas to undercut what has seemed so far to be a pretty neat foundation for future science. Aristotle says that, according to Thales,
>
> > (A) The earth floats on water the way a log floats on a pond.
> > (B) All things are full of gods.
> > (C) A magnet (loadstone) must have a soul, because it is able to produce motion.

The first of these ideas, (A), is puzzling because it seems gratuitous. If everything is water, then it is odd to say that some water floats on water. (B) shows us that the cut between Mythos and Logos is not as neat in Thales' case as I have appeared to indicate. (C) seems somehow related to (B), but in conflicting ways. If according to (B) all things are full of gods, then why are the magnets mentioned in (C) any different from everything else in nature? No surprise that over the years scholars have spilled a lot of ink — and, because the debate still goes on, punched a lot of computer keys — trying to make sense of these ideas that Aristotle attributes to Thales.

Now, it is clear that the earth does not float on water. But the reader can charitably note the similarities between "floating" on water and "floating" in space. While the former depends on relative densities and the latter depends on gravitation and orbital physics, the affect of floating is similar in both cases.

More than 2,000 years after the fact, it is difficult to guess at what Thales had in mind when he wrote — or perhaps said — that "all things are full of gods." Perhaps he thought that there were forces which kept objects in existence: otherwise, they might simply cease to exist. Or perhaps he noted that objects had the power to create certain sensations in the human mind: colors, textures, scents, sounds, and tastes. Modern readers will probably never know with certainty what Thales meant, but even these two quick examples show charity in speculating about what he might have meant.

Likewise, the notion that a magnet has a soul is clearly an acknowledgement of the mysterious power it has. Thales lacked the vocabulary and electromagnetic concepts which enabled Michael Faraday to describe, explain, and name magnetic fields. If Faraday didn't have the advantages of using the concepts of modern physics, then perhaps he, too, would have attributed "souls" and "gods" to magnets and other physical objects.

In the case of Thales and other Presocratic thinkers, an additional factor obliges the reader to extend charity when reading them: the texts themselves are fragmentary and have been through a long and perilous process of transmission. If an author, centuries after his work, were known only by a few sentences, plucked from his various texts, which were perhaps garbled as they'd been copied and re-copied, and which lacked not only the larger context of the book from which they came, but also lacked a situational context which might show which concerns the author was addressing, then such an author might be easily misunderstood, and might easily appear as mistaken, confused, or ignorant — when in fact he might be none of those things.

The value of the "principle of charity" is that it causes the reader to explore the text further and more carefully instead of dismissing it: and the reader will find that further exploration rewarding.

1.1.4 Thales and Monism: Is There a Single Underlying Principle? (2022-01-19 07:01)

As one who sought to add philosophical conceptual explanations to the mythological explanations of the universe, Thales looked for a unifying thought or substance which would explain all objects.

This is a big question which has kept philosophers busy over the centuries. Can all of reality be reduced to one single principle? Some folks say so; they are called 'monists.' The question for them is, then, what is that one single principle.

Other philosophers argue that reality is too complex to be reduced to a single principle, and that there are actually two principles at work. These thinkers are called 'dualists.'

The discussion of dualism and monism is a big one, and way too large for this blog post. It suffices to note, for present purposes, that Thales seems to have been a monist. One must quickly add that he probably would not have conceptualized it that way, and that there are lots of things that remain unknown about his metaphysical system, and which levels and types of reality he might have postulated, as Donald Palmer writes:

> Thales was familiar with the four elements: air, fire, water, and earth. He assumed that all things must ultimately be reducible to one of these — *but which one?*

It is easy to laugh at the traditional framework of four elements, but it is a logical system. With Thales, the system remains in place, but is elevated by adding a conceptual level to the mythological framework.

In all the empirical experience that one could have in the year 600 B.C., water was ubiquitous. Water is necessary for life, and water surrounds all land masses. So water seems like a good choice if one is looking for a universal principle:

> Of all the elements, water is the most obvious in its transformations: Rivers turn into deltas, water turns into ice and then back into water, which in turn can be changed into steam, which becomes air, and air, in the form of wind, fans fire.

Why would a twenty-first century philosopher spend time thinking about Thales, or taking his ideas seriously? Because Thales was trying to do what physicists are still doing: searching for a "grand unified theory" (GUT).

There is an innate drive in humans to seek foundational principles. Does this innate drive imply that such principles exist? The monists, in any case, continue to seek one central axiom to explain reality. Thales was perhaps the first one to do this, and led all the others in that direction.

It's clear that Thales was looking for such a foundational concept, as Donald Palmer reports:

> Thale's actual words were: "The first principle and basic nature of all things is water."
>
> This obviously false conclusion is valued today not for its content but for its form (it is not a great leap between "All things are composed of water" and the claim "All things are composed of atoms") and for the presupposition behind it (that there is an ultimate stuff behind appearances that explains change while remaining itself unchanged). Viewed this way, Thales can be seen as the first philosopher to introduce the project of reductionism. Reductionism is a method of explanation that takes an

object that confronts us on the surface as being one kind of thing and shows that the object can be reduced to a more basic kind of thing at a deeper but less obvious level of analysis. This project is usually seen as a major function of modern science.

Thales is, then, the father of reductionism. Simply put, an observer might note the commonalities between trees, grass, marigolds, tomatoes, etc., and create a category called "green plants." In this category, one finds photosynthesis, a need for water, a need for light, roots, leaves, etc.

Reductionism is, in its simplest form, the creation of categories.

The question is: How far can one take reductionism? Is it possible to take it too far? Is it possible to take it not far enough? This question will reappear over and over again, in various forms, in the history of philosophy. Not to take reductionism far enough is to create a "distinction without a difference." To take reductionism too far is to overlook differences.

In any case, Thales seems to be, not only the father of philosophy, but also rather the father of monism and reductionism. Not bad work for a guy living around 600 B.C.!

1.1.5 Seeking a Systematic and Unified Ontology: Thales Looks for the Foundational Principle of Physical Reality (2022-01-18 07:25)

The first philosophers in the history of the world are grouped together as Presocratics. Among the Presocratics are several subgroups, the earliest of which is the Milesians. Among the Milesians, the initial individual was a man named Thales. He did his work around 600 B.C., give or take a decade. So he was the first of the first of the first.

As Donald Palmer writes:

> Philosophy makes its first self-presentation in three consecutive generations of thinkers from the little colony of Miletus on the coast of Asia Minor — today's Turkey — in the sixth century.
>
> The first recorded philosopher is Thales of Miletus.
>
> Apparently, he did not write a book, or if he did, it is long lost.

So, this most fascinating fellow — potentially the world's first philosophy — did not leave directly anything for modern readers. How does one know about him? What did he think?

Although there is no major text written by Thales left for us, there are a few dubious and sketchy quotes. Most of those are recorded in books written by Aristotle, who wrote about three hundred years after Thales. Donald Palmer reports:

> If we can trust Aristotle and his commentators, Thales's argument was was something like this:
>
> If there is change, there must be some *thing* that changes, yet does not change. There must be a unity behind the apparent plurality of things, a Oneness disguised by the superficial plurality of the world. Otherwise the world would not be a world; rather, it would be a disjointed grouping of unrelated fragments.
>
> So what is the nature of this unifying, ultimately unchanging substance that is disguised from us by the appearance of constant change?

Thales was looking for a unifying and systematic principle behind physical reality — behind the phenomena which people detect with their five senses. What is the basic and foundational stuff of the world? Of the universe?

The questions which Thales posed are not that much different than the questions of modern physics more than 2,000 years later. The search for a unifying principle behind all forms of matter is the essence of subatomic physics. Likewise, the search for a unity behind all forms of energy, and eventually, behind both matter and energy, is a common theme among the great physicists of the past, present, and foreseeable future.

The physicists of the modern age look to various and increasingly smaller subatomic particles, look to a continuum of electromagnetic energy, and look to equations like Einstein's to encompass both matter and energy.

Thales looked to something rather common yet remarkably subtle. He wondered if the underlying principle of all physical reality might be water.

It's easy to dismiss Thales as simple-minded, primitive, or naive. But the reader might consider his choice more patiently. Water is one of the few things which is readily experienced in all three states: solid, liquid, and gas. Water constitutes the majority of the earth's surface: 75 % by some accounts. Water is also essential to all known forms of life, and constitutes a majority of the bodies of all known plants and animals.

So Thales could have done worse.

In addition to seeking a unifying and systematic principle for the sensible world, Thales was also trying to develop a conceptual explanation of that world, an explanation that would add a layer of depth beyond the already-available mythological explanations.

Contrary to the current casual usage of the word, 'myth' does not refer exclusively to falsehood. There are true myths. A myth is an explanation by means of a narrative. True myths give an accurate explanation of some aspect of reality, but they often give an incomplete explanation. They are true but incomplete.

Thales, his fellow Milesians, and the Presocratics generally, sought to give conceptual explanations of the physical world around them. This is why their early philosophy is often so closely bound to physics. There was no sharp distinction between physics and philosophy in those days.

Thales thought that everything was water. Modern physicists think that everything is atoms or subatomic particles. The difference may not be so large.

1.1.6   The Unreliable Sources for Reliably Influential Inventiveness: The Obscure But Powerful Effect of Presocratic Thought (2022-01-17 13:14)

The good news about the Presocratic philosophers is that they are among the most thought-provoking, creative, and inventive thinkers in the history of philosophy. The bad news is that they are among the worst-documented authors ever.

That means that modern readers have very little information about them, and very little reliable information about exactly what they wrote or hypothesized. As Donald Palmer writes, "the problem is that in fact very little is known about the pre-Socratic philosophers. Most of the books that they wrote had already disappeared by the time that the philosopher Aristotle" summarized and explained their views.

Aristotle, who lived from 384 B.C. to 322 B.C., "tried to catalog and criticize their views." Aristotle wrote about these Presocratic philosophers, and what they wrote and asserted. The problem is, modern readers can't be sure of how accurate Aristotle was. Did Aristotle understand the Presocratics correctly? Did he report about them accurately?

Donald Palmer explains:

> Today's understanding of the pre-Socratics is based mostly on summaries of their ideas by Aristotle and by later Greek writers who had heard of their views only by word of mouth. Many of these accounts are surely inaccurate because of distortions caused by repetition over several generations by numerous individuals. (Have you ever played the game called Telephone, in which a complicated message is whispered to a player, who then whispers it to the next player, and so on, until the message — or what's left of it — is announced to the whole group by the last player in the circle?) Also, these summaries often contained anachronistic ideas, that is, ideas from the later time projected back into the earlier views. Only fragments of the original works remain in most cases today, and even those few existing passages do not always agree with one another. Remember, these "books" were all written by hand on papyrus (a fragile early paper made from the crushed and dried pulp of an Egyptian water plant), and all editions of these books were copied manually by professional scribes. Furthermore, the meaning of many of the fragments is debatable, both because of the "fragmentary" nature of the scraps — key words are missing or illegible — and because of the obscure style and vocabulary in which many of these works were written. Nevertheless, a tradition concerning the meaning of the pre-Socratics had already developed by Aristotle's time, and it is that version of their story that influenced later philosophers and scientists. Aristotle is not the only source of our information about the pre-Socratics, but unfortunately most of the additional information comes from post-Aristotelian commentators giving interpretations of Aristotle's remarks. We do not know to what extent the material provided by these other sources is informed by extraneous sources. So Aristotle appears to be our real source, and we have no clear idea of his accuracy because he paraphrases the various pre-Socratics.

Donald Palmer summarizes the situation bluntly: "Therefore, the tradition" which he describes "is flawed and distorted in many ways."

So, if this data is so garbled, if this information is so distorted, why should modern readers invest their time reading it?

It's worth wading through these disjointed and obscure texts because the Presocratics started exploring so many questions which lie at the three-way intersection of mathematics, philosophy, and physics. They explored exponential calculations — algebra class before algebra had been discovered — as they investigated rapidly accumulating accelerations and asymptotic curves. They hinted at calculus 2,000 years before Gottfried Wilhelm Leibniz and Isaac Newton discovered calculus.

Scholars continue to explore this tantalizing yet frustrating batch of quotes and snippets from the world's first philosophers because they directly connect with the most modern, and post-modern, questions about the universe.

1.1.7 Revealing the Foundations of the Universe: The Presocratics Establish Modern Physics (2022-01-16 13:57)

Who were the Presocratics? They were a group of philosophers who did most of their work between 600 B.C. and 400 B.C., give or take a few decades. They did not all live in the same place; they were separated by hundreds of miles, at a time when travel and communication were much slower than they are now.

They did not all know each other, and they certainly did not all agree on many topics. They are divided into a number of different subgroups.

Yet they are all categorized together, and for good reasons. Yes, it's true that they all — or most of them — did their work prior to the famous career of Socrates. But there is a better reason for lumping them all together. It's the way they thought — the way they reasoned. Even when they came to different conclusions, they were using similar methods.

Donald Palmer explains that "the thinkers who were active in Greece between" 600 B.C. and 350 B.C. "are known today as the pre-Socratic philosophers, even though the last group so designated were actually contemporaries of Socrates." Those dates are, of course, approximate, because these kinds of trends fade into, and out of, existence in a gradual way.

While the beginning and ending of a construct like the Presocratic era is fuzzy, the life of Socrates had definite beginning and ending points. Socrates was born in 469 B.C. and died in 399 B.C.

Donald Palmer explains some common threads among the diverse group: "What all the pre-Socratic philosophers have in common is their attempt to create general theories of the cosmos (*kosmos* is the Greek term for "world") not simply by repeating the tales of" what happened, but rather explaining why and how it happened.

The Presocratics thought that myths — even when they are true — are not sufficient explanations. A myth is an explanation by means of narrative. A myth can be true or false. In slang and casual speech, 'myth' is sometimes used to refer to a falsehood, but that is not its meaning in philosophical discourse. The Presocratics pointed out that, if a conceptual explanation was given in addition to a myth, then the net amount of knowledge and understanding would be greater.

For example: a person might ask about how the first men arrived on the moon and walked around on it. A mythological answer would talk about Wernher von Braun and Neil Armstrong and the Apollo spacecraft, etc.. That myth would be true as far as it went, but it lacks some information.

A conceptual answer would talk about the forces of gravity, how much acceleration a spacecraft needs to reach a certain speed, what the escape velocity is for earth orbit, etc.

The Presocratics wanted to explain physical phenomena, not by giving a narrative, "but by using observation and reason to construct general theories that would explain to the" rational "and curious mind the secrets behind the appearances in the world." A conceptual answer articulates principles which can be applied beyond the case in question. A mythological answer, even when it's true, is usually limited to a concrete and specific instance.

> Another commonality was that all the pre-Socratic philosophers stemmed from the outlying borders of the Greek world: islands in the Ionian Sea or Greek colonies in Italy or along the coast of Persia (in today's Turkey).

Some scholars speculate that social life on the edges of the Greek Empire was more interesting than life back home on the Greek mainland, and that this circumstance occasioned the birth of philosophy. This is an interesting hypothesis, with plausible arguments both for and against it.

In any case, "knowledge of these thinkers is tremendously important not only for understanding the Greek world of their time, but" for gaining insights into modern physics, modern mathematics, and modern philosophy. Of course, one must also define when the modern era begins.

One of the reasons that the study of the Presocratics is good "for grasping the origins of" most subsequent "philosophy and science" is that they developed a concept of matter. One might look at different objects: a tree, an iceberg, a distant planet.

Those objects seem dissimilar to one another, but the Presocratics saw that they were all physical objects, and that there is some underlying commonality shared by all physical objects. They are all composed of matter. This is an abstraction. Abstraction is important in philosophy, in physics, and in all rational thought.

The Latin words from which the word 'abstract' arises mean to "pull away" or to "take off." In abstraction, the thinker "pulls away" a concept or a principle from the specific instance in which she or he finds it. Having separated the concept from the context, she or he can then apply that concept elsewhere — or everywhere.

The Presocratics developed a way of understanding the universe which was systematic and unified. Their understanding revealed an underlying structure to reality which made modern physics possible. This understanding included that reality is intelligible, i.e., that it can be understood; that some laws of nature are universal, i.e., they apply everywhere and everywhen; and that certain elements of logic and mathematics are the foundations of the universe.

1.1.8 Topics in Early Greek Philosophy: The Presocratics Explore New Disciplines
(2022-01-15 12:39)

Before Siddhartha formulated his thoughts in India, and before Confucius in China, the first philosophers lived and worked in Greek territories and colonies. Thales, who is reasonably cited as the world's first philosopher, did his work around 600 B.C.

What constitutes philosophy? What was it that the Greeks did to qualify as the inventors of philosophy? Donald Palmer writes that "early Greek philosophers reframed the perennial puzzles about reality in such a way as to emphasize the workings of nature rather than the" dramatic explanatory power of a narrative. In other words, the Greek found a new way to explain things. In addition to myth, the Greeks began to formulate conceptual explanations.

Mythical explanations are narratives; in this sense of 'myth,' it's important to remember that there are "true myths." This is in contrast to the colloquial or informal use of 'myth' as a synonym for 'falsehood.'

So the birth of philosophy among Greeks is, in part, about the "how" of explanations — aside from whether those explanations are true or accurate.

Not only did the Greeks arguably invent philosophy, they also created many of the various subtopics within philosophy. Donald Palmer identifies some of these specific subdisciplines:

> This new direction represents the beginnings of a way of thinking that the Greeks would soon call "philosophy" — the love of wisdom. We can discern in these early

efforts what we now take to be the main fields of the discipline that we too call philosophy: ontology (theory of being); epistemology (theory of knowledge); axiology (theory of value), which includes ethics, or moral philosophy (theory of right behavior), and aesthetics (theory of beauty, or theory of art); and logic (theory of correct inference).

One particular subtopic, cosmology, fascinated many of the earliest philosophers, including Thales, Anaximander, and Anaximenes. Cosmology asks about the foundational principles of the universe: What constitutes the universe? What keeps the universe in existence? What are the underlying essential components of the universe?

Donald Palmer remarks about these earliest philosophers:

> They tended to demote cosmogony (theories about the origins of the world) and promote cosmology (theories about the nature of the world).

In addition to getting credit for inventing philosophy, the Greeks can plausibly get credit for inventing the natural sciences. To be sure, early Babylonians, Egyptians, and Persians made some interesting astronomical observations. In order to give the Greeks the honor of inventing the natural sciences, a clear boundary between the mere collection of observational data and scientific reasoning would be necessary.

"In fact, the theories put forth in ancient Greece could be called the origins of" modern science and mathematics "with as much justification as they can be called the origins of" philosophy "even though at that early period no such distinctions could be made." Among ancient thinkers, there was no sharp separation between philosophy and the natural sciences.

Even today, there are ambiguous areas of overlap between mathematics, philosophy, and physics.

Among the Presocratics, thinkers like Zeno of Elea are still cited today in university departments of physics and mathematics. Zeno wrestled with concepts of time, space, and infinity — and wrestled with them in a way which kept his musings relevant for 2,000 years.

Other presocratics, primarily the Milesians, worked out a relationship between density, heat, and motion — anticipating the physicist Robert Brown by two millennia. The Milesians were the philosophers who lived in or near the city of Miletus: Thales, Anaximander, and Anaximenes.

> Roughly, I would say that science deals with problems that can be addressed experimentally by subsuming the observable events that puzzle us under the dominion of natural laws and by showing how these laws are related causally to those events. Philosophy, on the other hand, deals with problems that require a speculative rather than an experimental approach. Such problems often require conceptual analysis (the logical scrutiny of general ideas) rather than observation or data gathering.

Before the birth of Socrates, around 470 B.C., these earliest philosophers had invented philosophy, invented most of its subdisciplines, and laid the foundations of modern physics and modern mathematics.

1.1.9 Greek Beginnings: The Origin of the Word 'Philosophy' (2022-01-14 10:56)

While debatable, it is convenient to take the Ionian philosophers on the west coast of Turkey, formerly known as Asia Minor or Anatolia, as the first philosophers. Certainly, the Greeks dominated philosophy for its first few centuries: There was little philosophical activity outside of the Greek lands, so philosophy was not only predominantly Greek during these years, but exclusively so.

So it was that the word 'philosophy' arose out of the Greek language. 'Sophia' is a Greek word for wisdom, and 'Philo' is a Greek word for love. Philosophy is etymologically the love of wisdom, as Donald Palmer writes:

> The Greek word "Logos" is the source of the English word "logic" as well as all the "logies" in terms like "biology," "sociology," and "psychology," where "logos" means the theory, or study, or rationalization of something. "Logos" also means "word" in Greek.

Reasoning is impossible without words. "Logos" can mean "word," but it can also mean reasoning or any ongoing interactive linguistic activity, "so it involves the act of" writing, "or setting forth an idea in a clear manner." Philosophy is impossible without language, and without writing, only simplistic reasoning is possible. Complex trains of thought require writing.

But there are complications to this simple story about how the word 'philosophy' came to be. The Greek language has at least four words that can be translated into English as 'love.' Why was 'philo' chosen, instead of another similar word? The Greek language reflected the awareness that there are different types of love. A person might love ice cream, and parents love their children. The same word 'love' is used to refer to two different relationships.

Likewise, the word 'gnosis,' from which the English word 'cognition' arises, could have been used instead of 'sophia.'

So the simple story about the origins of the word 'philosophy' is not so simple after all.

> "Logos," therefore, designates a certain kind of thinking about the world, a kind of logical analysis that places things in the context of reason and explains them with the pure force of thought. Such an intellectual exercise was supposed to lead to wisdom (Sophia) and those who dedicated themselves to Logos were thought of as lovers of wisdom (love = philo), hence as philosophers.

Greek philosophy began around 600 B.C., plus or minus a decade, and Greek philosophers were active until sometime after 100 A.D. There were quiet periods during those centuries when philosophy was inactive, and other periods when it was prolific.

It was in this context that the word "Logos" was applied to Jesus, and to the Hebrew concept of God which Jesus made accessible to larger audiences.

"What was there before philosophy, before Logos? There was Mythos — a certain way of" explaining things by means of narrative, i.e., by telling a story. Used in this way, the word 'myth' doesn't necessarily mean falsehood. Contrary to everyday usage of the word, in philosophy, one can speak of a true myth. Myths tell of "events that caused the world to be as it is now."

It's understandable that philosophers would like to get rid of false myths. People like to think that they're correct, and that what they believe is true.

But if some myths are true, why would philosophers still want to investigate the matter and find another, Logos-based, explanation?

Philosophy was, in part, a drive to develop concept-based explanations, which not only explained why things are the way they are, but explained it in a way which used reason instead of narrative, which used abstractions instead of concrete details.

In some situations, it is possible for myth-based and logos-based explanations to coexist. A true myth can give a specific and historical narrative to explain a certain state of affairs, while philosophy can explain the same state of affairs conceptually.

1.1.10   What Existentialism Might Be: From Kierkegaard to Sartre (2022-01-13 07:47)

The word 'existentialism' appears often in writings of the twentieth and twenty-first century. The frequency of its use is one of several reasons for its ambiguity. The word began to be used regularly in the 1920s and 1930s, and its appearances multiplied even more in the postwar decades.

While each author who uses the word seems to be confident about what it means, the kaleidoscope of usages does not allow for a clear meaning. A near-infinite collection of quotations about which authors are, or are not, existentialists would yield a mass of contradictions.

Alasdair MacIntyre writes:

> Existentialism is not easily definable. Its protagonists have traced it back to Pascal, to St. Augustine, even to Socrates. It has been alleged in our time to be the doctrine of writers as various as Miguel de Unamuno and Norman Mailer. At first sight, characteristics of the doctrine are almost as various. That two writers both claim to be existentialists does not seem to entail their agreement on any one cardinal point. Consequently, to define existentialism by means of a set of philosophical formulas could be very misleading. Any formula sufficiently broad to embrace all the major existentialist tendencies would necessarily be so general and so vague as to be vacuous, for if we refer to a common emphasis upon, for example, the concreteness of individual human existence, we shall discover that in the case of different philosophers this emphasis is placed in contexts so dissimilar that it is put to quite different and incompatible uses. How then is existentialism to be defined?

Yet MacIntyre bravely ventures forth to attempt some semblance of a definition. Voluntarism is a common theme among those who are frequently labeled as existentialists.

> If any single thesis could be said to constitute the doctrine of existentialism, it would be that the possibility of choice is the central fact of human nature. Even the thesis that existence precedes essence often means no more than that people do not have fixed natures that limit or determine their choices, but rather it is their choices that bring whatever nature they have into being. As existentialists develop this thesis, they are involved in at least three separate contentions.

The theme of voluntarism runs through, and loosely connects, the writings of thinkers like Kierkegaard, Dostoyevsky, Ibsen, and Dickens. In each, individuals are seen as making choices, or exhorted to make choices, with the awareness that the choices of individuals are significant.

This aspect of existentialism can perhaps be highlighted by contrasting it with those thinkers who oppose it. In the writings of Marx, Freud, Darwin, and sometimes Nietzsche, there is a certain mechanism or determinism which either denies choice to the individual, or minimizes its significance.

Maybe one could attempt to define existentialism by what it opposes. Marx argues that the individual human is the passive object which the grand forces of history and economics toss about like a cork on the ocean's waves. Freud hypothesized that an individual's thoughts and emotions were determined by experiences. Darwin constructed a system which saw choices as issuing from being who is the product of the impersonal forces of chemistry and physics.

Existentialism could be seen as a response to, or reaction against, Marx, Freund, Darwin, and similar thinkers. On the other hand, Kierkegaard, often cited as the father of existentialism, largely predated them.

By contrast, the existentialists would argue that human beings make numerous choices. Even when these choices seem to be dictated by a relatively rigid value system, that value system itself was chosen by the individual. These choices are not determined in any calculable way; therefore, any analogy to chemistry or physics is rejected.

This emphasis on choice is accompanied by a fondness, among at least some existentialist writers, for the words "free" and "freedom."

Alasdair MacIntyre explains:

> The first is that choice is ubiquitous. All my actions imply choices. Even when I do not choose explicitly, as I may not do in the majority of cases, my action bears witness to an implicit choice. The second contention is that although in many of my actions my choices are governed by criteria, the criteria which I employ are themselves chosen, and there are no rational grounds for such choices. The third is that no causal explanation of my actions can be given.

These partial hints about what existentialism might be, or about how the word 'existentialism' might be defined, notwithstanding, it remains difficult to answer questions like "Is Martin Heidegger an existentialist?" or "What does existentialism say about the afterlife?"

Existentialism is a construct, not a primary source. As such, it is of secondard concern relative to the actual texts of individual thinkers. Jean-Paul Sartre once famously remarked, "Existentialism? I don't know what that is. My philosophy is a philosophy of existence."

The best and wisest route for scholarship is to treat each thinker as an individual, and to examine each thinker by means of the close reading of that philosopher's texts.

1.1.11 Logical Positivism: The Influential if Unloved Innovations of the Vienna Circle
(2022-01-12 13:16)

During the first half of the twentieth century, several major philosophical trends shaped the era's significant thought. One of those movements is known by at least three names: Logical Positivism, Logical Empiricism, the Vienna Circle. These three names are almost synonymous, with only slight differences between them.

The Vienna Circle was a group of philosophers and other thinkers who met on a regular basis, discussing and publishing, in the city of Vienna during the 1920s and 1930s. While Vienna was

the location of the earliest and most influential developments within this movement, Berlin and other cities were also important locations for the development of Logical Empiricism.

Movements are by nature ambiguous at their boundaries, and Logical Positivism is no exception. It is impossible to identify precise starting and ending points in time for this movement. It is not always clear which philosophers were part of the movement, and which ones were merely similar to, or associated with, the movement. Despite this vagueness, and despite the fact that movements are always constructs and not specific data points, it is nonetheless meaningful and useful to speak of Logical Positivism.

What is Logical Positivism? A definition or description of the movement would include these points: It is heavily empirical; it is anti-metaphysical; it takes physics and mathematics as paradigmatic for knowledge; it seeks to clarify philosophical questions by analysis of the words and propositions used to formulate those questions; its understanding of language is encapsulated in the slogan "The meaning of a word or sentence is the method of its verification."

Each point in that definition requires considerable expansion.

Writing in 1969, Herbert Feigl explains:

> Logical positivism began to form a fairly definite outlook in philosophy about forty years ago. As is well known, it was primarily the influence of Ludwig Wittgenstein and Rudolf Carnap that initiated the early phase of this — then new and radical — departure from the traditional ways of philosophizing. To be sure, some aspects of logical positivism are derived historically from Hume and Comte; but, in contrast, especially to Mill's positivism, a new conception of logic (having its origins in Leibniz, Frege, and Russell) was united with the empiricism of Hume, Mach, and the early Einstein.

When Logical Positivism is described as heavily empirical, it means that the movement took observation to be the foundation of most knowledge.

As an anti-metaphysical movement, it considered words and sentences which refer to nonobservable things to be not wrong, but nonsensical. Thus the movement would consider a discussion of the mind, as separate from the brain, to be nonsense.

Because it takes physics and mathematics as paradigmatic for knowledge, it tends to favor what is quantifiable and measurable in observation. It looks to mathematics, and mathematical logic, to provide a framework in which observations can be organized.

The group sought to resolve philosophical paradoxes — longstanding questions, riddles, mysteries — by analyzing the words and sentences which formulated them. The Logical Positivists thought that many problems which had puzzled philosophers for years were the result of poorly-phrased propositions.

The method by which the Logical Positivists hoped to clear up philosophical misunderstandings — or what they took to be misunderstandings — was called "verificationism." This method looked at a sentence — a proposition — and asked: by which procedure would it be determined whether this sentence is true or false? If such a method were found, then the Logical Positivists asserted that the method is the meaning: The meaning of a sentence is the method of its verification.

Herbert Feigl was a member of the Vienna Circle, and recalls:

The Vienna Circle consisted mainly of scientifically trained philosophers and philo-
sophically interested mathematicians and scientists. Most of the members were
tough-minded thinkers, *Weltzugewandt* (as Hans Hahn put it), 'this-worldly' rather
than 'other-worldly.' They were radically opposed to metaphysical speculation, espe-
cially of the a priori and transcendent types. Since the development of the Vienna
Circle is by now a familiar chapter in the history of recent philosophy, I propose, after
dealing with some of the antimetaphysical doctrines of logical positivism, to concen-
trate on some of the aspects that are not as well known. I shall refer particularly to
the work of Moritz Schlick, the founder and leader of the Vienna Circle. Schlick's early
work anticipated a good deal of what in more precise formulations was later devel-
oped by Carnap, Reichenbach, and others. In his *Allgemeine Erkenntnislehre* (first
edition, 1918; second edition, 1925) there were also anticipations of some of the cen-
tral tenets of Wittgenstein's *Tractatus Logico-Philosophicus*. I think it was Schlick's
extremely unassuming character, his great modesty and kindliness, and his deep
personal devotion to Wittgenstein that made him forget or suppress the great extent
to which his views, independently developed and quite differently stated, already
contained very important arguments and conclusions regarding the nature of logical
and analytic validity; the semantic explication of the concept of truth; the difference
between pure experience (*Erleben*), acquaintance (*Kennen*), and genuine knowledge
(*Erkennen*), etc. Indeed, so deeply impressed was Schlick with Wittgenstein's genius
that he attributed to him profound philosophical insights which he had formulated
much more lucidly long before he succumbed to Wittgenstein's almost hypnotic spell.

The methods and assertions of Logical Positivism arose, in part, as reactions against some
overly metaphysical trends among other groups of philosophers, like the British Idealists and
other neo-Hegelian and post-Hegelian schools of thought. Logical Positivism may have served
as a corrective and as a challenge to such idealism.

While there was value in not letting idealism go uninspected, it is also the case that, after the
movement's heyday in the late 1930s, there are few self-proclaimed Logical Positivists among
the philosophers of the early twenty-first century.

1.1.12   Categorizing the Pre-Socratics (2022-01-02 11:56)

For a century or two, beginning with the work of Thales, Greek philosophy flourished, and
flourished mainly outside of Greece, for philosophy was born primarily in the colonies belonging
to Greece, and not in Greece itself. Thales began his work around 600 B.C.; it is impossible to
specify a more precise date.

Thales was the first of a large group of pre-Socratic philosophers, scattered across the Mediter-
ranean world and across many decades. This group contained a broad range of methods and
views, and influenced nearly all subsequent philosophizing.

It is understandable and predictable that scholars would hope to organize these foundational
thinkers into groupings. In the conflict between psychology and philosophy, the human mind
naturally tends to look for patterns and categories, even when there might be none.

In the face of any proposed taxonomy of pre-Socratic philosophers, one must ask whether such
a classification is valid, and what the evidence for it might be.

Examining what was, at one time, the standard classification of these thinkers, Eduard Zeller
explores it and finds it wanting. This accepted classification divided the pre-Socratic philoso-
phers into four groups, the Ionian, the Pythagorean, the Eleatic, and the Sophic. The Ionian

and Eleatic groups were named geographically after Ionia and Elea; the Pythagorean group was named after the philosopher Pythagoras; the Sophic group's name is derived from the Greek word for wisdom.

> Man pflegte früher in der vorsokratischen Zeit vier Schulen zu unterscheiden: die ionische, die pythagoreische, die eleatische und die sophistische. Den Charakter und das innere Verhältnis dieser Schulen bestimmte man teils nach dem Umfang, teils nach dem Geist ihrer Untersuchungen.

This commonly-accepted taxonomy of the pre-Socratics grouped them partially with reference to the scope and range of their philosophical topics, and partially with reference to their spirit and way of thinking.

Eduard Zeller argues that identifying certain groups with particular themes — the Ionians with physics, the Pythagoreans with ethics, the Eleatics with dialectics, and the Sophists with the decline of these narrow specialties and rise of a more comprehensive systematic approach — is problematic. It represents a retrojection of the three branches of classical Greek philosophy — ethics, physics, and dialectic — onto an earlier, pre-classical era. An additional anachronism is this interpretation's reading into the Sophists a desire for a unified systematic philosophy.

> Was den Umfang betrifft, so wurde als die unterscheidende Eigentümlichkeit der vor-sokratischen Periode die Vereinzelung der drei Zweige bezeichnet, die später in der griechischen Philosophie verknüpft sind: von den Ioniern, sagte man, sei die Physik einseitig ausgebildet worden, von den Pythagoreern die Ethik, von den Eleaten die Dialektik, in der Sophistik sehen wir die Entartung und den Untergang dieser einseit-igen Richtungen, die mittelbare Vorbereitung einer umfassenderen Wissenschaft.

Although Zeller doesn't state this explicitly, it is likely that he also discounted the received interpretation of the pre-Socratics into four schools because it relied in part on the accident of geography. To assume that merely being colocated in Ionia meant that the Ionian philosophers together formed a school, or that the same was true of those who happened to be in or near Elea, is *a priori* questionable. The entire project of organizing groups of philosophers into "schools" smacks rather of the Hellenistic Era, and would therefore constitute a retrojection when applied to the Archaic or Pre-Classical Era.

Zeller further identifies a weakness in the standard taxonomy of the pre-Socratics by noting that not only is the accident of geography taken as the foundation for common approach to philosophy among those who happen to be spatially near each other, but rather also a sort of ethnic identity is given to these schools, inasmuch as the conventional taxonomy termed the Ionian philosophy to be "realistic" and the Dorian philosophy to "idealistic."

> Dieser Unterschied der Richtungen wurde dann weiter mit dem Stammesunter-schiede des Ionischen und des Dorischen in Verbindung gebracht; andere legten den letztern ihrer ganzen Betrachtung der älteren Philosophie zugrunde, indem sie aus den Eigentümlichkeiten des ionischen und des dorischen Charakters den philosophis-chen Gegensatz einer realistischen und einer idealistischen Weltanschauung ableit-eten.

In this context, Dorian is taken to refer both to parts of mainland Greece as well as the colonies located in Italy and on the islands near Italy, whereas Ionia refers to the western coast of Turkey (i.e., Asia Minor or Anatolia).

As used here, the words 'idealistic' and 'realistic' refer to varying emphases. In this sense, 'idealistic' philosophy emphasizes thoughts, patterns, and principles, which 'realistic' philosophy would emphasize concrete objects and events.

In any case, Zeller is rightly skeptical of a too-tidy pigeonholing of pre-Socratic philosophers into various schools. Such categorizing hides the individual creativity and inventiveness of each of these clever and perceptive thinkers.

2. 2021

2.1 December

2.1.1 Boltzmann on Time: Directionality and Entropic States (2021-12-03 16:04)

The intuitive world of phenomena is generally, if not always, perceived as four-dimensional. The dimension of time differs from the three dimensions of space in that it is directional. One can travel between two spatial points in either order: from A to B, or from B to A.

But between two temporal points, one can, and usually must, travel only in one direction: from earlier to later, and never from later to earlier. How is this distinctive feature of time to be understood?

Ludwig Boltzmann looks to the second law of thermodynamics to understand time's directionality. He argues that the move from order to disorder does not occur with time, but rather that this move is time, or rather, that it determines the direction of time.

Boltzmann further asks about the implications of time's directionality. If one can travel through time in only one direction, then is the set of possible events limited or conditioned by this fact? In his words,

> Is the apparent irreversibility of all known natural processes consistent with the idea that all natural events are possible without restriction? Is the apparent unidirectionality of time consistent with the infinite extent or cyclic nature of time? He who tries to answer these questions in the affirmative sense must use as a model of the world a system whose temporal variation is determined by equations in which the positive and negative directions of time are equivalent, and by means of which the appearance of irreversibility over long periods of time is explicable by some special assumption. But this is precisely what happens in the atomic view of the world.

The universe, which according Boltzmann is on average in equilibrium, can contain local regions which, apparently spontaneously, move themselves into a state of disequilibrium. His view of the universe is, in part, his gas theories writ large. His conception of the universe could be understood as vaguely analogous to Brownian motion: galaxies vibrating rather randomly and spontaneously.

From this notion of the universe, Boltzmann sees the directionality of time, and perhaps time itself, as arising from pockets of disequilibrium. Time, and its direction, is the flow from a state of more disequilibrium to a state of less disequilibrium.

Boltzmann is, in effect, reversing the priority of the second law of thermodynamics: It is not the case, according to him, that a system moves within time, or through time, from a state of less entropy to a state of more entropy; rather, he seems to be saying that it is the move from one state to another which gives directionality to time, and perhaps even gives rise to time itself.

> One can think of the world as a mechanical system of an enormously large number of constituents, and of an immensely long period of time, so that the dimensions of that

part containing our own "fixed stars" are minute compared to the extension of the universe; and times that we call eons are likewise minute compared to such a period. Then in the universe, which is in thermal equilibrium throughout and therefore dead, there will occur here and there relatively small regions of the same size as our galaxy (we call them single worlds) which, during the relative short time of eons, fluctuate noticeably from thermal equilibrium, and indeed the state probability in such cases will be equally likely to increase or decrease. For the universe, the two directions of time are indistinguishable, just as in space there is no up or down. However, just as at a particular place on the earth's surface we call "down" the direction toward the center of the earth, so will a living being in a particular time interval of such a single world distinguish the direction of time toward the less probable state from the opposite direction (the former toward the past, the latter toward the future). By virtue of this terminology, such small isolated regions of the universe will always find themselves "initially" in an improbable state. This method seems to me to be the only way in which one can understand the second law — the heat death of each single world — without a unidirectional change of the entire universe from a definite initial state to a final state.

Boltzmann argues that the direction of time is relative: to call a particular movement through time "forward" is merely a matter of perspective; another observer might call it "backward." The direction of time is an indexical: to move "toward the future" or "toward the past" is like moving "to the right" or "to the left" — one observer's "right" is another observer's "left."

As Lawrence Sklar has pointed out, Boltzmann even leaves room for the scenario in which different local pockets of disequilibrium might have their own times running in opposite directions. This would be within the larger framework of the universe as a whole, which Boltzmann seems to view as literally timeless, having no time because it is in a state of equilibrium.

Time, then, according to Boltzmann, is secondary, and contingent upon the primary appearance of local pockets of disequilibrium. Boltzmann has some explaining to do: how and why would these local pockets of disequilibrium randomly and spontaneously appear?

> Obviously no one would consider such speculations as important discoveries or even — as did the ancient philosophers — as the highest purpose of science. However it is doubtful that one should despise them as completely idle. Who knows whether they may not broaden the horizon of our circle of ideas, and by stimulating thought, advance the understanding of the facts of experience?

On Boltzmann's account, it could be that a pocket of disequilibrium would appear in the midst of a universe in equilibrium: this would constitute time moving backward, as it were. If that pocket of disequilibrium, in its process of moving toward equilibrium, would halt, that would amount to time standing still. If that process of moving toward equilibrium were subject to occasional relapses in which there was a temporary movement back to disequilibrium, this would amount to time repeatedly changing its direction.

Further, Boltzmann's view might entail that within the one universe there could be various disparate pockets of disequilibrium, and these sundry pockets could have times which are moving in different directions. Simply put, in one part of the universe, time could move in a direction opposite to the way it's moving in another part of the universe.

> That in nature the transition from a probable to an improbable state does not take place as often as the converse, can be explained by assuming a very improbable

initial state of the entire universe surrounding us, in consequence of which an arbitrary system of interacting bodies will in general find itself initially in an improbable state. However, one may object that here and there a transition from a probable to an improbable state must occur and occasionally be observed. To this the cosmological considerations just presented give an answer. From the numerical data on the inconceivably great rareness of transition from a probable to a less probable state in observable dimensions during an observable time, we see that such a process within what we have called an individual world — in particular, our individual world — is so unlikely that its observability is excluded.

Boltzmann's notion that time is not merely the framework within which the second law of thermodynamics plays out, but rather that the very movement from disequilibrium to equilibrium is itself time, and sets the direction of time, is thought-provoking and worth consideration.

His claim, however, that pockets of disequilibrium might suddenly, spontaneously, and randomly appear within a universe which is in equilibrium is a bold claim, for which he offers no argumentation, the vague analogy to Brownian motion, and other phenomena within physical chemistry notwithstanding.

2.2 November

2.2.1 Metaphysics: What Is It? (2021-11-28 16:44)

What is metaphysics? How do people use the word 'metaphysics'? Those two questions are closely related. Metaphysics is a branch of philosophy which deals with things, events, and processes which are not physical.

The word 'metaphysics' has its origin in the Greek language and is quite old, as Roger Hancock writes:

> The word *metaphysics* derives from the Greek *meta ta physika* (literally, "after the things of nature"), an expression used by Hellenistic and later commentators to refer to Aristotle's untitled group of texts that we still call the *Metaphysics*. Aristotle himself called the subject of these texts first philosophy, theology, or sometimes wisdom; the phrase *ta meta ta physika biblia* ("the books after the books on nature") is not used by Aristotle himself and was apparently introduced by the editors (traditionally by Andronicus of Rhodes in the first century B.C.) who classified and cataloged his works.

One aspect of metaphysics is that it deals with things that are not directly known or perceived by the five senses (sight, hearing, taste, smell, touch). By contrast, physics deals with things that can be detected by those five senses. Newtonian physics deals with falling objects, accelerating object, etc., which can be rocks or automobiles or planets, all of which can be discerned by the five senses.

Even relativistics physics, subatomic physics, and quantum physics can be verified by the senses, although not directly. Roger Hancock continues:

Later, classical and medieval philosophers took this title to mean that the subjects discussed in the *Metaphysics* came "after the things of nature" because they were further removed from sense perception and, therefore, more difficult to understand; they used Aristotle's frequent contrast of things "prior and better known to us" with things "prior and better known in themselves" to explain why the treatises on first philosophy should come "after the books on physics." In medieval and modern philosophy "metaphysics" has also been taken to mean the study of things transcending nature — that is, existing separately from nature and having more intrinsic reality and value than the things of nature — giving *meta* a philosophical meaning it did not have in classical Greek.

Metaphysics is in one way or another dualistic, because it supposes two levels of reality: a physical dimension and a non-physical dimension. Sometimes, metaphysicians are tempted to ascribe more importance, more value, or more reality to one of those levels over the other. Other metaphysicians are content to allow both levels to exist side-by-side as equals.

If metaphysics is the study of things that can't be perceived by the five senses, then the question arises: How does one learn about those things?

Immanuel Kant (1724 - 1804) distinguishes between two types of knowledge: *a prior* and *a posteriori*. The phrase *a priori* means "from before" in Latin, and refers to knowledge that is gained prior to the experiences gained from the five senses. For example, arithmetic is considered an *a priori* body of knowledge, because without sight, hearing, smell, taste, and touch, it is still possible to learn that $7 + 5 = 12$. On the other hand, botany would be an *a posteriori* body of knowledge, because it is necessary to see and touch and smell and taste plants in order to know them.

> Especially since Immanuel Kant *metaphysics* has often meant a priori speculation on questions that cannot be answered by scientific observation and experiment. Popularly, "metaphysics" has meant anything abstruse and highly theoretical — a common eighteenth-century usage illustrated by David Hume's occasional use of *metaphysical* to mean "excessively subtle."

In non-philosophical and non-academic usages, the word 'metaphysics' is used to deal with a variety of things, from serious spirituality to the quackery of reading tarot cards. It is necessary to distinguish between such popular usages on the one hand, and other the other hand, usages which are philosophical and academic.

> The term has also been popularly associated with the spiritual, the religious, and even the occult. In modern philosophical usage *metaphysics* refers generally to the field of philosophy dealing with questions about the kinds of things there are and their modes of being.

Within metaphysics, the subdiscipline of ontology deals with questions about different kinds of being, and about which things exist and which ones don't.

Upon reflection, things which cannot be discerned by the five senses are usually thought to be things which are composed of matter or energy or some mixture of the two. If one were to take the universe as it is, and remove all matter and energy, then whatever would remain would be metaphysical things.

Further analysis of these concepts yields the conclusion that metaphysical things are outside of space and time. Things often thought to be metaphysical are minds, memories, ideas, numbers, and shapes.

To better understand, it can be helpful to examine these things in pairs: A brain is a physical thing; a mind is a metaphysical thing. A numeral, which can be seen or heard, is a physical thing; a number is a metaphysical thing.

Blue paint, blue ink, blue cars, and blue jeans are physical things; the color blue by itself is a metaphysical thing.

The discipline of metaphysics borders on, and overlaps slightly with, some other subdisciplines within philosophy. Epistemology is the study of how, not what, can be known; to ask about how metaphysical things are known is to be on the borderline between metaphysics and epistemology.

Likewise, to ask about the existence of numbers is to be on the borderline between metaphysics and the philosophy of mathematics.

> Its subject matter includes the concepts of existence, thing, property, event; the distinctions between particulars and universals, individuals and classes; the nature of relations, change, causation; and the nature of mind, matter, space, and time. In the eighteenth and nineteenth centuries *metaphysics* was used broadly to include questions about the reality of the external world, the existence of other minds, the possibility of a priori knowledge, and the nature of sensation, memory, abstraction, and so on. In present usage these questions are included in the study of epistemology.

The field of metaphysics has a long and varied history. Most of those who are routinely listed as significant philosophers engaged in metaphysical thought and left their marks on the field of metaphysics.

2.2.2 Confucius and Aristotle: Not Quite Independent Confirmation, But Close (2021-11-25 12:21)

In observational and experimental sciences, especially natural sciences, replicable and reproducible results are considered to be a part of the justification of a hypothesis or theory. While this is less the case in the social or political philosophy, it is still worth noting when two philosophers, separated by thousands of miles and several centuries, arrive at similar conclusions.

These two philosophers were also not aware of each other's work.

Confucius was born around 551 B.C., and died in 479 B.C., having spent his entire life in China. Aristotle was born around 384 B.C., and died in 322 B.C., having lived in Greece, or on one its small coastal islands. Both of them investigated a variety of topics, including an analysis of the structures of society.

As a huge number of different chemical compounds can made from a small number of elements — say, oxygen, carbon, hydrogen, and nitrogen — , and as variety of structures and machines can be made from a small number of simple materials like iron, wood, and stone, so also, both Confucius and Aristotle reasoned, the many and varied structures in society might be made up of a few basic relationships.

Aristotle posited that there were three atomic relationships out of which society is constructed: employer and employee, husband and wife, parent and child. A complex relationship like "son-in-law" is built by adding "parent and child" to "husband and wife." Another complex relationship like "grandparent" would be the product of doubling "parent and child." He writes:

> Seeing then that the state is made up of households, before speaking of the state we must speak of the management of the household. The parts of household management correspond to the persons who compose the household, and a complete household consists of slaves and freemen. Now we should begin by examining everything in its fewest possible elements; and the first and fewest possible parts of a family are master and slave, husband and wife, father and children. We have therefore to consider what each of these three relations is and ought to be.

A century or so before Aristotle, Confucius had come to a similar conclusion. He thought that there were five basic relationships in society: ruler and subject, parent and child, sibling and sibling, husband and wife, friend and friend. A complex relationship like "cousin" would be a combination of "parent and child" and "sibling and sibling."

Describing Confucius's thought, Wing-Tsit Chan writes:

> Raising the growing humanistic tendency to a greater height than before, he talked about life instead of death and about man rather than spiritual beings. He declared that "it is man that can make the Way great and not the Way that can make man great." For him the ideal is the harmony of the perfect individual and a well-ordered society based on the mutual moral obligations of the five human relations between ruler and minister, father and son, elder brother and younger brother, husband and wife, and one friend and another, with filial piety and brotherly respect as the two fundamental virtues. Government is to be conducted through the ruler's moral examples, and religious ceremonies are to fulfill moral duties. Confucius sharply contrasted the superior man, whose standard is moral principle, with the inferior man whose standard is profit. In short, his whole doctrine can be summed up as ethical humanism.

The startling similarities between Aristotle's and Confucius's analyses of society merit study. While their independent conclusions do not guarantee their correctness, they do point to some common element in the rational investigation of human social structures.

(The Aristotle text was quoted from his *Politics*, Book 1, Chapter 3, 1253b1.)

2.3 October

2.3.1 Maxwell and Faraday: A Curious Synergy (2021-10-13 10:41)

In a long and noble history, various thinkers have worked to formulate what many textbooks now call "sources of experimental error." In the ancient world, Augustine, foreshadowing Kant, pointed out that human reason, while powerful, also has limits.

In 1620, Francis Bacon described four common patterns in inductive thought — patterns which lead to errors.

Michael Faraday, whose discoveries in electromagnetism have made possible much of the technology which has shaped the twentieth and twenty-first centuries, based his understanding of experimental error on his engagement with Sandemanian or Glasite thought. Faraday, throughout his scientific career in the 1800s, preached on Wednesday evenings at his Sandemanian church, as historian Alan Hirschfeld notes:

> The philosophical and behavioral strictures of the Sandemanians served to channel Faraday's abundant energy toward his scientific pursuits. In particular, the Sandemanian belief in human fallibility permitted him to fearlessly explore frontiers of science, with full knowledge that some of his conjectures would be overturned. There was no purpose in hitching his ego to the correctness of his conclusions. Faraday noted Job's admonition in his personal Bible: "If I justify myself, mine own mouth shall condemn me; if I say, I am perfect, it shall also prove me perverse" (Job 9:20).

Among Faraday's achievements was the framing of various electromagnetic phenomena in the concept of fields. Seeing magnetism as a field, not as a substance, was revolutionary, as Ian Hutchinson writes:

> In this abbreviated summary of Faraday's scientific achievements, one cannot omit his extremely influential, and initially highly unconventional championing of the significance of *fields*. Physics today sees the field of force rather than the material substance as the underlying reality. Faraday's theoretical and philosophical intuition, growing over twenty years or more throughout his experimental research, and culminating in his paper "On the physical character of lines of force" (1852), was, in the opinion of many, his most influential legacy. A young James Clerk Maxwell certainly took him seriously. His mathematization of Faraday's ideas led directly to what we now call Maxwell's equations of electromagnetism.

Maxwell was Faraday's intellectual heir. The two complemented each other. Faraday's work was intuitive or conceptual: his laboratory notebooks contain sketches and drawings, and written descriptions, but not equations. Faraday's image-oriented way of doing physics was fertile ground for his innovation of seeing electromagnetic forces as fields. Maxwell can be seen as mathematizing Faraday's work.

Faraday's work formed a basis for Maxwell's. But Maxwell was not a Sandemanian. Maxwell was ordained as an Elder in the Church of Scotland, i.e., in the Presbyterian Church.

Faraday was an Englishman; Maxwell a Scotsman. The Sandemanian Church began in Scotland.

Combining, on the one hand, a conceptual and intuitive approach, with, on the other hand, a bold humility which allowed him to question established scientific dogmas which viewing his own hypotheses as equally liable to be overturned, Faraday presented a new way of thinking about electromagnetic forces. Maxwell capitalized on Faraday's insights, formulating them into mathematically rigorous statements.

2.4 August

2.4.1 Plato and Mathematics: Numbers or Numerals? (2021-08-13 13:26)

In the familiar distinction between numbers and numerals, numerals are detectable by the senses: sight if a person is reading, sound if a person is listening, and touch if a person is using

Braille. Numerals are physical phenomena: even a number on an LCD or LED computer screen is a physical manifestation.

Numbers, by contrast, are not physical, and not directly detectable by the senses. Numbers are ideas. Numerals refer to numbers. Numerals are the names for numbers. The English numeral *one*, the German numeral *eins*, and the French numeral *un* all refer to the same number.

So what kind of a thing is a numeral, if it's not physical? This question has occupied philosophers for more than 2,000 years.

In Greece, Plato began wrestling with this question around 300 B.C., and later philosophers who embraced and refined his ideas asserted that numbers are metaphysical objects. What are metaphysical objects? They're non-physical objects.

Normally, one thinks of objects, or things, as physical — as detectable by the human senses (sight, sound, taste, touch, and smell).

But those philosophers who argue for the existence of metaphysical objects would point to things like ideas, memories, emotions, and minds as being objects. A person can ask for five pounds of anger, or two gallons of childhood memories — metaphysical objects aren't measured in the way in which physical objects are.

So, according to the Platonists, numbers can be referred to as 'things' or 'objects.' But they are a different kind of thing or object than, e.g., a sandwich or a tree.

The Platonic understanding of numbers is called 'realist' because the Platonists believe numbers to be as real as any physical object. The Platonic view is also called 'dualist' because Platonic philosophers assert that there are two types of reality — the physical and the metaphysical — both of which are different and both of which are real.

The dualist view can be extended from numbers to geometry. The dualists would argue that the circles, triangles, points, and lines in a geometry textbook are merely physical symbols for the idea of circles, triangles, points, and lines.

Opposed to the Platonists are other philosophers, called 'formalists' and 'conventionalists' — they argue that numerals do not refer or represent numbers. Rather, they argue that numerals are part of a system of symbol manipulation, a system called 'arithmetic' or 'mathematics.'

These anti-Platonists argue that there is no deeper, higher, or mystical reality beyond the symbols called 'numerals' — that the numerals are the numbers.

In this debate, each side has its reasoning: The Platonists say that, in order for mathematics to have any meaning, it must be "about" something, that it can't simply be patterns of ink on paper; the Platonists argue that the anti-Platonist view would reduce mathematics to meaninglessness, and daily experience in practical application shows that mathematics has real meaning.

The anti-Platonists, meanwhile, argue that for practical purposes, mathematics works: it allows people to build bridges or calculate interest or keep score at a game. If it works, the anti-Platonists say, then that's all that is needed from mathematics: there is no need for any deeper meaning. The anti-Platonists accuse the Platonists of violating a rule of logic called 'Ockham's Razor.'

William of Ockham, sometimes spelled Occam, was a logician who worked around 1300 A.D., and was mildly anti-Platonist. He wrote:

> *Numquam ponenda est pluralitas sine necessitate.*

Which is roughly:

> Plurality must never be posited without necessity.

With regard to mathematics, this would mean that there is a choice between two systems: one system has both numbers and numerals, while the other system has only numerals. Ockham might advise that, if the simpler system works, it should be chosen.

In another formulation, Ockham wrote:

> *Frustra fit per plura quod potest fieri per pauciora.*

Which can be rendered as:

> It is futile to do with more things that which can be done with fewer.

Ockham's Razor is sometimes phrased this way: "Entities should not be multiplied beyond necessity."

In any case, Ockham's logic is part of the debate about the reality of numbers.

The question of the reality of numbers is a discussion which taps into multiple levels of philosophical questioning. The first question is: Are numbers independently-existing objects? The second question is a broader form of the first question: Are there really any non-physical or metaphysical objects? The third question asks about how the truth of a statement is evaluated, in this case, the truth of a statement about numbers: Is a proposition true if it works in a pragmatic sense, to calculate in real-life situations, or is it true if it represents the way things actually are?

2.5   July

2.5.1   Consent, Free Will, and Thought Control (2021-07-09 09:32)

For centuries, philosophers have pondered questions about the human "free will" and what it might mean. Much has been written about the topic.

During the second half of the twentieth century, psychologists began to explore the phenomenon of mind control, also called "thought control," behavior change technology, compliance-gaining influence, thought reform, psychosocial manipulation, and a few other other terms.

Whatever words are used to label it, the question is whether the psychological exploration of thought control is relevant to the philosophical debate about free will. Part of that debate is whether, and how, a person's desires, especially desires leading to actions, are determined.

The techniques of thought control allow the practitioner to shape another individual's desires and beliefs, without the individual's being aware of it. On a low level, this can be, e.g., advertising on television. On a higher level, it can be "brainwashing" which changes a person's foundational beliefs.

The discussion of free will, obviously, enters into the field of ethics at some point. There are those who, e.g., argue that prostitution is permissible if all involved parties are consenting.

But how does one understand the word 'consent' in the framework of thought control? A prostitute might say that she or he is voluntarily engaging in this activity, and has freely consented to it. If, however, the beliefs and desires which cause the prostitute to consent were installed into the mind of the prostitute without the prostitute's knowledge or consent, then can it be said that the prostitute is truly consenting?

Note that, in this scenario, the prostitute is not coerced. The prostitute believes that she or he is freely consenting. But can consent be 'free' if it is implanted into the mind from the outside, and implanted without the knowledge or awareness of the individual? The prostitute may believe that she or he is freely consenting, but that belief itself may have been artificially installed into the prostitute's mind.

In any case, it is plausible to suggest that some aspects of the "free will" debate may need to be revisited in light of psychological research about thought control.

In 1961, Robert J. Lifton published *Thought Reform and the Psychology of Totalism*. In 1957, Robert J. West, et al., published *Brainwashing, Conditioning, and DDD (Debility, Dependency, and Dread)*. In 1961, Edgar Schein published *Coercive Persuasion: A Socio-Psychological Analysis*. Steven Hassan has published several books on the subject.

Philosophers engaged in the topic of "free will" would be well advised to explore these writings.

When beliefs and desires are installed into the mind of an individual without that individual's awareness or consent, how do those beliefs and desires differ from normal beliefs and desires? How do beliefs and desires normally arise in the mind of an individual? If beliefs and desires are involuntary and ineluctable in normal situations, are they different in any significant way from the beliefs and desires installed by means of thought control?

2.6   June

2.6.1   Contested Kant: Disputing Kant's Impact on Theism (2021-06-15 09:41)

Immanuel Kant's *Kritik der Reinen Vernunft* affected both philosophical thought directly, and more general cultural trends indirectly: about this there is no doubt. But the character of this effect has been debated.

Kant and his writings have been seen variously as champions of theism and as destroyers of faith. Was the net impact of his texts to solidify belief in God as a solidly rational viewpoint, or to undermine any rational foundation for theism?

Norbert Hinske documents both hypotheses. Hinske identifies Moses Mendelssohn as an originator of the view that Kant's *Critique of Pure Reason* poses a threat to theism:

> Für Mendelssohn, der aufgrund seiner Krankheit Kants Werk freilich nur vom Hörensagen kennt - „aus unzulänglichen Berichten meiner Freunde oder aus gelehrten Anzeigen, die selten viel belehrender sind" -, ist die *Kritik* also ein Werk, das alle „vernünfitgie Erkenntniß Gottes" zu zerstören droht.

Mendelssohn's view was amplified and transmitted through the writings of Ludwig Ernst Borowski:

Mendelssohns Rede vom „alles zermalmenden Kant" hat Karriere gemacht. Schon Borowski erwähnt sie 1804 in seiner immer wieder nachgedruckten Kantbiographie. Zum Substantiv verschärft, ist das Wort vom Alleszermalmer dann zu einer der geläfigsten Charakterisierungen Kants avanciert.

This view of Kant seeped from the world of academic philosophy to a broader audience through, e.g., the writings of Heinrich Heine, who echoed the words of Mendelssohn and Borowski, and saw Kant as a destroyer of faith and hope.

On the other hand, Hinske describes the early Kantians at the University of Jena, who saw Kant as the defender of theism. In the *Kritik*, Kant finds arguments for and against the existence of God to be futile, because reason is based on, or arises from, the forms of perception. God is not a perception, i.e., not a phenomenon, but rather a thing-in-itself: a *Ding-an-sich*. As a noumenon, God is not subject to the type of reasoning which is based on the forms of phenomena.

The early Kantians at Jena, philosophers and theologians, saw Kant as constructing a defense of theism against any allegedly rational arguments for atheism. If one accepts Kant as he expresses himself in the first *Kritik* and other writings, then one cannot countenance arguments against the existence of God.

Two centuries later, Kant remains a mixed picture. Perhaps the reason for conflicting readings of the *Kritik* is that, on the one hand, Kant removes the possibility of rational argumentation from both sides: he will accept no line of reasoning which hopes to establish either atheism or theism. He places the existence of God as a question which is beyond pure reason. It is such points in Kantian thought which later give a starting point to Schopenhauer and postmodernism in the sense of post-rationalism.

On the other hand, Kant famously points to the existence of God as a necessary hypothesis in the second *Kritik*. But Kant finds his way to God in the *Kritik der Praktischen Vernunft* in a manner that disappoints both theists and atheists. The atheists are unhappy that Kant has pointed to the necessity of God's existence, but the theists are also unhappy, because Kant doesn't leave room to prove that God has the robust collection of metaphysical characteristics of traditional theism.

2.6.2 Kant's Squabbling Children: Conflicting Thinkers Base Themselves on the Same Texts (2021-06-02 15:27)

Any philosopher — which is to say, any philosophical text — if it is much read at all, will find itself as the real or alleged foundation for conflicting schools of thought. Radical empiricists and Scholastic Thomists both claim Aristotle as their heritage. Triumphant nationalist imperialists and Marxist-Leninists both claim Hegel as their father.

This is certain true of Immanuel Kant, as Norbert Hinske writes:

Selten ist ein Buch so gegensätzlich aufgenommen und verstanden worden wie Kants *Kritik der reinen Vernunft*. Diese Gegensätze lassen sich bis in die ersten Jahre nach Erscheinen des Werks zurückverfolgen.

Not only do competing philosophical schools claim Kant as their foundations, but separately, there are competing interpretations of Kant — interpretations which are incompatible with each

other. Hinske cites how Moses Mendelssohn understood Kant to be one whose influence was primarily destructive: Kant's analysis was, for Mendelssohn, a skepticism which dismantled nearly everything.

> Will man auch nur die äußersten Pole jener schwierigen Rezeptionsgeschichte markieren, so kann man auf der einen Seite Moses Mendelssohn in Berlin nennen. Gleich im „Vorbericht" seiner *Morgenstunden oder Vorlesungen über das Daseyn Gottes* spricht er 1785 von dem „alles zermalmenden Kant", und er fügt ein paar Seiten später hinzu, er hoffe nur, daß dieser „mit demselben Geiste wieder aufbauen wird, mit dem er niedergerissen hat".

Mendelssohn was primarily concerned that Kant's texts would promote atheism. This would have surprised Kant, who considered himself a theist. But Mendelssohn was not alone in considering Kant as dangerous to faith.

Yet the opposing view — that Kant's writings were edifying to faith, and supported not only theism, but a robust theism — was embraced by a group of theologians, who saw Kant as a bulwark against materialism. These enthusiastic admirers of Kant were grouped largely in the university in Jena.

They reasoned: if Kant, as they read him, showed that pure reason alone could not demonstrate the existence of God or the immortality of the soul, then it was also true that he showed that reason could not demonstrate the opposite. The early Kantians in Jena saw Kant as removing rational argumentation from the arsenal of the atheists. Kantianly, one could not demonstrate that God doesn't exist, and one could not demonstrate that there is no immortal soul.

The theologians in Jena argued that, if Kant's pure reason was undecided on these questions, then practical reason would open the door for a *Moraltheologie*, in which God would appear as necessary.

It is clear that even during Kant's lifetime — both Moses Mendelssohn and the early Kantians in Jena were active in the 1780s — Kant was both seen as a dangerous skeptic whose texts fostered atheism and seen as formulating a philosophy which removed reason and rational argumentation from the atheist's arsenal.

3. 2020

3.0.1 Husserl in Context: British Empiricism or Continental Metaphysics?
(2020-06-16 08:16)

Philosophy as it developed in central Europe can perhaps be understood by contrasting it to philosophy as it developed in western France and the British Isles.

The philosophers in the heart of the continent were certainly familiar with skepticism. By the early twentieth century, they were skeptical about, e.g., whether the impressive and highly formalized achievements of mathematical logic offer any substantive content. It would be an oversimplification to categorize England as the home of skepticism and the continent as the home of robust metaphysics.

Britain had its own system-builders, e.g., F.H. Bradley and Bernard Bosanquet. Nonetheless, different trends are discernable between Britain and central Europe, and these trends encourage historians of philosophy to venture generalizations.

Central Europe had its own skeptics, too, but Julian Roberts writes:

> This skepticism, however, has been more characteristic of philosophy in the Anglo-American realm and in France than it has of German thinking.

One need only to think of Locke's reference to 'essence' as "something, I know not what," or to think of Hume's scrutiny of causation and of the self. Likewise, the reader will recall Descartes resolving to set aside all previous knowledge as dubitable and begin anew from nothing, and recall Voltaire embracing a minimalistic deism and attacking sacred text. Skepticism is clear in these examples.

Further east on the continent, however, even radical views which could have been the outcomes of skepticism were instead embraced as the outcomes of metaphysical reasoning. Examples might be Schopenhauer's idealism or Heidegger's alleged atheism.

Even logic, a rather austere region within philosophy, becomes a rich garden of metaphysics in the hands of Fichte, Schelling, and Hegel, who start with algebraic principles and find them to the source of nearly everything. Julian Roberts writes:

> Thinkers in Germany and Austria, where indeed modern mathematical logic largely originated (together with the Vienna Circle's highly influential nominalism), have remained far more optimistic about the chances for a generalized critical project. The most prominent *anti*-transcendentalist in Germany was, of course, Heidegger. But Heidegger is not particularly representative. In particular, a rigorous transcendentalism which embraces the challenge of mathematical logic has also produced crucial work. Husserl was the progenitor of this tradition (though 'phenomenology' as such was a failure, as we shall see); and its contemporary representatives are to be found, for example, in the so-called Erlangen school. Habermas, though better known than they, is in fact one of their major beneficiaries.

Julian Roberts calls Husserl's phenomenology a 'failure' because Husserl at first hoped to build a system on the foundations of pure logic, but then encountered, as noted above, that despite its technical rigor and despite the strength of its impressive formal structure, logic is ultimately empty, delivering no content in terms a metaphysics, epistemology, or other branches of philosophy.

Husserl engaged extensively with Frege and with Frege's work, and was willing to populate his ontology with words, their meanings, and their referents as three separate categories. "Husserl represents another side to" Frege's "developments."

"But his early attempt to rationalize time and space is comparable," Julian Roberts asserts, "with what Kant called Leibniz's 'intellectualizing of appearances' and has the same weaknesses."

> The later Husserl (the Husserl of the 'life-world') overcompensated by lapsing into what is an almost relativist position, at least as it stands.

> The most interesting continuation of the Husserlian project appears in the constructivism of the Erlangen school, and in Habermas's appropriation of related themes.

Philosophers after Husserl pursued "attempts to rescue transcendentalist aspects of the Husserlian project, and also" seek "to vindicate (against Habermas) the thought that although there may be aspects of human practice that are 'unprethinkable', intersubjectivity is, in the end, a rational tribunal."

The term 'unprethinkable' is used by Heidegger (*Unvordenkliche*) to indicate the unpredictable and dynamic nature of meaning. For Heidegger, it is as if words have an unforeseeable career: their uses, semantic fields, and effects changing over time and in various circumstances.

Yet Husserl falls into broader patterns which link him with patterns of philosophy in France and England. Frederick Copleston writes:

> Several philosophers have tried to make philosophy properly scientific by taking as a point of departure an unquestionable datum or proposition. Descartes was one of them, Husserl another. And the transcendental Thomists join the company. Even if however it is allowed that the attempt to develop a presuppositionless philosophy is legitimate, the question arises whether idealism does not result if the subject is taken as the basis of all philosophical reflection.

Copleston argues that Husserl's famous 'bracketing' drove him into some form of idealism:

> Husserl's approach led him eventually into the development of an idealist philosophy.

Copleston cites Sartre's critique of Husserl. Sartre asserted that Husserl would ultimately end up with solipsism: "In Sartre's opinion Husserl cannot escape solipsism."

Ultimately, a broad survey of any philosopher's work runs the danger of degenerating into painting in very broad strokes — in this case, with words like 'empiricism' and 'skepticism' and 'phenomenology' and others. This is the perennial problem of doing the history of philosophy with constructs instead of with the close reading of a given author's texts. Finally, these broad constructs begin to collapse into one another, and into the temptation to pose questions like 'isn't phenomenology simply a form of empiricism?' and 'doesn't idealism necessarily lead to solipsism?' Such questions, and their answers, have less and less content.

Although this exploration of secondary literature is interesting, the close reading of primary text is the surer and better way: instead of reading about Husserl, the reader will be better served by reading Husserl.

4. 2019

4.1 September

4.1.1 Extinction as the Default Fate: Concerning the Ubiquity of Selective Pressure
(2019-09-04 14:45)

Throughout the history and prehistory of our planet, countless species have become extinct. There are many reasons for extinction, but most of them can be lumped together as changing habitats.

Any change in a habit will introduce selective pressure.

As a concrete example, consider the activity of beavers in North America. In a savanna or in a forest, beavers will construct a dam across a small creek or stream, and thereby create a small pond.

The populations in this ecosystem will change almost immediately. The numbers and types of fish, waterfowl, and trees will change.

As the beaver's pond ages, it can gradually turn into a larger lake, or it an fill in with sediment and become a swamp. In either case, the populations of flora and fauna will change again.

The changes brought about by the beavers will mean that numerous individuals belonging to these various species will die.

This is merely one example of the many different ways in which a habitat can change, and thereby exert selective pressure on the populations in that habitat. But not only can numerous individuals die when habitats change. When changes are large enough and numerous enough, entire species can become extinct.

Aside from beaver activities, there are other ways in which habitat change: solar activity, volcanic activity, changes in the earth's magnetic field, etc.

These factors, and many others, cause extinction, as David Wallace-Wells writes:

> The earth has experienced five mass extinctions before the one we are living through now, each so complete a wiping of the fossil record that it functioned as an evolutionary reset, the planet's phylogenetic tree first expanding, then collapsing, at intervals, like a lung: 86 percent of all species dead, 450 million years ago; 70 million years later, 75 percent; 125 million years later, 96 percent; 50 million years later, 80 percent; 135 million years after that, 75 percent again.

A small cluster of microbes, which can travel hundreds of miles by clinging to a bird or to a bit of driftwood, can introduce diseases into regions, and quickly wipe out an entire species — or several species.

These forces are non-anthropogenic. The vast majority of extinctions happen without any human influence. The natural forces of selective pressure are much more ruthless than the effects of human activity.

The earth's atmosphere changes spontaneously, again without any human intervention. Both the climatic temperature and the carbon dioxide levels have demonstrated their ability to vary wildly. Of the mass extinction events which have regularly happened throughout the planet's history,

> all but the one that killed the dinosaurs involved climate change produced by greenhouse gas. The most notorious was 250 million years ago; it began when carbon dioxide warmed the planet by five degrees Celsius, accelerated when that warming triggered the release of methane, another greenhouse gas, and ended with all but a sliver of life on Earth dead.

The direction of causation between extinction events and climate change is not always clear: in some cases, an extinction event may have caused the climate change; in other cases, climate change may have caused the extinction event.

In any event, these events were non-anthropogenic.

The chances of any one species becoming extinct are high; the chances of it surviving over the long run are low. Survival should be seen as an exception; extinction is the norm.

Viewing earth's past on a geological time scale, it is clear that climate change, CO2 levels, and extinction events happen spontaneously and sometimes independently over the millennia. It is clear that in the past and in the present, they can and often do happen non-anthropogenically.

4.2 July

4.2.1 Every Species Was Once an Invasive Species: Concerning the Ubiquity of Selective Pressure (2019-07-27 08:52)

The efforts to identify, and slow the progress of, so-called "invasive species" have occupied the time and energy of botanists, zoologists, park rangers, and good-hearted volunteers over the last several decades.

Who would not want to protect the presumed "native species" from these invaders?

Two aspects of such invasions should be made explicit. First, such encroachments are usually not anthropogenic. Second, such incursions are inevitable.

Species were invading each other's habitats long before humans had the ability, by means of long-range travel, to accidentally or knowingly introduce alien plants and animals into new domains. Insects clinging to driftwood can cross oceans. Fish eggs on the feet of waterfowl can travel from one inland lake to another.

If a species is originally confined to one habitat, then it is certain that it will one day either go extinct, or it will find its way into another habitat — and thereby become an invasive species. A microbe or a plant originally found in Africa will, sooner or later, arrive in Asia, Europe, or the Americas — or it will become extinct.

The species which now seem to be the native species in a given domain, whether it's a North American grassland or an Asian rainforest, were once invaders. There was a time when those species were not to be found in that place. The arrival of those flora and fauna into the current location had nothing to do with humans.

In a tendency analogous to entropy, all the species eventually swirl in slow-motion around the globe. Every species is an invasive species, and by the same token, every species is a native species.

It is also inevitable that the vast majority of these species will eventually become extinct, and this again will not be an anthropogenic process.

Any effort to stop or slow invasive species may be aesthetically productive, but the judgment about which species has the right to be in a particular habitat is at best unclear, and the efforts to stop such invasions will ultimately fail.

4.2.2 Archaic Greek Religion: Its Inability to Hold Adherents Fostered the Birth of Philosophy (2019-07-18 08:48)

One important preliminary question, when examining the archaic Greeks, and even more so when examining pre-Socratic Greek philosophy, concerns the relationship between the Greeks and their religion.

It is common among historians to treat archaic Greek religion - and Classical Greek and Hellenistic Greek religion - as a matter of personal belief. This approach to ancient Greek religion is perhaps influenced by the effects of Jesus, which began around 35 A.D.

To retroject this approach to religion onto 700 B.C., or onto 500 B.C., is anachronistic.

Instead of seeing archaic Greek religion as analogous to religious belief as manifested over the last two millennia, as analogous to medieval and modern conceptualization of Judaism or Islam, it is perhaps more accurate to see archaic Greek religion as a cultural or societal reference point instead of a personal faith.

By way of comparison, the archaic Greeks may have treated their gods in the way in which twenty-first century people treat figures like Santa Claus or the Easter Bunny, like Darth Vader or Yoda, like Uncle Sam or the Energizer Bunny.

In sum, the archaic Greeks may not have 'believed' in their gods in the way in which twenty-first century people believe in Jesus, Moses, Muhammad, or Abraham — in God, Yahweh, Jehovah, or Allah.

The small 'g' in the archaic gods may denote that the ancients did not have a personal belief in their deities in the way in which medievals, moderns, and postmoderns have a personal belief in their God.

Even a scholar of the rank of Eduard Zeller may have fallen prey to the temptation to think of archaic Greek religious belief as analogous to the Christian faith as manifested in European culture.

Zeller seems to credit archaic Greek religion with properties that fostered the birth of philosophy. It might have been more accurate to credit the archaic Greeks with a lack of religious belief that fostered the birth of philosophy.

In this text, Zeller seems to credit Greek religion with qualities that nurtured philosophy, whereas it was perhaps the Greek lack of religion that fostered philosophy:

> Die Religion der Griechen steht, wie jede positive Religion, zur Philosophie dieses Volkes theils in verwandtschaftlicher theils in gegensätzlicher Beziehung. Was sie aber von den Religionen aller andern Völker unterscheidet, ist die Freiheit, welche sie der Entwicklung des philosophischen Denkens von Anfang an gelassen hat.

Perhaps, when he alludes to the 'freedom' which archaic religion gave to its followers, and to their development of philosophical thought, Zeller is correct. But he is perhaps incorrect when he sees archaic religion as in any way related to philosophy.

As Nietzsche wrote, it is precisely in the break with archaic religion that philosophy is born: in the break with mythology. In this case, 'mythology' means narrative as explanation — and therefore includes true myths as well as false ones. But archaic religion was essentially mythic: it used narrative as explanation.

By contrast, the birth of philosophy yielded explanation without myth. The first philosophers — Thales, et al. — were not necessarily more 'true' than the archaic religion, but they were more rational.

For these purposes, the 'archaic' era in Greek history can be understood as lasting from approximately 800 B.C. to approximately 480 B.C.; being a construct and not a concrete bit of data, such an "era" cannot have clear or precise beginning or ending points.

The loose grip — the lack of personal faith — which the archaic Greeks had on their mythological religions had the same salutary effect that the tight grip — the profound personal engagement — which the medieval Christians had on their faith. The Greek lack of faith and the medieval surplus of faith both nurtured philosophical thought.

The pantheon of archaic deities and demigods served primarily to fuel poetry, painting, storytelling, sculpture, and other arts. Their ubiquity in literature and archeological findings should not mislead the modern student into thinking that the archaic Greeks incorporated these gods intimately into their inner lives.

The archaic Greeks did not relate to their gods in the personal way in which twenty-first-century people relate to Jesus, Allah, Yahweh, Jehovah, or God.

The relationship of the archaic Greeks and their gods was probably like the relationship between twenty-first-century people and figures like Batman, Spiderman, Charlie Brown, and Snoopy.

4.3   June

4.3.1   Neuroplasticity and Mind Control: Dissociative Thought on a Cellular Level (2019-06-16 11:57)

Two fields of study have made great progress in the last half-century: the understanding of the physical structure of the brain, and the understanding of the mechanisms of thought control.

The advances in knowledge about neuroplasticity are exemplified in, e.g., a book titled *Mindsight* by Daniel Siegel.

The progress in explaining the techniques of thought reform have been explored by scholars like Louis West, Robert Jay Lifton, Edgar Schein, and Steven Hassan.

The reader is now in a position to make connections between these two different fields of study.

For the present purposes, the terms 'thought control' and 'mind control' and 'thought reform' and 'unethical influence' and 'undue influence' and 'controlling relationships' are taken as nearly synonymous, if not entirely so. To avoid, to the extent possible, the use of the word 'brainwashing' is perhaps wise.

The interaction between neuroplasticity and thought control can be imagined in this way: consider how people ordinarily learn numbers and the skill of counting. Small children, around the

age of two or three years old, are taught to count by repeating, along with a teacher or parent, "one, two, three, four, five, six, seven" over and over again.

The process of learning to count is not only a mental process, but a physical one as well. Neural pathways are being created, and are being reinforced so that they become default pathways.

Later in life, in a math class, students will be taught alternative forms of counting, like "two, four, six, eight" or "one, three, five, seven." But the "one, two, three, four, five" pattern will remain dominant. That pattern will remain the default pattern for reasons which are physical, not mental. The pattern of counting numbers is stronger because it has been built into the brain: pathways have been created, reinforced, and strengthened.

Each time a person says, "one, two, three, four," that pathway is strengthened. People are continually counting all types of things in all types of situations in daily life. The occasions on which one counts "two, four, six, eight" or "one, three, five, seven," are relatively rare.

An ordinary adult will, then, have a cellular structure in the brain which corresponds to counting.That's why people can count automatically, while not thinking about counting, and while thinking about something else.

If some evil genius decided to mislead a group of people about the nature of numbers, he could form a group, in which people spent large amounts of time chanting together: "one, two, three, four, eight."

In addition, he would isolate his group, as far as possible, from any situation in which they'd hear the correct pattern of counting.

At first, the members of the group would find this odd. They'd ask lots of questions, and need to be persuaded to explore this new way of counting. The evil genius leading the group would need to articulate rationalizations for this new way of counting.

The more experienced members in the group - those who've already been counting in the new way for some period of time - might encourage or cajole the newcomers to try this new way. They might explain how their lives are better because they count this way.

The veteran members of the group could reward the newcomers emotionally, applauding and praising them when the count in the new way. Likewise, failure to count in the new way could meet with expressions of disapproval.

Although counting "one, two, three, four, eight" would feel odd to the newcomers, each time they did it, a new neural pathway would be strengthened. It would feel odd for a long time, but each time, it would feel a tiny bit less odd.

Likewise, the old neural pathway of counting the correct way would suffer from disuse, and eventually grow a tiny bit weaker.

Even if there were some lingering doubts on the cognitive level about the new way of counting, on a behavioral level it would eventually feel less odd, normal, and finally automatic.

Thus, in an everyday situation, prompted to count, the newcomers would get to the point which they automatically responded "one, two, three, four, eight" without thinking.

They might eventually grow suspicious of those who count correctly.

This example strives to show how a pattern which seems wrong and counterintuitive can eventually, despite initial doubts on the part of the newcomer, become thoroughly ingrained in the mind.

The next step would be working out the logical implications of the new pattern. Any task of daily life which required counting would have to be reimagined.

In reality, there are no evil geniuses hoping to change the way in which the human race counts. But there are evil geniuses hoping to instill various political and spiritual doctrines into the minds of innocent people. They do this be building and reinforcing neural pathways.

Even newcomers who are skeptical, who doubt the aberrant doctrines which the evil genius wishes to implant into their consciousness, will find that their skepticism does not prevent the new patterns from being built in to their synaptical structures.

So it is that a belief - what seems behaviorally to be a belief - can be instilled into someone's mind without consent or full awareness. This principle lies behind some forms of successful advertising as well as behind the more sinister forms of mind control.

Understanding that the implanted belief is a physical structure also hints at therapeutic options to help the individual who is recovering from thought control.

4.4 April

4.4.1 A Philosophical Classic: Determinism, Moral Responsibility, and Truth Claims (2019-04-10 09:11)

Throughout the history of philosophy, certain themes recur regularly. Various philosophers in various eras return again and again to perennial topics.

The relationship between certain types of psychological determinism and ethical responsibility is one example. A typical formulation goes something like this: if an individual is determined, logically and temporally prior to his acting, in a way beyond his control or awareness, then when he acts, he cannot be morally responsible for his action.

This formulation is, of course, one of many, and is often used in introductory philosophy classes to begin a discussion.

A second textbook example looks at the relationship between determinism and truth claims. If an individual is in certain ways determined, what does it mean for that individual to utter, or write, a truth claim? Does his lack of freedom in making assertions affect his belief in his own truth claim? Should it affect our evaluation of his truth claim? Was he able to examine the proposition, and alternative propositions, before expressing it?

A third exemplar is a mixture of the first two. What is the relationship between the ability to be morally responsible and the ability to make truth claims? If both are called into question by determinism, then what is the common element in both?

Such classic investigations can be found in Greek antiquity, in contemporary philosophy, and at many points in between.

4.4.2 Overeager Claims about Self-Replication: Thinly Disguised Speculations about the Origins of Life (2019-04-09 07:55)

A perennial question in the philosophy of science addresses the origin of life. The natural sciences themselves investigate this question, but the philosophy of science ponders both the methods of such investigations and any results.

One aspect of this question is exploring the possibility of self-replicating molecules. Is it possible that there could be a chemical compound which somehow reproduces itself?

This history of science admits of a number of "holy grail" quests, some of which have plausible claims to success, like the search for metallic hydrogen, and others of which have failed spectacularly, like attempts to isolate samples of phlogiston or aether. Other "holy grail" quests include the Grand Unified Theory (GUT) or the possibility of life outside of planet Earth.

Historically, such quests often trigger hasty claims, which must then be retracted. Such is the case with self-replicating molecules.

With barely-suppressed fanfare, an article titled "Oligoarginine peptides slow strand annealing and assist non-enzymatic RNA replication" appeared in June 2016. The authors wrote of "self-folding" molecules and the "self-assembly" of compounds.

The core motive of such research is the unstated subtext that self-reproducing non-living chemical structures could eventually lead to life.

Living structures reproduce themselves routinely. Non-living structures have never, so far, been observed to reproduce themselves.

The question for the philosophy of science is whether it is possible, even in principle, for a molecule to self-replicate.

The empirical question searches for instances of self-replication. The *a priori* question asks if such a thing is at all possible.

In any case, the particular publication mentioned above was retracted in October 2017. The article and its retraction both appear in the journal *Nature Chemistry*, edited by Stuart Cantrill. It was not the first, and will not be the last, overeager announcement of progress toward the discovery of a self-reproducing compound.

More promising than the observational task is the theoretical question. Without examining any particular chemical structure, the philosophy of science can ask what would be required to demonstrate the plausibility of the idea of a self-replicating molecule in general. Which general principles of covalent bonding, of ionic bonding, or of chemical reactions, etc., would indicate that it is at all possible, in principle, for there to be a self-replicating molecule?

It would be a mistake to confidently predict any outcome to this search - such predictions lead to retractions like the one mentioned above, made by Tony Jia, Albert Fahrenbach, Neha Kamat, Katarzyna Adamala, and Jack Szostak.

The fewer triumphalist claims on behalf of self-replicating compounds, the better.

4.5 February

4.5.1 Always and Again: The Centrality of Definition in the Process of Doing Philosophy (2019-02-27 15:32)

A student in the first semester and a professor with decades of professional activity are both obliged to wrestle with the process of definition, and to return again to sharpen or revise definitions.

One notorious word is 'religion,' which seems to frustrate more attempts to define it than many other words. Often definitions are implicit, and sometimes the used with only partial awareness. Consider this example from Richard Lenski:

While I am not a historian or a theologian, I think the case can be made that many religions have historically (and probably prehistorically) been conflicted between two distinct functions. On the one hand, religions have often sought to provide explanations about the natural world — how it came into being, and especially our own place in the world. The stories from Genesis of the creation in six days, and of the tower of Babel leading to different languages, are two familiar examples. On the other hand, religions have also sought to direct actions by explaining which behaviors were morally acceptable and which were not, and often prescribing rewards and punishments (in this life or beyond) to encourage moral behavior. The ten commandments and the parables of Jesus are examples in which religion gives moral direction. Thus, many religions, in an intellectual sense, have served two masters — understanding our place in nature and giving moral guidance.

Lurking behind Lenski's "two functions" are two definitions, or two parts of one definition, for the word 'religion.'

The first may be called a 'mythological' definition, inasmuch as a myth is often defined as a narrative which explains. As an aside, 'myth' is not synonymous with 'falsehood,' because there are some true myths, i.e., true narrative which explain. Lenski is attributing a mythological function to religion.

Second, Lenski attributes a moral function to religion, a legislative function.

While religion certainly often connects to mythology and to morality, neither is central or essential to religion. One can have mythology and morality without religion, and one can have religion without mythology or morality.

More central and more essential to a definition of religion would be the feature of relationship, i.e., a relationship between one or more human beings and one or more deities. This feature is necessary and essential to religion.

In sum, when trying to refine a definition of 'religion,' mythology and morality are red herrings.

4.5.2 Faraday's Electromagnetism: Discoveries Founded upon a Worldview (2019-02-06 08:22)

The list of inventions, discoveries, and technologies which are possible only because of Michael Faraday's work is a very long list indeed. Telephones, smartphones, radios, computers, televisions, microwave ovens, and radar would be a mere start to that list.

Of Scottish heritage and born in England in 1791, Faraday explored a relatively new branch of science: electromagnetism. Apparently, his interest in this topic began while working in chemistry.

His explorations in both chemistry and physics were informed by a worldview that saw the universe as structured around rational principles like algebra and geometry. Part of Faraday's genius was to explore essentially mathematical topics intuitively and by means of images, often using few or even no equations or formulas.

Pearce Williams, Chairman of Cornell University's Department of Science and Technology Studies, describes Faraday's work, which has become an indispensable foundation for much of modern science:

Faraday, who became one of the greatest scientists of the 19th century, began his career as a chemist. He wrote a manual of practical chemistry that reveals his mastery of the technical aspects of his art, discovered a number of new organic compounds, among them benzene, and was the first to liquefy a "permanent" gas (i.e., one that was believed to be incapable of liquefaction). His major contribution, however, was in the field of electricity and magnetism. He was the first to produce an electric current from a magnetic field, invented the first electric motor and dynamo, demonstrated the relation between electricity and chemical bonding, discovered the effect of magnetism on light, and discovered and named diamagnetism, the peculiar behaviour of certain substances in strong magnetic fields. He provided the experimental, and a good deal of the theoretical, foundation upon which James Clerk Maxwell erected classical electromagnetic field theory.

European culture, and Western Civilization generally, served as an incubator for modern chemistry and physics by promulgating a worldview which included the notion that the physical universe is structured around algebra and geometry. Already present in medieval scholasticism, and made more explicit in Newtonian thought, this worldview saw lawlike regularity as evidence of underlying mathematical principles in the observable world.

The fact that an equation like $F = ma$ is applicable and verifiable not merely here and there, but everywhere, motivated the thought that there is a universal structure to matter.

Alan Hirshfeld is Professor of Physics at the University of Massachusetts and a noted astronomer. He writes:

From the start, Faraday's investigations were more than a joyous commune with nature; they were a sincere attempt to discern God's invisible qualities through the very design of the world. Through well-constructed observations and experiments, he sought to distill nature's seemingly diverse phenomena to a common, irreducible basis - and in this fundamental unity of the universe, he would witness the divine signature. The intense spirituality that imbued Faraday's science derived from his upbringing in the Sandemanian faith, a tightly knit Protestant sect founded in the mid-1700s by Scottish minister John Glas and his son-in-law Robert Sandeman.

As already noted, medieval thinkers paved the way for modern physics and chemistry by hypothesizing that there was a uniformity throughout the empirical world. Whether on the Earth, on the Moon, or on Jupiter, there were certain essential feature to matter and to energy. These features are immutable and can often be expressed mathematically.

This view of the physical universe is a distinctive feature of Western Civilization and of the culture into which Faraday was born.

Faraday, and modern observational science, inherited a second notion from the Middle Ages. From the Augustinian tradition come the notion of experimental error. Francis Bacon systematically catalogue sources of experimental error and create a taxonomy of them.

Experimental error is the scientist's version of humility: acknowledging the possibility of mistakes.

The synonymous words 'Sandemanian' and 'Glasite' (or 'Glassite') are used to describe Faraday's views.

For Faraday, the concept of experimental error was already contained in a spiritual view of human nature, as Alan Hirshfeld writes:

Inspired by a literalist reading of the New Testament, Sandemanians eschewed pride and wealth in favor of piety, humility, and community with fellow Sandemanians. Much of Faraday's over serenity owed itself to the affirmative aspects of his religion. "He drinks from a fount on Sunday which refreshes his soul for a week," noted friend and biographer John Tyndall. Faraday, the Sandemanian, took human fallibility as a given, so he never staked his ego on the correctness or acceptance of his own ideas. He was a scientific pilgrim, inching his way toward the heart of a complex universe. Whether his chosen path proved mistaken was of little consequence; there was always another path. The joy was in the journey.

Whether implicit or explicit, the desire for a sort of 'Grand Unified Theory' is present in the work of many different scientists. They hunt for a single systemic explanation behind a manifold phenomena.

Ian Hutchinson, Professor of Nuclear Science and Engineering at the Massachusetts Institute of Technology's Plasma Science and Fusion Center, writes about Faraday's search for unity behind the range of contrasting empirical data:

One example of the influence of his theological perspective on his science is Faraday's preoccupation with nature's *laws*. 'God has been pleased to work in his material creation by laws,' he remarked, and 'the Creator governs his material works by definite laws resulting from the forces impressed on matter.' This is part of the designer's art: 'How wonderful is to me the simplicity of nature when we rightly interpret her laws.' But, as Cantor points out, 'the consistency and simplicity of nature were not only *conclusions* that Faraday drew from his scientific work but they were also metaphysical *presuppositions* that directed his research.' He sought the unifying laws relating the forces of the world, and was highly successful in respect of electricity, magnetism, and light. His program was less successful in attempting to unify gravity and electricity, for which failure he may readily be forgiven, since 150 years later we still don't know how to do that!

The nearly universal quest, among scientists operating within the framework of Western Civilization or European culture, for unifying principles is a quest fueled by an understanding of the physical world as structured by, and built upon, rational and mathematical principles.

Faraday's work is a prime example, but also only one of many examples, of scientific work powered by a particular worldview. Some version of medieval Scholasticism, with its Augustinian realism about human error and its Thomistic optimism about the power of human reason, is the energizing force not only behind Faraday's brilliant work, but also behind much of modern physics and chemistry.

4.6 January

4.6.1 Kierkegaard's Odd Attack Begins: Monday, December 18, 1854
(2019-01-30 18:04)

The latter part of Soren Kierkegaard's career was devoted to explaining that the two words 'Christianity' and 'Christendom' were opposites. This explanation was startling because many of his readers had taken the two as nearly synonymous.

Kierkegaard had a thorough education in philosophy, and, as Wayne Kraus writes,

His life's mission was the rediscovery of New Testament Christianity, which he insisted had been abolished by "Christendom."

The same point can be made with different terminology. It is the distinction between human religious institutions and traditions on the one hand, and on the other hand an encounter with, and a devotion to, God. It is the distinction, and in some cases the opposition, between religion and God.

In everyday speech, twenty-first century speakers of American English blur the line. The statement, "I'm not religious," is not an answer to the question, "Do you believe in God?"

It is in fact, the most sincere belief in God which often launches the harshest attacks on religion. Humans construct religion: practices, holidays, ceremonies, rites, rituals, etc.

Humans often construct religions with the noblest of motives, hoping that these religions will in some way connect people to God. Religions often do exactly that: offer enlightenment, education, care for the poor, work for peace and justice, etc.

But religions can break bad.

Kierkegaard encountered a church which claimed to be faithful to the New Testament, and which claimed to be following Jesus. What Kierkegaard experienced, however, was a significant number of clergy who used the church as a way to ensure material comfort in their own lives, and as a way to garner admiration from society at large.

Instead of serving their fellow human and serving Jesus, some of the Danish clergy in Kierkegaard's day were serving themselves.

He saw a segment of the institutional church pursuing worldly prosperity, and he saw this as a clear contradiction to the text of the New Testament and as a clear contradiction to the factual documented words and actions of Jesus.

Kierkegaard's incisive analysis of the Danish church was both logical and passionate. His critique both reflected and provoked a crisis, as coauthors Guram Tewsadse and Hans-Martin Gerlach note:

> Kierkegaard [ist ein] dänischer Theologe und Philosoph, dessen Denken als ein erster theologischer Ausdruck der Krise der bürgerlichen philosophischen und religiösen Weltanschauung in der Mitte des 19. Jh. gewertet werden muß.

Tewsadse and Gerlach articulate a particular interpretation of Kierkegaard, which emerges from a broader interpretation of the history of philosophy: Kierkegaard is part of a cosmic unfolding of history, in this case, the history of philosophy. This grand unfolding follows a definite direction through a series of discernable stages.

One competing interpretation of Kierkegaard might see him as engaging in eternal questions which, rephrased for context, could have just as easily been asked a few centuries earlier or later; and perhaps they were.

Another competing view of Kierkegaard might see him as responding neither to universal questions, nor to his specific era in the unfolding of some material dialectic. Rather, this view might see him as responding primarily to his own inner world: his emotions and experience.

Whichever view one might take of Kierkegaard, Tewsadse and Gerlach point out the directness and frankness of the writings he produced during the final phase of his career:

> [Kierkegaard gründete] eine von ihm herausgegebene und geschriebene Zeitschrift, die K.s Kampfansage gegen die offizielle dänische Kirche und ihre Verbundenheit mit dem Staat artikulierten.

This critique of the Danish church had long simmered in Kierkegaard's mind, but it was finally occasioned by two events. First, the death of Bishop Mynster, who had been a friend of Kierkegaard's father, and for whose sake Kierkegaard had kept silent; with Mynster gone, Kierkegaard could write freely.

The second, and more specific, event which occasioned the beginning of Kierkegaard's attack was a funeral sermon given by a Professor Martensen at Mynster's funeral. Martensen, in eulogizing Mynster, had called the deceased bishop "a witness to the truth."

While that phrase might strike many hearers, or readers, as generally complimentary, if somewhat bland, tribute, to Kierkegaard's ears, it was blasphemy. As a scholar who'd studied ancient Greek, Kierkegaard knew that the phrase meant one who'd made the ultimate sacrifice. The Greek word for 'witness' is the English word 'martyr.'

Kierkegaard knew that, textually, the martyrs were the people who, starting with Stephen and the others killed under the supervision of Saul, had been tortured and murdered simply because they followed Jesus. Under the Roman Empire's government, during the first three centuries after the start of the Jesus movement, thousands of people were martyred.

By contrast, Bishop Mynster had lived a materially comfortable life, enjoying social admiration, to an old age. In Kierkegaard's mind, he was in no way a martyr, and to call him 'witness to the truth' was an insult to the thousands of martyrs who had died humiliating deaths.

Mynster's death removed any hesitations Kierkegaard had about publishing his critique of the Danish church, and Martensen's funeral sermon precipitated the actual writing and publication. Mynster died in January 1854, and Kierkegaard published the first installment of his attack in December of that year.

5. 2018

5.1 December

5.1.1 The Meta-History of Philosophy (2018-12-30 15:31)

If we examine the history of Peloponnesian War, or of the Spanish Civil War - if we examine the history of jury trials, or of metalworking - then whichever methods we use for those types of history will also be applied to the history of Schopenhauer, or of Kierkegaard - i.e., to the history of philosophy.

To speak of the history of philosophy is to speak of history; the history of philosophy is history, and so is subject to any generalizations which can be made about history.

Whichever descriptive or prescriptive rules apply to history in general apply also to the history of philosophy.

There is even the risk of an infinite regression: if we apply the philosophy of history to the history of philosophy, then we would have the philosophy of the history of philosophy - and we do in fact have this.

(And then: the history of the philosophy of history, the history of the philosophy of the history of philosophy, the philosophy of the history of the philosophy of history, etc.)

The term 'meta-history' can be used in several senses: it can refer to the archetypical patterns which either govern or describe historical events and processes; it can refer to the manner in which historical narratives are created; it can refer to the study of the philosophy of history (cf. the *Oxford English Dictionary*).

There is also the question of defining 'history' - the word can refer to the actual events and processes which have occurred in the past, or it can refer to our writings and narratives which attempt to record those events and processes, as Frederick Copleston writes:

> Taken by itself, in abstraction from context, the term 'history of philosophy' is ambiguous. On the one hand it may refer to the actual historical development of philosophical thought, in the Greco-Roman world, for example, or in India. On the other hand it can be used, and, I suppose, generally is used, to refer to written accounts of such developments. Thus one might say of a book, 'this is an account of the history of Greek philosophy.' This possible ambiguity might be avoided by reserving the term 'history of philosophy' for the actual historical development of philosophical thought and by employing some such phrase as 'historiography of philosophy' to refer to written accounts of this development. But this cumbersome procedure is unnecessary. These sense in which 'history of philosophy' is being used is generally clear enough from context.

Copleston's view includes some amount of Platonism or realism - he calls it 'a common-sense point of view.' This leads us to Kantian considerations about history.

Kantianly, there's a *Ding-an-sich* (a 'thing in itself') behind or under our perception of the thing: a noumenon behind the phenomenon. Analogously, we might ask about an event in itself apart from the event as we perceive it.

On the other hand, an opposing view might argue that there is no history apart from the perceptions we have and the narratives we create: that history is the telling of history, and nothing more. Philosophers use the word 'idealism' to refer to such a view, and the Anglo-Irish philosopher George Berkeley (1685-1753) expressed such views.

If Copleston draws our attention the questions about realism or idealism in history in general, and in the history of philosophy in particular, then John Yolton draws our attention to the linguistic considerations:

> Taking its root in the theory of types, the theory of meta-disciplines insists that any given discipline, such as sociology, psychology, language, etc., must be distinguished from the talk about that discipline. The psychologist in his laboratory, performing experiments, deriving conclusions, devising theories, is engaged in the accepted activities of his profession. When that same psychologist begins to reflect critically upon his methodologies, upon the meanings of the familiar terms, upon the general significance of his science, he has taken on the activities traditionally associated with the philosopher, he has, that is, become a meta-psychologist. Philosophies of science are, in this way, meta-scientific activities, since the men who construct them do not perform the scientific experiments but instead examine the presuppositions, the methodologies, the concepts of the sciences. Since the two-fold distinction of discipline and meta-discipline arose out of the theory of types, and since this theory has had its most wide-spread application within semantic systems, much of the activity of meta-disciplines has taken the form of a linguistic analysis of the speech and writing of any given discipline.

There is, perhaps, a general pattern in which questions which were viewed as metaphysical questions in the 18th and 19th centuries came to be viewed as linguistic questions in the 20th century.

If the 20th century was the heyday of the philosophy of language, then it should be no surprise that meta-historical thought was treated as a question about the language used to talk about history. Meta-history was seen as the examination of the language which historians used to talk about evidence and data - the language which was used to construct narratives.

Yolton continues:

> Thus, Hare has recently given us an analysis of *The Language of Morals*, Woodger presents *Biology and Language*, and Ryle offers an account of mental conduct words. Such analyses of the language of disciplines cannot avoid making assertions or drawing conclusions about the activity of the discipline itself: that is precisely the function of a critical examination of science, ethics, or history, i.e., to formulate conclusions not only of a descriptive but also of a prescriptive nature. Ryle urges us, for example, to dispense with the fallacy of the ghost in the machine in thinking about the nature of mind and mental activity, while the historical relativist insists that claims to objectivity in historiography are fallacious. If taken seriously, the analysis of the meta-discipline reflects back upon the discipline itself, recommendations made upon the meta-level are absorbed 'into the original activity. The meta-discipline lays bare latent presuppositions, exposes them to criticism, challenges their accepted meanings, indicates contractions required for precision.

We might pose a question about whether, in the history of philosophy, it is correct to speak of Bossuet 'reacting' or 'responding' to Hobbes. One the one hand, to thus speak creates a

more intelligible and continuous narrative. On the other hand, it might be more accurate to simply say that Bossuet wrote at a point in time after Hobbes had published his major texts. To attribute 'reacting' or 'responding' to Bossuet might exceed the evidence at hand.

Likewise, to ask whether George Berkeley is properly grouped among the British empiricists, as Louis Loeb does, is simultaneously to challenge a construct created by some historians of philosophy and to create a new competing construct. Both the asking of the question and the answering of it are worth investigating, inasmuch as the examination of schools of philosophy is the examination of a later historiographical construct, a construct which is then retrojected onto the earlier evidence, rather than a direct examination of the data itself.

In any case, while it is first necessary for us to naively ask a historian of philosophy for a narrative about "what happened," it is secondly also necessary for us to ask the historian of philosophy about how he constructs narratives and how he chooses from among competing narratives.

5.2   May

5.2.1   Competing Views of Descartes: How Platonic Are His 'Immutable Natures' and 'Eternal Truths'? (2018-05-11 13:18)

Almost single-handedly, Rene Descartes began modern philosophy. What scholars call 'modern' philosophy started around 1620. It is indicative of the character of this movement that Descartes was, among other things, a mathematician.

In addition to founding modern philosophy, Descartes initiated one of the competing schools within it. The cartesian school is known as 'rationalist' and has a preference for *a priori* knowledge over *a posteriori* knowledge, i.e., it privileges knowledge which is not empirical over knowledge gained from sense-data, and privileges theoretical deduction over knowledge gained through the use of the five sense.

Descartes hoped to build a reliable foundation for knowledge on those three things which he thought to be most certain: the truths of geometry and algebra, the confidence that any rational agent has about her or his own existence, and existence of a non-contingent being on whom other contingencies rest.

Given the centrality of arithmetic and mathematical truths in cartesian thought, it became obvious for students to ask about the nature of such truths. In this question, modern philosophy inherited some questions which had been discussed in both medieval and ancient philosophy. This topic is often labelled as the "problem of universals."

This debate, according to Tad Schmaltz, "concerns the ontological status of universal features of reality." For example, the system of Euclidean geometry yields certain results - and those results hold equally in Europe and North America, equally last year and next year. They are universal.

An interpretive question asks how, exactly, Descartes regarded what he viewed as, in Schmaltz's words, "eternal truths."

The ancient antecedents of this debate see one side in Plato, who considered such eternal truths to be not physical but rather metaphysical objects and considered them to exist both outside the physical natural world and outside the human mind. They see the other side in Aristotle, who located these truths in the natural physical world.

The medievals were bequeathed this dispute, and refined the argumentation on both sides with increased nuance.

Plato should not, however, be seen as an early version of Descartes; nor should Aristotle be seen as an early version of John Locke.

While Plato and Descartes may have shared a fondness for a realism about abstractions, they were quite different in other ways.

The interpretive questions for those who study Descartes include these: what did he consider to be in the category of metaphysical objects? What, according to him, are those things which we can consider to be outside the realm of physical objects? Which realities are not detectable by the five senses?

Two competing views of him emerge: one view sees him as minimally metaphysical and as assigning relatively few objects to the category of metaphysical object; the other view sees him as richly metaphysical, populating the metaphysical realm with many objects and with many different types of object.

Tad Schmaltz describes the interpretive schism:

> The division in the recent literature on Descartes is between those who see him as adopting the broadly Platonic view that immutable natures are independent both of the human mind and of the particular objects in the created world that exemplify those natures, on the one hand, and those who see him as endorsing a conceptualist reduction of such natures to features of the human mind, on the other.

A closely related question is this: is our idea of a truth identical with the truth itself?

As Schmaltz writes, there is textual evidence on both sides of these questions. Descartes's writings are ambiguous.

> There is a related controversy regarding the ontological implications of Descartes's famous (some would say infamous) doctrine of God's free creation of eternal truths. Though there is some support in Descartes's texts for the identification of these truths with the ideas concerning them that God has imprinted in our mind, there also is reason to worry that such an identification cannot fully accommodate everything that Descartes has to say concerning eternal truths and immutable natures.

So, on the one hand, there is a debate about whether or not eternal truths are identified with our ideas concerning them. On the other hand there is a debate about whether immutable natures are features of the human mind or whether immutable natures are independent both of the mind and of the physical world.

These two debates are intricately linked, to the point that the question could be posed as to whether they perhaps constitute only one debate, cast in two different sets of vocabulary.

Are the words 'eternal truths are identified with our ideas concerning them' equivalent to the words 'immutable natures are features of the human mind'? Again, are the words 'immutable natures are independent both of the human mind and of particular objects in the created world' equivalent to the words 'eternal truths are not to be identified with our ideas concerning them'?

5.3 March

5.3.1 Competing Definitions of 'Religion' (2018-03-28 15:32)

The debates and discussions of religion are many, and the discipline of the philosophy of religion, as it is known at universities, is a prolific one, spilling gallons of ink. One reason that the analysis of this topic is so voluminous is that the words used are slippery, having ambiguous definitions.

The word 'religion' is one of the words at the center of this clutter.

There are many competing definitions of 'religion' and each carries with it a set of implications and entailments.

Two of these many will serve as examples.

Among individuals and societies, two phases can be discerned - and possibly many more, in addition - which are not necessary temporal phases, although they probably are, but certainly one phase has a logical priority over the other:

Phase 1: Some individuals and societies structure their thought around myths and magic.

Phase 2: Others shift the primary emphasis onto a relationship with the deity.

The word 'myth' may be used to refer to a narrative which has explanatory powers - it is usually a narrative designed to explain or to answer some question. *Contra* some modern usages, a 'myth' is not *a priori* false: there are true myths.

The word 'magic' here refers to attempts to control the forces of nature. Traditionally, there is an effort to manipulate the weather, the fertility of crops, the outcome of military efforts, the romantic response of a potential spouse, or one's physical health. Magic is an attempt to manipulate via supernatural means. In this context, societies offer sacrifices of animals or humans, prayers, songs, and artworks.

Myth and magic are transcended by an outlook which is in some sense Kantian. Historically speaking, some individuals and societies have moved beyond myth and magic centuries and millennia before Kant (1724 to 1804), but the principles involved are Kantian in nature.

At the risk of great oversimplification, Immanuel Kant argued that there are some things which are simply unknowable to human reason. Sifted down to ordinary folk, this means accepting the concept of mystery.

Rather than using human reason to find explanations, or create myths, rationality simply accepts that there is a categories of unknowables.

An allusion to Werner Heisenberg's work may be in order here: Heisenberg (1901 to 1976) showed that human reason cannot predict, e.g., the direction in which a photon will leave a neon atom when it's electrically charged.

This Kantian shift nudges the individual, or the society, to de-emphasize myth - the attempt to explain, and to de-emphasize magic - the attempt to control. Instead, emphasis is placed on relating to the deity.

In a post-myth and post-magic framework, the individual seeks knowledge about, and understanding of, God. Questions arise about God's nature, characteristics, actions, and intentions. These questions are not instruments, i.e., their answers are not sought as tools by which the individual or the society may achieve some end.

Rather, the goal - if a goal it is - is relating to, or with, the deity. But perhaps it is something other than a goal: perhaps it is a way of being. Some scholars use words like 'contemplation' and 'reflection' for such way.

Relating to the deity includes not only a partial knowledge about, and understanding of, God. It include not only a 'knowing about' but rather also a 'knowing' - and here one may investigate the difference between 'knowing about God' - which could also be the task of an academic philosopher - and 'knowing God' - which is a relational concept.

Further, there is a reciprocation: being known by God, and being understood by God. Generally considered to be omniscient, God is seen as knowing and the understanding the individual - and doing so better than anyone else.

Having moved beyond myth and magic, this second phase focuses on a connection or communication between God and the individual human being. In this phase, variety of concepts appear to describe this relationship: grace, mercy, forgiveness, inspiration, vocation.

But the question which lay at the beginning of this investigation was about the definition of 'religion' - what does this word mean? Note that it has been studiously avoided for several paragraphs!

Here the competition between definitions becomes clear.

Some scholars use 'religion' to designate the phase of myth and magic. Other scholars use the word to refer to the post-myth, post-magic phase of relation.

With two such variant definitions on the table, it is no wonder why discussions of the matter seem endless.

For the one group of thinkers, 'religion' is a phase to be left behind. For the other group, it is a goal.

For one group, it is an irrational and pre-Kantian viewpoint. For the other group, it is the achievement of human reason having reckoned with its own limits.

To muddy the waters still further, these are only two of many possible ways of using the word 'religion.'

5.3.2 Hypothetical Architecture (Part 3) (2018-03-27 10:33)

Trying to formulate even a rough estimate of the Earth's carrying capacity is difficult. How many people can sustainably and renewably be housed and fed and given a first-world lifestyle on our planet?

In simple terms of physical space, there is room for hundreds of billions of people to have generous housing - 400 square feet of indoor living space (e.g., 1600 square feet for a family of four), with running water, electricity, HVAC, telephone, radio, internet, and television. There is no shortage of space.

But living space is merely one variable. What about clean water, clean air, food, and energy?

Warren Weaver earned his Ph.D. at the University of Wisconsin, and taught at Caltech (The California Institute of Technology) before working at the Sloan-Kettering institute. He analyzed food production in terms of energy: sunlight is energy which plants store by means of photosynthesis.

The effectiveness of agriculture can be measured by the efficiency with which sunlight's energy is converted into, and stored as, chemical energy in plants.

Calculating what the carrying capacity of America might be, Weaver, in the words of author Charles Mann, suggested

> that in terms of energy, the theoretical carrying capacity of the United States was about 80 billion people.

Weaver was one of the first to apply advanced mathematics, physics, and chemistry to the question of Earth's carrying capacity. Charles Mann continues:

> Think in these terms was clarifying, Weaver thought. It showed that viewing the human dilemma in terms of an ecological carrying capacity was a mistake. The planet's actual, physical carrying capacity was so large - scores of billions of people - as to be irrelevant. The true problem was not that humankind risked surpassing natural limits, but that our species didn't know how to tap more than a fraction of the energy provided by nature.

Weaver calculated that even modest progress in agricultural productivity would yield enormous advancements. Baseline farming practices convert energy at a microscopic efficiency of 0.00025 %, but

> if we had a more efficient way of turning solar energy into food - and let us now say to be more reasonable, a way that had efficiency of only 1 percent - then an area the size of 1/100 the state of Texas would produce food enough to give 3,000 calories per day to a world population 50 or 60 times the present one.

As generous as Weaver's estimates are, the planet's carrying capacity is, in fact, many times greater than he suspected. To his numbers can be added, e.g., the farming of the seas (kelp), which would feed billions more.

Turning from food to water, it is clear that the planet Earth contains immeasurably more water than any conceivable human population might need. The trick is, however, to provide water which is both clean and desalinated.

The majority of the planet's water is saltwater, and the majority of the needed freshwater is not for drinking, but rather for agriculture.

Water use can be analyzed from a variety of perspectives: sea farming doesn't require desalinated water; industrial large-scale desalination processes have been refined to point at which they can provide huge amounts of water.

It is quite reasonable to estimate that we can provide sufficient energy while retaining or even improving air quality. In the United States, for example, air quality was at its worst in the late 1960s and early 1970s, and it has been getting better ever since. During this same time, the U.S. has increased its energy production and energy consumption.

Clean air and plentiful energy are not mutually exclusive.

Reports generated by the Food and Agriculture Organization of the United Nations confirm that, relative to the planet's population, the world has a food surplus.

Starvation and malnutrition, wherever they occur, are the results of mismanagement, corruption, and bad distribution practices.

So what is the Earth's carrying capacity? A definitive answer eludes researchers, but a generally acceptable number would be significantly greater than 100 billion.

5.4 February

5.4.1 Hypothetical Architecture (Part 2) (2018-02-14 07:00)

Using hypothetical architecture as a proof of concept, it can be shown that 30 billion people could be housed in an area the size of the state of Kansas: and not merely housed, but provided with first-world dwellings.

This is part of a larger project to investigate the carrying capacity of planet Earth. How many people can live on our planet in a sustainable manner, using renewable resources?

'Carrying capacity' is the upper limit of a population in given habitat. It is the ability of the habitat to provide the necessities of life for the population.

This is, of course, a difficult and ambiguous calculation, but it seems that the upper population limit would be several hundred billion. But even that number might be surpassed with technological innovation.

With any population level in the foreseeable future, food is not a limiting factor. Agriculture as currently practiced could provide good nutrition for many times the current population of 7 or 8 billion.

Hunger and famine, which tragically claim many human lives each year, are the results of distribution problems, not production problems. Instances of starvation or malnutrition are not due to a lack of food, but rather to a lack of delivery.

To the contrary, over the last century, production of food has exceeded the need for it. Deaths are the result of a failure to transport food to locations in which it is needed.

Slowing or stopping population growth would not reduce starvation. Even reducing the human population of the planet would not reduce starvation. Famine is the result of human nature; it is not the result of the planet's carrying capacity.

If there were only 100 humans living on the planet, there could, and probably would, be starvation.

On the other hand, large-scale farming of seaweed would expand food supply beyond anything currently envisioned. Likewise, there is much underutilized fertile land which would expand food supply with traditional, land-based agriculture.

The earth's mineral resources have barely been used in terms of iron and copper. The same is true of limestone for cement and concrete, and of clay for bricks.

The wise use of various energy sources will leave humans with clean air and clean water.

The works of Thomas Malthus, who wrote during the late 1700s and early 1800s, were misunderstood and misinterpreted to create a wave of concern in the 1960s and 1970s about potential 'overpopulation.'

This misreading of Malthus led to alarmism in the popular imagination, seen in Paul Ehrlich's *The Population Bomb*. Various governments formed 'population control' agencies and policies. Ironically, decreasing birth rates in many first-world nations led to economic misery as fewer workers had to provide for more retirees.

Declining birth rates also inhibited 'green' environmentally-friendly practices, as a shortage of young workers caused employers to find the most efficient practices instead of the most 'green' practices.

The question of our planet's carrying capacity was not explored by the doomsayers of the 1960s and 1970s. Instead, it was simply assumed that this capacity had been reached. Paul Ehrlich's book is filled with horrifying predictions of what would happen in the next decade or two.

Because the timeline for Ehrlich's predictions has passed, and the disasters he predicted did not happen, researchers are carefully analyzing the question of Earth's carrying capacity. No precise answer has been calculated, but it will be well above current population levels, and will be in the hundreds of billions.

5.4.2 Hypothetical Architecture (Part 1) (2018-02-13 08:53)

The phrase 'hypothetical architecture' is here used to refer to designs for a building which nobody intends to build. The architect who designs it does not intend for anyone to build it, and there are no people who want to build it.

What is the purpose of designing something which nobody will ever build, and which nobody even wants to build?

Hypothetical architecture can serve as a proof of concept. It can show that a concept is feasible.

In the present case, it can help to answer questions about the carrying capacity of the earth. How many people can live on planet earth?

More precisely, how many people can live in first-world fashion, with sustainable and renewable sources of clean water, clean air, and nutritious food? This exploration provides 200 square feet of living space per individual (a family of 4 would have 800 square feet, a family of 5 would have 1000 square feet, etc.).

While this amount of living space is a bit low for a truly first-world standard, it represents a convenient metric for calculation. Once established, it would be easy to return to the question and recalculate to provide 250 or 300 square feet of living space per person.

Also part of the standard would be first-world HVAC, running hot and cold water, telephone, cable TV or broadcast TV, high-speed internet access, radio, electricity, etc., in each living unit.

This hypothetical architectural experiment will proceed by envisioning a 20-story apartment building which can be reproduced in a standardized fashion to fill an arbitrary number of square miles.

The building would be 54 feet wide and 421 feet long. Exterior and interior walls are calculated as being 1 foot thick. The interior space is conceptualized as square rooms measuring 20 feet by 20 feet. A 10-foot-wide hallway would run down the middle of the building with rooms to the right and left. There would be 20 rooms on each side, totalling 40 rooms on each floor of the building. Space is allotted for stairwells or elevators.

Outside of the building would be a 10-foot margin of green grass and a 10-foot sidewalk. A 1-foot curb would separate the sidewalk from a 10-foot automotive lane. (These units are imagined as replicating, so the next unit would also include a 10-foot automotive lane, forming a two-way street.)

This structure represents housing for 40 people per floor; a 20-story structure would render a building housing 800 people.

The unit, including the building, sidewalk, curb, and one lane of automotive traffic would measure 116 feet by 483 feet. These dimensions would constitute a repeatable footprint.

Replicated, 450 of these structures would be placed within a square mile, arrange in 10 rows of 45 buildings. Within that square mile would also be extra space for parks and gardens.

This would yield a housing density of 360,000 residents per square mile.

Thus housed, 9.7 billion people could be housed in an area which is equal to one-third of the square miles in Kansas.

The reader is again reminded that, in reality, nobody would ever build in this fashion, nor would anybody want to live in this fashion: it would be as unbearably dreary as the Stalinist socialist prefabricated housing (called *Plattenbau* in the former East Germany) which filled Warsaw Pact cities during the Cold War.

While nobody would build these structures or want to build them, and nobody would live in them or want to live in them, their function as 'hypothetical architecture' is fulfilled inasmuch as they serve as 'proof of concept,' showing that the earth's population could not only be housed, but housed in first-world fashion.

Such a small percentage of the surface area of the earth would be occupied by residential structures that huge amounts of land would be left for agriculture, for parks, for undeveloped natural preserves, and for industry.

In any non-hypothetical scenario, obviously, the population would be spread across the various continents of the earth. The housing is here imagined as concentrated merely for the purpose of calculating population density and surface area.

The surface area and natural resources of the planet are sufficient to provide education, recreation, and meaningful work in addition to housing and other basic needs.

A population, of not only 10 billion, but rather even of hundreds of billions, could be housed. There would be ample sustainable and renewable resources to provide clean air, clean water, and nutritious food.

6. 2017

6.1 December

6.1.1 The (In)Corrigibility of First-Person Statements: A Plausible Doctrine in Need of Defense (2017-12-05 10:00)

Philosophers have long considered first-person statements of beliefs, desires, and intents. Many thinkers have asserted, in some form, the doctrine that such statements are incorrigible.

Such statements can also be reports about emotions or internal experiences.

Such arguments are plausible, and perhaps sometimes even persuasive. How can I correct someone who makes statements like:

> I'm in pain.
> I'm happy.
> I'm sad.
> I think that John is in the office.
> I believe that Susan is in the museum.
> I hope to be in Pittsburgh tomorrow.
> I'm driving to Detroit this afternoon.
> I want to quit smoking cigarettes.
> I desire to finish my graduate degree.
> My left foot hurts.

Reports of pain or emotion seem to be such that they can indeed be false, but not corrigible. The man who says, "I want to quit smoking" or "I'm in pain" may be correct, or may be mistaken, or may be lying. But on what basis can the listener correct the man's statement?

The doctrine of the incorrigibility of first-person reports can be defended differently, depending on underlying assumptions about the philosophy of mind.

For those "substance dualists" willing to embrace a rich metaphysical ontology, the mind is an object, such first-person reports are descriptions of that object. Such reports can be accurate or inaccurate as they correspond to that object.

If and when such statements are not correct, they can be corrected by comparing them to the object in question. But the only person with direct access to that object is the speaker.

Questions about first-person reports are questions about other minds.

Someone with fewer ontological commitments than a 'substance dualist,' i.e., someone not committed to asserting the existence of a 'mental substance' out of which the mind is constructed, or someone who conducts his philosophy mind without reference to the possibility of metaphysical entities, will look the doctrine of incorrigibility differently.

One might, e.g., reduce such first-person reports of mental states to truth conditions for those statements, and the experiences which confirm or deny situations or events which would fulfill such truth conditions might be accessible only to the speaker.

Although the incorrigibility of such statements is a widely-accepted doctrine, there are some examples which cause difficulty for it.

There are, in fact, concrete examples of situations in which one person will say or write a sentence of the form "I want …" or "I believe …" or "I feel …" and a second person will reply, "No, you don't want …" or "No, you don't believe …" or "No, you don't feel …"

Imagine, e.g., a married person who's recently had an argument with her or his spouse. She or he might exclaim to a friend, "I want a divorce." The friend, knowing that the outburst is a reaction to a transient emotion, might reply, "No, you don't."

Although the view that first person reports of mental or emotional states or events is plausible, attractive, and widely-accepted, it is nonetheless susceptible to questioning, and will ultimately need to be defended.

6.2   September

6.2.1   Schopenhauer Demands Much from His Readers (2017-09-17 14:49)

To approach Schopenhauer simply, and at face value, is to encounter surprisingly steep stipulations. His central work is *Die Welt als Wille und Vorstellung*, translated variously as *The World as Will and Representation*, *The World as Will and Idea*, and *The World as Will and Presentation*.

He published it in 1818/1819.

The book is two volumes in its final form, totalling approximately 1430 pages, depending on the edition, font size, etc.

Schopenhauer expects the reader to digest a large amount of dense prose, including untranslated quotes from other authors in Greek, Latin, French, etc.

Even more, in the first few pages of the work, he places several other requirements on his audience. First, he asks that they read his book twice.

Second, he tells the reader that, before starting the book, he should read *Über die Vierfache Wurzel des Satzes vom Zureichenden Grunde* (*On the Fourfold Root of the Principle of Sufficient Reason*), a book he had written five years earlier.

Third, he imposes the requirement that the have also read *Über das Sehen und die Farben* (*On Vision and Colors*), a book he had written two years earlier.

Finally, he mentions in passing that the reader should have a good knowledge of Kant's works.

This would mean that a person would have to read around 3120 pages of Schopenhauer's writing, plus however many pages of Kant, in order to meet the demands.

Schopenhauer claims that only in this way does the reader have a chance to properly understand him.

His demands are staggering, and his claim, if true, would probably mean that very few people indeed have ever understood him.

As an author, Schopenhauer is free to make whichever demands and claims he pleases. As readers, people are free to comply or ignore as they choose.

But what about his claim that this is the only way to understand him? Certainly, generations of university students have contented themselves with reading summaries of, or excerpts from, his earlier two works.

Can it be said categorically that these students cannot have understood Schopenhauer?

His prose is often witty and enjoyable to read, but does he overestimate the power of his own text? Is it really necessary for the reader to read every page of this in order to understand Schopenhauer?

He certainly wouldn't be the first author to be a bit too impressed with his own writing skills. Surely the reader could still understand his ideas, even if the reader skipped over the occasional anecdote or literary quotation.

Schopenhauer often restates his main points in a variety of ways. To be sure, this can lead to deeper understanding, but in this astonishing amount of text, there are, and there are bound to be, a number of redundancies.

In any case, it is clear that Schopenhauer has no qualms about placing significant burdens on his reader. He also hints, in those same early pages, that's aware that many copies of his book will finally be little more than decorative objects.

If it's true that those books can only be understood by meeting his demands, then he's correct that the books will be merely ornamental trinkets.

6.3 August

6.3.1 On the Way, But Not Quite There Yet: Pre-Religion and Proto-Religion (2017-08-19 11:04)

A clear definition of the word 'religion' is necessary, because in concrete history, the reader will encounter phenomena, and want to call them 'religion,' and yet not be quite certain whether or not they are.

History seems to suggest that the earliest phases of all - a sweeping but justified generalization - human civilizations had, not religion, but something just short of religion: a system of myth and magic.

Here, 'myth' is understood to be narratives which are designed to explain; in this sense, a myth can be true or false, but in either case it's still a myth. In addition, the creation of such myths, and their role in culture and society, are to be considered.

'Magic' is an attempt to manipulate or control nature: the weather, agricultural fertility, human fertility, disease, and health.

Hegel, in his lectures on the philosophy of religion, notes:

> The *first* religion is this, that consciousness of the highest is consciousness of a human being as dominion, power, and lordship over nature. This first religion, if we can call it that, is the religion of *magic*.

The myths left to us by primitive civilizations seek to explain: the cycle of the four seasons, the patterns of visible stars and of other celestial bodies, the origin of the earth and of the universe, the features of natural geography, etc.

The magic of those early cultures included attempts to influence, primarily crops and harvests, but other events as well, by means of song, dance, chanting, incantations, the building of altars and temples, etc.

Sacrifice falls under the heading of 'magic.' Animals and edible plants were sacrificed to idols or effigies which were the personifications of natural forces like rain, sun, water, etc. The extreme case was common: human sacrifice has been documented in every known primitive civilization.

These early belief systems lacked elements which are found in religion: they focused almost exclusively on the attempt to explain or influence the course of nature. Even their hypotheses about the afterlife quickly returned, in one way or another, to the natural world.

Although these systems of myth and magic may seem very metaphysical, with their reliance on things unseen, they are, from another perspective, rather lacking in metaphysics, inasmuch as they are completely concerned only with the physical world. That which may seem metaphysical in these belief systems is merely an *ad hoc* explanation.

Hegel continues:

> This earliest form of religion - although one may well refuse to call it religion - is that for which we have the name "magic." To be precise, it is the claim that the spiritual aspect is the power over nature; but this spiritual aspect is not yet present as spirit, is not yet present in its universality. Instead the spiritual is at first just the singular and contingent human self-consciousness which, in spite of only sheer desire, self-consciously knews itself to be nobler than nature, and knows that self-consciousness is a power transcending nature.

To be sure, there are elements of myth and magic in modern culture, and even more in postmodern culture. In modern culture, however, these are less common than in early human civilization, and are often in the realm of politics and natural science, and less frequently in the realm of religion.

Further, myth and magic seem to be present, even in modern and postmodern contexts, in what one might call 'folk religion' or 'disguised superstition.' While religion itself in the current time has shed much of myth and magic, it is not difficult to find individual people, or individual events, in which both are significantly present.

Indeed, it is possible that one way to describe the emergence of postmodernism and the simultaneous recession of modernism is to depict it as reemergence of myth and magic. Postmodernism can be seen as more hospitable to both.

Another marker of the transition from pre-religion or proto-religion is the concept of relationship. In pre-religion and proto-religion, the deity, if present at all, is there to be cajoled and begged. The relationship to the deity, if it is a relationship at all, is one of manipulation. The deity is an object but not a subject, and although the deity may have power - to make it rain or to make the crops grow, etc. - the deity is not treaty as a fully knowing conscious agent with personhood, and no attempt is made to relate to the deity as a person.

By contrast, in the transition to religion, the deity is treated as a person, and the goal is not to manipulate the deity, but rather to know, and be known by, the deity. The goal of religion is relationship. Mature religion is not primarily focused on controlling nature or explaining it: hence the concepts of acceptance and surrender to what is.

6.4 June

6.4.1 Efficient Encryption (2017-06-20 08:19)

Data storage is measured by several variables: price, stability, speed of retrieval, and density, among other factors. 'Density' refers to the physical space needed, e.g., bytes per cubic centimeter.

Perhaps the most powerful encryption system on the planet, and one certainly exceeding any technical or mechanical invention of the last century, is DNA. In an object too small to be seen by the naked eye, gigabytes and terabytes of genetic information are chemically housed.

The data thus stored includes not only an exhaustive description of a complex biological structure, but much more: the developmental processes needed to create that structure, and plans for how that structure will respond to thousands of possible circumstances.

This amazingly efficient data encryption system is the envy of every hardware engineer. Ken Brown writes:

> DNA, as well as the protein machines it codes for, possesses "complex specified information" (abbreviated, incidentally, CSI). This means it is both highly improbable (complex) and conforms to an independent pattern (specified).

A single drop of blood from a mouse contains data which is encrypted, stored, and retrievable in ways superior to the best current supercomputers.

The future of hardware may be found in the study of how data is stored in genetic material. This would open the door to a "memory explosion" of huge dimensions - memory wildly more efficient than any current hardware, and eventually perhaps at lower prices.

The question to be posed is whether it is possible, in fact or in principle, for humans to replicate the encryption used in chromosomes. Can this system of codification be synthesized?

6.5 May

6.5.1 Parsing the Will (2017-05-22 13:23)

The question about free will is one of the thornier topics in the philosophy of the mind, with its entanglements in psychology, ethics, and other areas of philosophy. A *prima facie* approach would pose the question of whether or not the will is free, and then move on to a raging debate.

But before such a question, and its ensuing discussion, can be posed, a number of significant preliminaries should be resolved. For example, what's the difference between being free and having the experience of freedom?

Can one be free without knowing it? I.e., have freedom but not have the experience of freedom? Conversely, can one have the experience of freedom, without having freedom itself? In which case the experience would be misleading?

Some philosophers have moved the question about the free will up to a meta-level. If "willing" is wanting, does "having a free will" mean that I want to want what I want? Any will wants what it wants. Does a free will want to want what it wants?

There is an epistemological aspect: how do I know whether or not my will is free?

Freedom of the will might be relative to its object. This possibility uncovers the source of interest in the question about the will. Consider what we might call "mundane" decisions: I own several identical, or nearly identical, pairs of white socks. When I get dressed tomorrow morning, which pair will I choose?

Perhaps I will choose based on which pair is closest, which is at the top of the pile, which will take the least effort to grasp, or which will least disturb the orderliness of my wardrobe. Our discussion will then proceed along the usual lines: asking how I formed those preferences, how I analyze and calculate the situation, whether the choice is conscious or deliberate or not, etc.

But the choice about the socks is, in itself, uninteresting. The question about the free will becomes interesting when we discuss the will of, e.g., a murderer.

Many thinkers care about the question of the will because of its moral examples. But arguably many choices made by humans are ethically neutral.

Some scholars have estimated that each individual human being can make as many as several thousand decisions in one day: I reach into my drawer to grab a pencil; there is more than one pencil there; I choose one; in another drawer, there are several slips of paper; I choose one; I start writing my grocery shopping list; I choose whether to buy a quart or a pint of cream; I choose whether to buy red grapes or black grapes; I choose whether to buy grape jelly or strawberry jelly.

Marketing executives and advertising agencies will be interested in those decisions in the grocery store. Generally, philosophers will not.

The human will, then, makes some choices which appear to have no ethical significance, and other choices which do have ethical significance. It seems likely that moral decisions are responsible for much of the interest in the question of the will's freedom.

Philosophers haven't spent the last two millennia pondering the free will because they were wondering about choices between tea and coffee.

In addition to the ethically significant and the ethically insignificant, there may be a third category of decisions: a third set of objects for the will.

In theology, there are hints of a category of choices which we might call "spiritual."

These are found, e.g., in the debate about whether one can 'accept' God's grace, or whether one instead 'receives' it. Could this be a debate about the will?

A variety of theological views insist that the human will cannot 'cooperate' with, or 'choose,' God. They are implying that the human will is not free in those matters. But some views will simultaneously insist that humans are free in certain moral choices.

The result is the possibility that the human will could be, at the same time, free in some matters and bound in others.

Bluntly put, the businessman is interested in the will's operation in selecting products in a grocery store; the ethicist is interested in the will's operation in moral decisions; the theologian is interested in the will's operation in relation to God.

Are these truly distinct categories? To be sure, there are some overlaps. A purchase decision can certainly be, simultaneously, an ethical decision.

Can we find examples of choice which are purely in one category or another?

Further: is it possible that the human will could be free in one category of decisions, and unfree in another category?

Discussions about the freedom of the will were already complex. If we establish a taxonomy of three difference types of choice (about mundane decisions, about ethical decisions, about spiritual decisions), then it's even more complex.

6.6 April

6.6.1 Parsing WEIRD Morality: Its Constituent Parts (2017-04-12 13:28)

Among professional ethicists, the acronym WEIRD has arisen to refer to a demographic segment of "Western, Educated, Industrial, Rich, and Democratic" people. There is a general trend in the moral thinking of such individuals.

Each of the five factors named in the acronym has a general trend manifested in ethical thinking. To more specifically identify or express a factor's ethical influence, however, the reader must first define each factor.

While the term "Western Civilization" is ubiquitous and has worked its way into the structure of both secondary and higher education, it retains at least some ambiguity. The word "western" is by itself merely a geographical designation; Sierra Leone is west of Paris; and Dakar, Senegal is west of London.

So what does "western" mean in the context of WEIRD morality? Other terms which are often given as nearly synonymous for 'western' included 'European culture' and the 'Judeo-Christian tradition.' These phrases, also, are ambiguous and problematic. "European culture" is now found around the world in the global embrace of some of its distinctive values (e.g., social and legal equality for women, the value and dignity of every human life, etc.). The "Judeo-Christian tradition," the source of those values, has diffused itself as people from Hindu, Buddhist, Sikh, Jain, and other traditions embrace those values.

So while there is some intuitive meaning to the word 'western' (e.g., Shakespeare, Luther, Michelangelo, Leibniz, John Locke, Edmund Burke, etc.), it is nonetheless fraught with vagueness. It carries this ambiguity with itself into the larger meta-concept of WEIRD morality.

The second component of WEIRD morality, education, likewise needs clarification. There are many types of education. Do all of them constitute constituent elements in WEIRD morality? When a *madrasa* (*madrasah* or *medresa*) educates its pupils in the Islamic trilogy of the *Qur'an*, the *Sira*, and the *Hadith*, how does that rote learning compare to a four-year degree in philosophy obtained from a Big Ten university in the United States? The use of the word 'education' within the WEIRD context leaves room for some additional specificity.

The 'I' in WEIRD represents 'industrialized.' Arguably, however, many exemplars of WEIRD morality are found in post-industrial societies. Certain aspects of industrialization might perhaps have an impact on ethical reasoning: concepts like interchangeability could encourage a greater degree of abstraction, and less emphasis on individuality, in moral reflection.

The notion of 'rich' is, like the other words above, to some extent relative. But if there is a more independent social understanding of 'rich,' it might relate to measurable, observable, and quantifiable aspects, like infant mortality, average lifespan, realistic anxiety about starvation, etc.

The final element in WEIRD morality is democracy. This word, too, is subject to a variety of meanings. One misunderstanding of 'democracy' fosters the habit in thought of overestimating the significance of majority or plurality opinion. Mixed with a hyper-Romanticist and post-modern privileging of passion over reason, of emotion over thought, this misunderstanding of 'democracy' grants legislative power to such opinion to establish morality. In extreme cases, such opinion is held to replace morality and ontological reality is denied to morality.

The examination of WEIRD morality, with its weaknesses and strengths, has been encouraged by Jonathan Haidt's book, *The Righteous Mind: Why Good People Are Divided by Politics and Religion*.

6.7 February

6.7.1 Natural Language vs. Artificial Language: The Drive Toward Formalization (2017-02-28 07:05)

Philosophers have long considered the connection between problems and the linguistic expression of those problems. Could it be that some problems reside in language, and not in the states of affairs to which language refers?

Ordinary language contains imprecisions and ambiguities. The structures and mechanisms of natural language have caused confusions and disputes. One example centers on the nouns 'space' and 'time.'

Consider these sentences:

> *Is there enough space in the suitcase for a pair of shoes?*
> *He has space in his car for two more passengers.*
> *How much space is in the storeroom?*

Because we often take nouns as names for objects or substances, these sentences give the impression that 'space' names something which is found in suitcases, cars, and storerooms. This impression could give rise to the formation of sentences like these:

> *Can I take the space out of the suitcase and put it into the car?*
> *Can an astronaut bring some space back to earth with him?*
> *There's a quart of space in the car, and a quart of space in the storeroom; can we exchange them?*

This same type of confusion occurs with nouns like 'time' and 'nothing' and can be traced through the writings of many philosophers. Fridugis (also spelled Fredegis or Fredegisus) wrote an essay titled "On Nothing and Darkness" around 804 A.D.; Hegel and Sartre wrote extensively about nothing.

Likewise, the verb 'to be' causes confusion. Examples like the following lead the reader to infer that 'be' has the algebraic property of transitivity:

> *Fred is a teacher.*
> *Fred is here.*
> *A teacher is here.*

But applying transitivity becomes problematic in examples like this:

My car is red.
My car is capable of going 75 MPH.
Red is capable of going 75 MPH.

These examples, and many others, have led some philosophers to seek a clearer and more precise mode of expression. It was thought that a more rigorous mode of expression would solve, or resolve, some of the questions and problems in philosophy.

This line of thought can be traced back at least as far as Aristotle (ca. 330 B.C.). His work on syllogisms, and his investigation of the verb "be" with its competing senses, manifest the hope that clarified language would lead to clarified thinking and understanding.

The next step is seen in the medieval Scholastics and their development of formal logic, including quantified and modal logics. William of Ockham (also spelled Occam) was among the most noted logicians of the early 1300s.

Gottlob Frege built on the work of John Venn, Charles Lutwidge Dodgson, and others. Frege developed symbolic logic in the 1870s, leaving behind the words and letters of natural language entirely. Symbolic logic raised hopes for higher levels of precision in the expression of propositions and of relations between propositions.

By the early twentieth century a clearly defined group of philosophers was working on language and logic as the keys for solving the major problems of philosophy. Bertrand Russell's *Principia Mathematica*, Wittgenstein's *Tractatus Logico-Philosophicus*, and the works of logicians like Kurt Gödel and Georg Cantor exemplified this shared project.

Of course, not all philosophers were part of this movement, and among those who were part of the movement, there were substantial variations and disagreements. As Garth Hallett writes:

> For Frege, Russell, and others, a perfectly precise and regular linguistic calculus was a desirable possibility or goal; for young Wittgenstein it was a fact and had only to be revealed through an appropriate notation.

A optimism and enthusiasm surrounded some philosophers in this movement. They figured that it was only a matter of time until most, or even all, of philosophy's major questions would be finally and permanently answered by rigorous logical analysis. Logic would avoid the ambiguities of natural language, and it was those ambiguities, they thought, which had created the questions in the first place.

As the exploration of logic continued, however, questions about topics like completeness emerged. Slowly the analytical program unraveled. Logic might end up posing more riddles than it solved.

The movement's initial hopefulness, and even naivety, withered under the discoveries of logicians. A new question emerged: Was the anticipated level of rigor and specificity possible?

Even more: was such an idealized formalism even desirable?

The early phase of Wittgenstein's career was not, strictly speaking, "formalist," in the sense that formalism is a view in the philosophy of mathematics which denies much meaning to mathematical expressions and treats them rather merely as exercises in symbol manipulation according to a set of arbitrarily stipulated rules.

While the early Wittgenstein was not a formalist, he relied to some extent on an analogy between mathematics and natural language, and relied even more on structures and forms to communicate meaning.

As is well known, an entire industry has arisen around the activity of comparing the earlier and later phases of Wittgenstein's career. Garth Hallett argues that Wittgenstein's later work

> is directed against the supposed ideal which underlay both positions and against the pointless proposals and unrealistic analyses to which it gave rise. Ordinary language is no such calculus, nor need it be. In fact the ideal of absolute precision and regularity is ultimately unintelligible.

On Hallett's view, then, Wittgenstein is rejecting both the view that "a perfectly precise and regular linguistic calculus was a desirable possibility or goal," and the view that such a calculus was already latently present "and had only to be revealed."

Among the competing views of the relationship between the early Wittgenstein and the late Wittgenstein, one central question is the extent to which the late views reject the early views, and the extent to which the late views see themselves as somehow continuing, or being founded on, the early views.

In any case, the late Wittgenstein in general, and much of later twentieth century philosophy with him, continued to see great importance in language, but sought to explore language less along the lines of an analogy between language and mathematical logic, and more along the lines of language as a social and anthropological phenomenon.

7. 2016

7.1 December

7.1.1 Pseudo-Aristotle on Xenophanes (2016-12-01 12:24)

Among the pseudepigrapha attributed to Aristotle, but most probably written by someone else, is a famous treatise dealing with Melissus, Xenophanes, and Gorgias. Melissus was a pre-Socratic philosopher living on the island of Samos; he did his work in the mid-400s B.C., and was a follower of Parmenides.

Gorgias lived in Sicily, and was likely a contemporary of Socrates; he apparently relocated to Greece, and died there around 375 B.C.

Xenophanes is the most well-known of the three, a pre-Socratic from Ionia who also travelled around Greece. He is thought to have died around 478 B.C.

Questions about the pseudo-Aristotelian text include: Who wrote it? When was it written? Where? What did the author know about Xenophanes? How accurately did the author explain the views of Xenophanes?

Famously, Xenophanes asserted, and possibly introduced, a strikingly modern concept of God. Pseudo-Aristotle asserts that Xenophanes argued for the eternal origin of God (977a14).

> Xenophanes declares that if anything is, it cannot possibly have come into being, and he argues this with reference to God, for that which has come into being must necessarily have done so either from that which is similar or from that which is dissimilar; and neither alternative is possible.

On the principle of "like begets like," God must have existed for eternity, because anything which could give rise to God would have to be like God. A chicken can produce another chicken, and tree can produce another tree, but this might not be the case with God, to whom Xenophanes might attribute omnipresence, invisibility, omniscience, omnipotence, etc.

Exactly which properties Xenophanes attributes to God is an interpretive question with a plurality of plausible answers, and some details may be lost to history, but the general tenor of his views will have been something similar to what is mentioned above.

Xenophanes might be characterized as arguing that to have a beginning, i.e. to have been begotten or created or generated or produced, is a limitation which is incompatible with his concept of God as unlimited. To be sure, Xenophanes doesn't use the word 'unlimited' in any surviving texts, and so this is already to some extent an interpretation, but a reasonable one.

Pseudo-Aristotle continues:

> For it is no more possible for like to have been begotten by like than for like to have begotten like (for since they are *equal*, all the same qualities inhere in each and in a similar way in their relations to one another), nor could unlike have come into being from unlike.

It is noteworthy that pseudo-Aristotle does not comment on the explicit or implicit monotheism of Xenophanes. Many among both the pre-Socratic and Classical Greek philosophers were, if not detailed monotheists, probably functional monotheists.

Readers sometimes perceive Aristotle, and the Greek philosophers, through the lens of the oft-repeated maxim that Greeks were polytheists. While there is some reason to doubt that the Greeks, taken as a whole, were as polytheistic as is sometimes assumed, there is much more reason to doubt this about the philosophers, both pre-Socratic and later.

> For if the stronger could come into being from the weaker, or the greater from the less, or the better from the worse, or conversely worse things from better, then what is not could come to be from what is, or what is from what is not; which is impossible. Accordingly for these reasons God is eternal.

If we accept pseudo-Aristotle as a reliable historian, then Xenophanes is explicit both in his monotheism and in his declaration that God is eternal - more specifically, that God has no finite starting point in time, and no progenitor.

The pseudepigraphic text also seems to claim that Xenophanes asserts that God is omnipotent. Additionally, and mysteriously, pseudo-Aristotle attributes to Xenophanes the assertion that God is spherical.

Perhaps this sphericality is to be understood as an attempt to conceptualize omnipresence in an infinite cosmos. If not infinite in space, perhaps Xenophanes conceived of the universe as infinite in other ways. It is not clear that Xenophanes is arguing for, or against, a cosmos that is spatially or otherwise infinite. Some other pre-Socratics asserted a type of pantheism, identifying God with the universe and the universe with God, and arguing that the cosmos could see and hear. Perhaps Xenophanes was in some way influenced by these colleagues.

7.2 November

7.2.1 The Valuation of Values: Corporate vs. Individual (2016-11-30 15:41)

There is an immense quantity and range of values which can be incorporated into, and prioritized within, an ethical system. One need merely think of a list of virtues (honesty, charity, loyalty, courage, etc.), or a list of people and things which one can hold dear (family, friends, comrades, nations, God, etc.).

Values can be held either individually or corporately. To be sure, there are public implications which follow from individual values. If an individual places a high value on cannibalism, she or he may find tensions with neighbors. But the value of cannibalism will, despite its communal effects, remain an individual value.

The effects of corporately-held values on individuals is stronger than the effects of individually-held values on the community.

Because of this asymmetry, corporate values constitute limiting factors on the range of values which an individual may pursue. The communal values do not limit the values which an individual may hold, in the sense that private thoughts and valuations, *qua* private, elude detection and control by the community.

But the communal values can limit concrete actions, and thereby frustrate the values which motivate such actions. The cannibal, e.g., may find his efforts to act on his values frustrated by his neighbors, even though he is free to privately hold such values.

Most, or perhaps all, values are therefore more effective when held communally instead of individually.

There exists, then, a difference in the levels of significance which a value has, depending on whether it is privately or corporately held. This difference, however, may vary among values.

One value may be only slightly more efficacious when held corporately than when held privately, while another value may be much more impactful when communally held than when privately held.

To be sure, there is the question of how one might observe, measure, or quantify the efficaciousness of a value.

The values of liberty and freedom, in particular, would seem to be values which have a much greater impact when corporately held than when privately held.

In order for an individual to act on her or his values, in any non-trivial sense, there must be, with logical and temporal priority, a corporately-held value of liberty and freedom.

In a society which perceived no value whatsoever in freedom or liberty, the individual could act on her or his values only in the trivial case in which the individual's values were identical with the community's.

The community's ability to police and enforce its values would determine the extent to which it would be possible for the individual to act upon her or his personally-held values. A community, e.g., which saw no value in freedom or liberty, but which was very bad at policing and enforcing its values, might unintentionally allow individuals to pursue their own personal values.

In any non-trivial case, however, communities have some ability to police and enforce. In many cases, communities have significant abilities to police and enforce.

In order to allow individuals have a maximal range of personal values, it is necessary for a society to place a high value on freedom and liberty.

A society which values regulation and intervention will therefore limit the range of personal values on which individuals may act.

7.3 October

7.3.1 Greek Philosophy's Big Turning Point (2016-10-09 14:44)

Sometime around 590 B.C., give or take a few years, Thales of Miletus did the work which made him known as the first philosopher.

It's possible that there were others before him, but we have no evidence of them. So most historians are content to say that philosophy began with Thales.

To be sure, there are alternative views. A more modest, and almost universally accepted claim, is that Greek philosophy began with Thales. That allows for Hebrew or Sanskrit thinkers who may have philosophized a few centuries earlier.

Greek philosophy continued for the next 150 years or so, filling the 'pre-Socratic' era. Many of this first wave of Greek philosophers did not live in Greece, but rather in Greek settlements on

islands in the Mediterranean, in southern Italy, or in Ionia. (Ionia is a western coastal region in Turkey.)

The pre-Socratic philosophers explored topics often related to time, space, mathematics, and physics. They were interested in cosmology and logic.

The focus and location of Greek philosophy would change.

Geographically, this second wave of Greek philosophers - the 'classical' philosophers - would be located in Greece.

In terms of their content, these classical thinkers turned away from the abstract topics of pure philosophy and toward social, political, moral, and ethical matters.

This trend began with Socrates. He'd been a soldier in the Peloponnesian War (431 to 404 B.C.). The war and the political rhetoric surrounding the war posed problematic questions.

Cognitive dissonance arose from ethically questionable Athenian actions: extorting cash and goods from other Greek city-states.

Following Socrates, Plato and Aristotle would also wrestle with such questions.

In the 'classical' era, philosophers addressed questions about justice and about an ideal society. The problems of the time lured them away from the more disciplined and less dramatic questions of the pre-Socratics.

7.4 September

7.4.1 Does Empiricism Sire Utilitarianism? (2016-09-27 10:32)

Taking J.S. Mill as an example, there seems to be a rough correlation between empiricism and utilitarianism. To be sure, there are many exceptions and ambiguities in this thesis.

John Locke, for example, is clearly an empiricist and clearly not a utilitarian. Yet in his political thought, there may be discerned, in the notions of majority rule and popular sovereignty, at least room for a type of utilitarian calculus.

David Hume, too, is an empiricist without being a utilitarian. Yet Hume uses the word 'utility' to express his emotivist view of ethics.

What is the connection, then, between utilitarianism and empiricism? If empiricism is generally allergic to metaphysics, then it will seek an ethical system which minimizes ontological commitments.

An empiricist would, presumably, flee in horror from a Platonic ethical schema which includes the existence of something called 'the Good' and includes the existence of numerous 'ideal forms.'

Empiricism also is attracted toward observation, measurement, and detection. Utilitarianism, despite the notorious difficulty of trying to quantify utility, looks to somehow observing and comparing the utilities of different possible courses of actions.

Significantly, in that part of Copleston's history titled "British Empiricism," the first chapter is titled "The Utilitarian Movement." In that chapter, he writes:

The first phase of nineteenth-century empiricism, which is known as the utilitarian movement, may be said to have originated with Bentham. But though we naturally tend to think of him as a philosopher of the early part of the nineteenth century, inasmuch as it was then that his influence made itself felt, he was born in 1748, twenty-eight years before the death of Hume.

Certainly, antecedents of both empiricism and utilitarianism are found well before the nineteenth and eighteenth centuries. The traditional roots of empiricism are found in Epicurus and Aquinas. Although it is common to classify Aristotle as an empiricist, there are reasonable arguments which place him outside the mainstream of empiricism.

Unsurprisingly, then, Epicurus is also seen as a historical antecedent of utilitarianism, along with Aristippus. Copleston writes about Bentham:

And some of his works were published in the last three decades of the eighteenth century. It is no matter of surprise, therefore, if we find that there is a conspicuous element of continuity between the empiricism of the eighteenth century and that of the nineteenth. For example, the method of reductive analysis, the reduction, that is to say, of the whole to its parts, of the complex to its primitive or simple elements, which had been practised by Hume, was continued by Bentham. This involved, as can be seen in the philosophy of James Mill, a phenomenalistic analysis of the self. And in the reconstruction of mental life out of its supposed simple elements use was made of the associationist psychology which had been developed in the eighteenth century by, for instance, David Hartley, not to speak of Hume's employment of the principles of association of ideas. Again, in the first chapter of his *Fragment on Government* Bentham gave explicit expression to his indebtedness to Hume for the light which had fallen on his mind when he saw in the *Treatise of Human Nature* how Hume had demolished the fiction of a social contract or compact and had shown how all virtue is founded on utility. To be sure, Bentham was also influenced by the thought of the French Enlightenment, particularly by that of Helvetius. But this does not alter the fact that in regard to both method and theory there was a notable element of continuity between the empiricist movements of the eighteenth and nineteenth centuries in Great Britain.

By contrast, those philosophers whose epistemology leans toward rationalism, or at least away from empiricism, tend to develop ethical systems which are not utilitarian.

An appeal to utility is ultimately an appeal to sense-data. A philosopher with ontological commitments to metaphysical entities - things not detectable, not directly or indirectly detectable, not in principle detectable by the senses - tends to conceive ethical systems which do not rely primarily, or exclusively, on *a posteriori* knowledge.

An empiricist, having to varying extents ruled out metaphysical objects, or at least having ruled out allowing metaphysical objects to play foundational roles in his system, has no alternative to but to use sense-data as the primary source of knowledge for his system. Such a system with therefore probably be utilitarian in nature.

7.5 May

7.5.1 Theories about Theories: Types of Theories and Competing Theories
(2016-05-04 10:38)

Although people often use the word 'science' in ordinary, everyday language, its definition is not a simple matter. By 'science,' people usually mean 'observational science' or 'empirical science' or 'natural science,' as opposed to other types of science.

Such science possesses, first, a set of reports: what has been measured, recorded, or otherwise perceived. We might term these 'observation statements.'

A long catalogue of observation statements, however, does not by itself constitute a science. A science possesses, second, a conceptual framework which organizes, sorts, or explains these observations.

We can understand, then, what is not a science. A data-base, a massive amount of recorded measurements, is by itself not a science: it lacks a conceptual structure.

Conversely, an *a priori* conceptual framework, a structure of ideas without any sense-data or empirical observations connected to it, is also not a natural science (or an empirical science, or an observational science), although it might be some other type of science.

Paul Davidson Reynolds proposes a taxonomy of scientific structures, categorizing the possible types of conceptual frameworks which one might add to data in order to generate a science:

> Scientific knowledge is basically a collection of abstract theoretical statements. At present, there seem to be three different conceptions of how sets of statements should be organized so as to constitute a "theory": (1) set-of-laws, (2) axiomatic, and (3) causal process.

We might acknowledge two aspects to scientific knowledge. One aspect is concrete observations, ultimately the product of sense-data, which are measurable and quantifiable. Another aspect is theoretical: the systematic organization of these empirical perceptions.

A simple example might be seen on a Cartesian plane: individual observations are represented by dots (x,y); theory is represented by a "best-fit line" or "best-fit curve."

It is significant that more than one theory can be paired with a set of observations: data can underdetermine the choice of theory. How does one choose between two competing theories, both of which correspond to the measurements? Or must one choose?

To extend our example, image a set of dots on the Cartesian plane, a set for which there might be more than one "best-fit curve," where both curves have an equal degree of correspondence to the points.

Multiple best-fit curves can result either from the location of the points, or from competing methods of generating the best-fit curve. It would be necessary to distinguish between trivial non-trivial cases of sets with more than one best-fit curve.

> Three conceptions of theory have been discussed: the set-of-laws form, or the view that scientific knowledge should be a set of theoretical statements with overwhelming empirical support; the axiomatic form, or set of theoretical statements, divided into axioms and propositions, those statements that can be derived from the axioms;

the causal process form, or sets of statements organized in such a fashion that the causal mechanism between two or more concepts is made as explicit as possible. It may be possible to present the statements of some axiomatic theories in causal process form.

Most interesting are the theories which, as Paul Davidson Reynolds notes above, might simultaneously satisfy the conditions for more than one of the three conceptions of theory.

Richer and more complex theories, rather than the simple example of a best-fit curve, offer examples of each of the three conceptions of theory.

7.6 March

7.6.1 The Truth about Truth: Ayer on Knowledge (2016-03-10 05:54)

One beginning point for philosophizing is to inquire about the nature of knowledge. What does it mean to know something?

One frequent textbook definition of 'knowledge' is that it is a justified true belief. Each of the three parts of that definition can be understood in light of its negation: I can't be said to know something if I don't believe it, or if I lack any justification for that belief, or if the belief is untrue.

Linguistically, the English language refers to distinctly different types of knowledge with the same one word. This leads to confusions.

Compare 'I know my friend Tom well' with 'I know that 37 times 7 is 259.'

Both proposition include the word 'know,' but it seems that the word does not refer to the same state. One is a familiarity or acquaintance with a person, place, or thing. The other is the possession of some mental content.

If there are different types of knowledge, then we might ask, what do they have in common, and what distinguishes them? Is truth a part of every different form of knowledge?

Truth seems to be explicitly or implicitly a part of most attempts to define 'knowledge.' If something is not true, then I usually cannot be said to know it. Propositions like 'I know that 4 plus 9 is 37' appear to us to be misuses of the word 'know.'

It is difficult to conduct an investigation of knowledge without simultaneously conducting an investigation of truth. Just as there are competing understandings of knowledge, so there are competing understandings of truth.

A typical textbook explanation of knowledge relies on the concept of correspondence. According to this 'correspondence theory of truth,' a proposition is true if, and only if, it corresponds to the situation which it claims to represent.

One competing understanding of truth is represented by Martin Heidegger. He used the word 'aletheia' meaning 'not hidden' or 'uncovered.' Heidegger's understanding of truth was not so much it corresponded to reality, but rather that it disclosed reality.

While Heidegger's writings on truth are significant in the history of philosophy, and indicate a line of thought worth investigating, the mainstream of philosophy in Europe and North America during the twentieth century tended toward other understandings of truth. As a representative of British and analytical philosophies, the empiricist A.J. Ayer wrote:

> I conclude then that the necessary and sufficient condition for knowing that something is the case are first that what one is said to know be true, secondly that one be sure of it, and thirdly that one should have the right to be sure. This right may be earned in various ways; but even if one could give a complete description of them it would be a mistake to try to build them into the definition of knowledge, just as it would be a mistake to try to incorporate our actual standards of goodness into a definition of good. And this being so, it turns out that the questions which philosophers raise about the possibility of knowledge are not all to be settled by discovering what knowledge is. For many of them reappear as questions about the legitimacy of the title to be sure. They need to be severally examined; and this is the main concern of what is called the theory of knowledge.

What Ayer calls the 'theory of knowledge' is perhaps more commonly known as epistemology. Just as it is difficult to discuss knowledge without also examining the notion of truth, so also questions about language invite themselves into the investigation.

Truth is generally understood to be a property of a proposition. Can a sentence, which is a linguistic artifact which represents a proposition, also be true?

One can know a proposition, and the proposition can be true, but it is a further step to know that a proposition is true. Presumably, one cannot know that a proposition is true without first having understood the proposition.

Someone can teach me to make a series of sounds, or a series of ink marks on paper, and tell me that they are a sentence which in turn represents a proposition, and that the proposition is true. I might take his word for it, and believe all this. Finally, he might be right, which would in turn make me right. But I could not be said to 'know' or to 'understand' the sentence or the proposition.

7.7   January

7.7.1   Science or Medicine? (2016-01-17 07:13)

To compare the words 'biology' and 'medicine' is at once to encounter the question, posed in this case by Siddhartha Mukherjee, of whether medicine is a science.

Those who work in some educational institutions will find this question bizarre, because the assumption that medical activity is scientific activity has long been in place.

The alternative is perhaps to view medicine as a skill, a craft, an art. Lying at the core of the question is, of course, the definition of 'science.'

Siddhartha Mukherjee begins with a somewhat belabored comparison of 'science' and 'scientific,' but makes the important point that merely being technological, or applying technology, does not by itself qualify an activity as science.

> Is medicine a science? If, by *science*, we are referring to the spectacular technological innovations of the past decades, then without doubt medicine qualifies. But technological innovations do not define a science; they merely prove that medicine is scient*ific* - i.e., therapeutic interventions are based on the rational precepts of pathophysiology.

One feature of science, he argues, is that it has laws, or identifies lawlike regularities. Mathematics and some branches of physics are here paradigmatic.

> Sciences have laws — statements of truth based on repeated experimental observations that describe some universal or generalizable attributes of nature. Physics is replete with such laws. Some are powerful and general, such as the law of gravitation, which describes the force of attraction between two bodies with mass anywhere in the universe. Others apply to specific conditions, such as Ohm's law, which only holds true for certain kinds of electrical circuits. In every case, however, a law distills a relationship between observable phenomena that remains true across multiple circumstances and multiple conditions. Laws are rules that nature must live by.

Mathematics and physics are abstract and conceptual. As sciences become more concrete - more tied to empirical observation - their 'scientificness' decreases.

Imagine, if you will, the differences you might encounter in scientific texts over a fifty-year span of time. If you looked at a chemistry textbook published today, and you find a precise measurement of the atomic mass of an element, say Osmium, and it was so precise that it went to ten or twenty or even thirty decimal places, then you would have the most precise empirical data available.

But continue to imagine that fifty years later, another chemistry textbook was published. It might also list the atomic mass for the same isotope of Osmium, but quite conceivably, at the very last digit of the ten or twenty or thirty decimal places, there might be a difference between the later book and the earlier book.

There might have been some revision based on more careful experiments, based on new instrumentation, based on new understandings of how to get the most accurate value.

Far from being unusual, such revision of values is in fact part of empirical or observational science.

By contrast, imagine two mathematics books published fifty years apart: there will be no difference, no revision, in the quadratic formula or the Pythagorean theorem.

This difference, in our little imaginary thought experiment, between mathematics and chemistry, gives us an insight into laws, lawlike correlations, and science - although this does not yet fully explain what it is to be a science.

> There are fewer laws in chemistry. Biology is the most lawless of the three basic sciences: there are few rules to begin with, and even fewer rules that are universal. Living creatures must, of course, obey the fundamental rules of physics and chemistry, but life often exists on the margins and in the interstices of these laws, bending them to their near-breaking limit. Even the elephant cannot violate the laws of thermodynamics — although its trunk, surely, must rank as one of the most peculiar means to move matter using energy.

Surely chemistry and biology - along with the less abstract and more empirical, applied, and experimental aspects of physics - are sciences, even if they are a bit fuzzy around the edges.

We are tempted to say, "They are sciences because they have laws." But we must first ask if everything that is a science has laws, and then we must ask, if everything that has laws is a science.

Does medicine have laws? Siddhartha Mukherjee asks this question, because it will go a long way toward deciding whether medicine is a science.

Medicine has general rules and practices and guidelines, but does it have laws?

> But does the "youngest science" have laws? It seems like an odd preoccupation now, but I spent much of my medical residency seeking the laws of medicine. The criteria were simple: a "law" had to distill some universal guiding principle of medicine into a statement of truth. The law could not be borrowed from biology or chemistry; it had to be specific to the practice of medicine.

If medicine does have laws, would they be in some essential way different than the laws of the various sciences? Medicine is applied: the essence of medicine is to *do* something, while sciences are essentially about *knowing* something.

To phrase it another way, do applied sciences have their own laws, distinct from pure sciences? Siddhartha Mukherjee writes:

> I was genuinely interested in rules, or principles, that applied to the practice of medicine at large.

Consider for titles of well-known journals like *Pure and Applied Mathematics*. Consider that branch of physics which studies electromagnetism compared with the profession of being an electrician. Consider biology and medicine.

In each of these pairs of pure and applied science, do we find that the applied version of the science has its own laws, or does it merely help itself to the laws of its pure sibling?

> Of course, these would not be laws like those of physics or chemistry. If medicine is a science at all, it is a much softer science. There is gravity in medicine, although it cannot be captured by Newton's equations. There is a half-life of grief, even if there is no instrument designed to measure it. The laws of medicine would not be described through equations, constants, or numbers. My search for the laws was not an attempt to codify or reduce the discipline into grand universals. Rather, I imagined them as guiding rules that a young doctor might teach himself as he navigates a profession that seems, at first glance, overwhelmingly unnavigable. The project began lightly — but it eventually produced some of the most serious thinking that I have ever done around the basic tenets of my discipline.

Siddhartha Mukherjee introduces the distinction between 'science' and 'soft science,' and even then wonders "if medicine is a science at all." Crucially, he notes the lack of quantifiability in anything which might present itself as a 'law of medicine.'

Although modern medicine is conducted with endless quantifications and measurements, the core of practice, medical decision-making, is non-numerical. There is some skill of judgment, of non-quantified reasoning, which the medical practitioner has.

We will leave the question unanswered, whether medicine is a science, but the consideration of the question gives opportunities for insights nonetheless.

8. 2015

8.1 November

8.1.1 Locke, Medicine, and Bacon (2015-11-27 13:58)

Among the unpublished posthumous papers of John Locke is a manuscript titled, variously, either *Ars Medica* or *De Arte Medica*, and dated, by Henry Richard Fox Bourne, to approximately 1669.

This text is of interest because it represents a point of contact between Locke's empirical epistemology and the mundane concerns of utilitarian medicine. It is a point, so to speak, at which the theoretical meets the practical.

Locke points out that medicine, being an applied and concrete craft, was perhaps more susceptible to the natural, cultural, and subconscious influences which can distort reasoning. There might be a parallel here between Locke's critique of medical thinkers and Francis Bacon's identification of four sources of error in logic.

Because these earlier thinkers seemed unaware of these error-inducing influences, and took no measures against them, Locke finds most of what has been written about medicine to be, at the least, built on unsteady groundwork:

> If, therefore the learned men of former ages employed a great part of their time and thoughts in searching out the hidden causes of distempers, were curious in imagining the secret workmanship of nature and the several imperceptible tools wherewith she wrought, and, putting all these fancies together, fashioned to themselves systems and hypotheses, 'tis no more to be wondered at or censured that they accommodated themselves to the fashion of their times and countries, and so far complied with their most natural inclinations as to desire to have some basis to rest their thoughts upon, and some grounds to guide them in the practice of their art. Their being busy and subtile in disputing upon allowed principles was but to be employed in the way of fame and reputation and the learning valued in that age; and that their practice extended no farther than the sacred principles they believed in would permit, is no more to be admired than that we find no fair and lasting fabrics left to us by our ancestors upon narrow and unsound foundations.

Locke hastens to add that he respects these earlier writers, despite the flaw in their writings which he is identifying, because they catalogued a significant body of observations, and developed laws based on correlation.

Those writings, however, are saturated with unmerited conjectures which, left uncorrected, will lead readers astray:

> I would not be thought here to censure the learned authors of former times, or disown the advantages they have left to posterity. To them we owe a great number of excellent observations and several ingenious discourses, and there is not any one

rule of practice founded upon unbiased observation which I do not receive and submit to with veneration and acknowledgment; yet I think I may confidently affirm that the hypothesis which tied the long and elaborate discourses of the ancients, and suffered not their enquiries to extend themselves any farther than how the phenomena of diseases might be explained by those doctrines and the rules of practice accommodated to the received principles, has at last but confined and narrowed men's thoughts, amused their understanding with fine but useless speculations, and diverted their enquiries from the true and advantageous knowledge of things.

Locke seems, then, to be engaged in a Baconian task: freeing an observational empirical science, or the applied form of it, from systematic methodological shortcomings which nudge it toward error, or at least toward unfounded hypotheses.

The reader might further wonder if Locke were directly inspired by Bacon's texts to this task, or whether he were indirectly inspired as Bacon's influence came down through other thinkers like Robert Boyle, or whether Locke happened upon the same concerns independently by coincidence. Peter Anstey writes:

> There is sufficient evidence to claim that Locke owed a significant debt to Bacon's conception of how natural philosophy should be done.

Concerning the connection, if any, between Locke and Bacon, Anstey notes:

> So it would appear that Locke's comments on method in natural philosophy, whatever their peculiarities, stand in a tradition stretching back to Bacon. Yet surprisingly, John Locke and Francis Bacon are not normally associated with each other. There are few references to Bacon in Locke's writings and the weight of scholarship seems to lean to the view that Bacon had little, if any, influence on Locke.

Anstey goes on to cite an article by John R. Milton about the influence of Bacon on Locke:

> It should be pointed out that Milton also claims that the quantity of Bacon's books owned by Locke is "strong prima facie evidence that Locke was interested in the thought" of Bacon and that parallels in the intellectual content and stylistic expression of Bacon and Locke suggest Bacon as a source of influence on Locke.

That there are points of comparison between Locke and Bacon is clear; there are doubtless points of contrast, as well. It seems that at least some of Bacon's influence on Locke was direct; we know that Locke was aware of Bacon and had read some of Bacon's texts.

The flaws which Locke notes can be understood to correlate with Bacon's four sources of experimental error.

There should therefore be no surprise that Locke's writings about medicine have a Baconian flavor.

8.2 October

8.2.1 Finding the Old Kant in the Young Kant's Texts (2015-10-08 13:44)

Immanuel Kant published his *Kritik der Reinen Vernunft* in 1781, when he was approximately 57 years old. He was born in 1724. The book, known also by the English translation of its title, *The Critique of Pure Reason*, took Kant from obscurity to fame, and constitutes a major turning-point in the history of philosophy.

Prior to this publication, the few who knew Kant respected him and regarded him as brilliant. Most of his publications until this point, however, had been less remarkable.

In hindsight, scholars have found indications in some of those early writings which point toward the development of what would become Kant's trademark thinking. The centrality of space and time, and Kant's distinctive understanding of them, appear, at least in part, in passages like this:

> They who hold this disquisition superfluous are confuted by the concepts of space and time, conditions, as it were, given by their very own selves and primitive, by whose aid, that is to say, without any other principle, it is not only possible but necessary for several actual things to be regarded as reciprocally parts constituting a whole.
>
> *Qui hanc disquisitionem insuper habent, frustrantur conceptibus spatii ac temporis, quasi condicionibus per se iam datis atque primitivis, quarum ope, scilicet, absque ullo alio principio, non solum possibile sit, sed et necessarium, ut plura actualia se mutuo respiciant uti compartes et constituant totum.*

Kant's peculiar doctrine that time and space are not only somehow products of the rational mind, but also the instruments by which that mind processes sensations into perceptions and ultimately forms concepts, is not only one of the foundational cornerstones of Kantian metaphysics, but rather also represents a possibility of moving beyond the stalemate which existed between Newton's view of space and Leibniz's view of space.

One scholar, J.H.W. Stuckenberg, sees one of Kant's early publications, titled *De Mundi Sensibilis atque Intelligibilis Forma et Principiis*, as a turning point both in Kant's career and in the written expression of Kant's characteristic thought. Stuckenberg writes:

> In order that he might become a professor, it was necessary for him again to present a Latin dissertation. In its subject and treatment the one prepared for this occasion was worthy of the man who was called to teach metaphysics, and it is historically significant from the fact that in it Kant for the first time publicly gave some of the most important principles afterwards developed in the "Kritik." It was a discussion of the difference between sensation and understanding, with the title, "The Form and Principles of the World of Sense and of the Intellect."

Kant's thought took shape over time, as John Henry Wilbrandt Stuckenberg traces it through Kant's correspondence.

There is some orthographic ambiguity surrounding Stuckenberg. It probably started as Johann Heinrich Wilbrandt, but might also have been Johannes. Wilbrandt also occasionally appears as Wilbrand (without the 't') or even as Wilburn. Sometimes the 'l' is doubled to Willbrandt, Willbrand, or Willburn.

Kant understandably saw his *Kritik* as properly not being metaphysics, but rather as something logically prior to metaphysics, a foundation which would make metaphysics possible and determine its scope, limits, and methods. Stuckenberg writes:

> Kant's correspondence also indicates that he frequently changed his plans. When the book was already in press, he wrote to Herz that the "Kritik" "contains the results of all kinds of investigations, which began with the ideas which we discussed under the title of the *Mundi Sensibilis and Intelligibilis*" referring to his Inaugural Dissertation. At other times he expected to limit the contents much more. It may surprise some that at any time Kant regarded such a "Kritik" as lying outside of the sphere of metaphysics; but this significant passage occurs in a letter written to Herz in the winter of 1774-75: "I shall rejoice when I have finished my transcendental philosophy, which is really a critique of pure reason. I shall then work on metaphysic, which has only two parts, namely, the metaphysic of nature and that of morals, of which I expect to publish the latter first ; and I already rejoice over it in anticipation." At this time, therefore, he held the view which he also held for years after the "Kritik" appeared, that it was only the preparation for metaphysics; nevertheless he regards it as belonging to transcendental philosophy. His letters and books, together with his last manuscript, show that his view of metaphysic was subject to numerous changes.

Kant's development, then, demonstrates a number of changes in his views, but also a continuity from his 1770 publication, and perhaps from even earlier writings.

It is, of course, a matter of close textual reading to determine to which extent scholars find forerunners of Kant's critical philosophy in his pre-critical writings, and to which extent scholars read into those early texts ideas which might not actually be there. But an evenhanded reading of the 1774/1775 letter by Kant to Herz clearly manifests, as Stuckenberg notes, the mature Kantian view.

8.3   July

8.3.1   Unraveling Morality from Religion (2015-07-01 07:31)

There is ever a great gap between the philosopher's careful use of words and the sensationalistic verbiage of the popular press. The reader will see this clearly when it comes to questions of religion and morality.

At the outset, it may be stipulated that religion and morality are two different and distinct things. A man's religion underdetermines his morality, and his morality underdetermines his religion: merely because he tells me that he is follows a certain religion, I cannot deduce from that his morality; and because he tells me that he holds to a certain morality, I cannot deduce from that his religion.

Writing about the controversial political questions of our day - abortion, homosexuality, race relations - the popular news media habitually assert an automatic and invariable connection, correlation, and causality between religion and morality. In such narratives, the words "religious" and "Christian" are meant to describe, not spiritual worldviews, but rather specific moral prescriptions or proscriptions.

Put simply: on many, if not all, moral questions, one can find atheists on both sides, Christians on both sides, Jews on both sides, Hindus on both sides, Buddhists on both sides, and Muslims on both sides. The same is true of Sikhs, Jains, Jehovah's Witnesses, Mormons, etc.

Contrary to the impression given by the contemporary newspapers, there are pro-life atheists and pro-abortion Christians. In elections about normalizing homosexual relationships, in various of America's fifty states, significant numbers of atheists have voted in favor of the standard definition of marriage as one man and one woman, while significant numbers of Christians have voted against it.

In short, the news media assert a relationship between religion and morality which simply does not exist.

The ubiquity of the popular press's assertion, however, has clouded the logic of ethical reasoning.

Consider, e.g., the writing of Supreme Court Justice Scalia in *Lawrence v. Texas*, a 2003 case. Note his studious avoidance of any religious vocabulary:

> Many Americans do not want persons who openly engage in homosexual conduct as partners in their business, as scoutmasters for their children, as teachers in their children's schools, or as boarders in their home. They view this as protecting themselves and their families from a lifestyle that they believe to be immoral and destructive. The Court views it as "discrimination" which it is the function of our judgments to deter. So imbued is the Court with the law profession's anti-anti-homosexual culture, that it is seemingly unaware that the attitudes of that culture are not obviously "mainstream"

A precise use of vocabulary is necessary to properly distinguish, then, between moral questions and religious questions. Definitions of moral or religious concepts should be carefully formulated.

The confusion of these two categories - religion and morality - in ubiquitous in vernacular usage. The borderline between the two is habitually blurred.

It is true, admittedly, that there are certain points of connection between religion and ethical, or meta-ethical, considerations. But that connection is not as determining as is commonly supposed.

This clarification can proceed by conducting moral analyses, as far as possible, without reference to religion. Likewise, religious analyses should be conducted, to the extent possible, without consideration of morality.

If these investigations refer to each other only when necessary, it will become clear how seldom such necessity occurs.

8.4 June

8.4.1 Gender Identity (2015-06-16 12:57)

Two of the many tasks surrounding the topic of gender are the task of definition, and the task of sorting out which aspects of gender are fixed independently of any one person or of any one person's experience.

These tasks are complicated by the wide, constantly changing, inconsistent, and mutually in-compatible usages found in the popular press and in casual conversation in society about this topic.

At the very outset, then, of this task, the philosopher faces a dilemma. He can begin by exam-ining ordinary actual usage of words like 'gender' and 'sex' and 'male' and 'female' - and soon find himself in an unwieldy swamp of definition and idiom.

The other option is to largely ignore popular usage, and to begin with a few definitions which are taken as axiomatic.

One example of the contradictions which quickly emerge when studying common usage is that one dictionary defines 'gender' as a social and cultural distinction between male and female, while defining 'sex' as the biological distinction. Yet a biology textbook may define 'gender' as the biological grouping of male or female, and 'sex' as activity relating to procreation.

With such rampant inconsistency in usage, sorting out a definition becomes a difficult chore.

Turning to the other task, a philosopher asks, which aspects of such identity are independent of the individual and his experience? This question can be rephrased in slightly different ways: one can ask about the objective versus the subjective distinction between male and female; one can ask about the physiological versus the psychological distinction; or one can ask about whether the various elements of such a distinction are knowable *a priori* or *a posteriori*.

Several bits of data form traditional points of departure for such discussion. First, one the level of cellular structure, genetic information codes an individual's gender, independently of that person's experiences, prior to that person's conscious conceptualization of gender, and immutably. No gender reassignment therapy can change an individual's gender at the level of DNA. (Mitochondrial DNA is a definitive gender differentiator.)

Note here that 'gender' has entered the discourse, despite not yet having obtained a work-ing definition. Note also that "experience" includes emotions, intuitions, physical actions and interactions, as well as social and cultural settings.

Second, certain bone structures are determined by, and reveal, gender. Archeologists and paleoanthropologists can determine the gender of human remains given no more than a few bones from a skeleton. A scientist can discover the gender of a long-deceased individual, given a fibula, a tibia, a humerus, a radius, an ulna, and maybe a rib, an anklebone, or a finger.

Third, male brain anatomy and female brain anatomy differ measurably and significantly. Not only is the anatomy quite distinct, but also the physiology is quantitatively and observably di-vergent. The study of the differences between the male and female amygdala and hippocam-pus has become an entire academic discipline unto itself.

Both the differences in bone structure and in brain functionality are impervious to any at-tempted gender reassignment.

By contrast, other aspects of gender are social and cultural artifacts, formed by convention, and susceptible to change. Traditional associations of color - pink for girls, blue for boy - or fashion - girls have long hair, boys have short hair - are neither *a priori* nor necessary. They are mutable.

One area for investigation is, then, the distinction between those gender and sex differentiators which are necessary and immutable, and those which are merely cultural conventions.

There are those who would make the claim that most, or even all, of what we call 'gender' or 'sex' is a social construct: that it has no objective basis in physical reality. In the words of a 2015 report issued in Missouri:

This is an element of what is sometimes referred to in gender studies as the "social constructionism" movement in psychological theory.

The notion that gender is a social construct entails that it is thoroughly mutable, and that statements about gender identity are incorrigible. Statements made by individuals who "identify as" one gender or the other would therefore be allowed to stand, and no argument against such statements would be possible.

"Gender" has become a matter of uncertainty. Rather than male or female, many see gender as a relative matter, or even a continuum. They consider gender or sexual identity to be less a reality given at conception than a matter of personal discovery. Reflective of such a theoretical perspective, increasing attention is also given to individuals who are *personally* uncertain about their own gender or sexual identity — in particular, individuals who are "transsexual" or "transgendered," as well as those who identify themselves as "bisexual" or are "questioning" their gender and in the process of determining what they perceive to be their true gender identity.

Yet not only does empirical evidence in the physical realm speak of a gender identity which is temporally and logically prior to an individual's self-identification, but data from the psychological realm also presents a case for gender which is independent of the individual's "identifying as" one gender or the other.

Across all demographic variables, males more than females are likely to commit violent crime. This probability is by a significant statistical margin.

Separately, learning styles between the genders are markedly different, so much so that one can deliberate organize a presentation such that one gender will learn more than the other from it.

It seems, then, that the mutable aspects of gender identity which are social constructs are few and insignificant: clothing styles, hair length, fashionable colors, etc. We see, e.g., how the Scots wear kilts, which to the rest of the world seem like women's dresses, but which to them are masculine.

The significant and essential aspect of gender identity, by contrast, seem immutable, and independent of the individual's self-perception or self-description. First-person gender statements may, after all, be corrigible.

8.5 May

8.5.1 Phases in Sartre's Career (2015-05-25 10:59)

In 1980, a Roman Catholic priest named Marius Perrin published his memoirs of his time in a POW camp with the philosopher Jean-Paul Sartre. Both Frenchmen, Sartre and Perrin were lodged in Stalag XII-D near the city of Trier. Sartre had been serving as a meteorologist with French army when he had been captured by the Germans.

In the camp, the intellectuals among the prisoners formed a cultural society: artists, priests, and others - including Sartre. They had discussions and even organized lectures. Some of them took careful notes. Others did extensive writing.

Captured in 1940 and released in 1941, Sartre spent a little less than a year in the POW camp. He read extensively during this time. One major point in his intellectual development was his study of Heidegger which he undertook at Stalag 12-D. He also wrote a great deal during these months.

Shortly after Perrin published his book about his time with Sartre, Alfred Desautels wrote a review of it. Desautels begins his analysis of Perrin's biographical account of Sartre's war years by examining its reliability.

The veracity of Perrin's book is relevant, because it is one piece of evidence used to support a particular view of Sartre's career. One group of Sartre scholars divide his working years into four phases. Briefly, they assert that Sartre's career began with a phase of despair, followed by a phase of hope, followed by a second phase of despair, and ending with a second phase of hope.

Scholars who embrace this view of Sartre lean on Perrin's work, because the first 'hopeful' phase in Sartre's career is defined, under this view, as his time in Stalag 12-D. Desautels writes:

> At the outset we should assume, I think, that his testimony is accurate for the following reasons: 1) the priest is an unabashed admirer of Sartre, confessing that he is deeply indebted to him for a change of outlook on life; 2) the account is based on extensive notes he took daily during the nine months together; 3) he was encouraged by good friends of Sartre to publish his account of prison life; 4) in his preface, he urges his fellow-prisoners who are still alive to make known their own recollections of their rapport with the philosopher. A Docteur-es-Lettres even at the time of his captivity, Perrin undoubtedly had the academic background to appreciate the value of Sartre's intellectual stature.

Thus Desautels defends Perrin's account of Sartre, for with it stands or falls not only Perrin's book, but also a large school of thought about the progression of Sartre's career.

Sartre's months as a POW were highlighted by his intense engagement with Heidegger's writings, by his authorship of the stage play *Bariona*, and by his intellectually stimulating conversations with his fellow prisoners, many of whom were Roman Catholic priests from France.

8.6 April

8.6.1 Schopenhauer, Thales, and Socrates (2015-04-15 07:33)

Even the most casual student of Schopenhauer knows, already from the title of his central publication alone, that he asserts and embraces some type of idealism. In repeated and various formulations, he informs the reader that the world is will - the world is constructed by, and is the product of, the will - and that at the same time, the world is representation - that the world consists of, and is a projection of, the mind.

Translators have wrestled to find good English equivalents for these two key elements. The title of the book has been rendered various as *The World as Will and Representation*, *The World as Will and Idea*, and *The World as Will and Presentation*.

Schopenhauer's concept is of an active self - a self which wills, and which (re)presents or ideates.

The form which this representation assumes, as a prerequisite, as a necessary precondition, he writes, is the relation between subject and object. What might Schopenhauer intend by telling us that representation is relative? Perhaps he intends to deny an absoluteness to representation. To what is representation relative? He seems to be saying that the form of representation is subject and object; in his understanding of this form, each is relative to the other: there is no object without subject, and no subject without object.

This, then, might be one formulation of Schopenhauer's idealism: that a subject cannot be a subject without an object, and likewise an object cannot be an object without a subject. This leaves no room for an absolute object, a *Ding-an-sich* which exists independently of any observing subject. It also leaves no room for an absolute subject, a solipsistic knowing consciousness independent of any object.

If this is an accurate assessment of Schopenhauer, then it is a simultaneous swipe at both Descartes and Hume. Schopenhauer would deny the independent existence of the Cartesian mind reflecting on its existence prior to any experience; he would also deny the Humean attempt to posit a bundle of experiences existing with an ego to be the knowing subject for which they are the object.

This form of subject and object gives rise to a number of "subordinate" forms. This form and subforms "express" the principle of sufficient reason. This principle, which states that everything has a cause, is the activity of the human mind. In seeing the human mind as projecting causation onto the raw data of the senses, Schopenhauer parallels Kant, at least to some extent. The principle of sufficient reason is thus similar to time and space, both of which are Kantian projections of the mind onto sensations.

If we remove form from the object, what is left? In answering this question, Schopenhauer parts ways with Kant. The raw material of the object, Schopenhauer writes, is neither sense-data nor a *Ding-an-sich*. If we extract form from the object, then what remains is the will. If the will is the self, or part of the self, then I am the object which I perceive.

The will, or the self, is the true *Ding-an-sich*:

> Ich beschließe hier den zweiten Haupttheil meiner Darstellung, in der Hoffnung, daß, soweit es bei der allerersten Mitheilung eines noch nie dagewesenen Gedankens, der daher von den Spuren der Individualität, in welcher zuerst er sich erzeugte, nicht ganz frei seyn kann, – möglich ist, es mir gelungen sei, die deutliche Gewißheit mitzutheilen, daß diese Welt, in der wir leben und sind, ihrem ganzen Wesen nach, durch und durch *Wille* und zugleich durch und durch *Vorstellung* ist; daß diese Vorstellung schon als solche eine Form voraussetzt, nämlich Objekt und Subjekt, mithin relativ ist; und wenn wir fragen, was nach Aufhebung dieser Form und aller ihr untergeordneten, die der Satz vom Grund ausdrückt, noch übrig bleibt; dieses als ein von der Vorstellung *toto genere* Verschiedenes, nichts Anderes seyn kann, als *Wille*, der sonach das eigentliche *Ding an sich ist*.

The self is therefore the knower and the known, the subject and the object. Consciousness is the necessary supporter of the world. It is necessary to parse Schopenhauer carefully here: the phrase "its necessary supporter" in English is ambiguous when we ask what "it" is. In German, however, the pronoun requires a feminine noun as an antecedent. The only two feminine nouns available as antecedents are *Welt* and *Vorstellung*. This parsing allows us to determine what is supporting and what is supported:

> Jeder findet sich selbst als diesen Willen, in welchem das innere Wesen der Welt besteht, so wie er sich auch als das erkennende Subjekt findet, dessen Vorstellung die ganze Welt ist, welche insofern nur in Bezug auf sein Bewußtseyn, als ihren nothwendigen Träger, ein Daseyn hat.

What is true of the individual - that he is a coin with two sides, that he is simultaneously object and subject - is true of the universe as a whole. Does Schopenhauer mean to say that the cosmos as a whole is a knowing subject?

> Jeder ist also in diesem doppelten Betracht die ganze Welt selbst, der Mikrokosmos, findet beide Seiten derselben ganz und vollständig in sich selbst.

Although Schopenhauer does not say that the universe is a knowing subject, he does say that it is composed of will. The "will" here is singular. The cosmos is not an amalgamation of many wills. It is a will. In some places, Schopenhauer refines this to "my will" instead of simply "will." What might be effected by this change in formulation is not clear; either term can be construed as leading to paradoxes. If the universe is "my will," we run the danger of solipsism; if the universe is merely "will," then I may be a projection of the universe lacking my own will, instead of the other way around.

> Und was er so als sein eigenes Wesen erkennt, das Selbe erschöpft auch das Wesen der ganzen Welt, des Makrokosmos: auch sie also ist, wie er selbst, durch und durch Wille, und durch und durch Vorstellung, und nichts bleibt weiter übrig.

Having introduced the words 'macrocosm' and 'microcosm' into this passage, Schopenhauer then goes on to correlate them to the historical figures Thales and Socrates. This correlation deserves some attention.

While Kant and some German Idealists like Hegel make broad, arm-waving references to historical figures like Plato or Aristotle - references which are not meant to indicate specific texts - , Schopenhauer here seems to mean something precise about Thales and Socrates.

Schopenhauer sets Thales and Socrates against each other, which is easy enough to do: Socrates was concerned with ethical, moral, social, and political philosophy. Thales engaged in metaphysics, ontology, and cosmology.

Interestingly, Schopenhauer pairs Socrates with the "microcosm," and assigns Thales to the "macrocosm." His plan is clear enough: to show that the micro and the macro are somehow the same.

What is not clear is why he correlates the two philosophers as he does. What is it about the metaphysics of Thales which makes it, for Schopenhauer, the macrocosm? When we think of cosmology, images of galaxies might pop into our minds: certainly, thinking about billions of stars scattered across billions of miles would seem to qualify as thinking about the macrocosm.

Thales, however, is interested in cosmology in the sense of thinking about the essential nature of matter. Shall we assume that Schopenhauer was aware that the most provocative aspect of Thales was his thesis that everything arises somehow from water? Certainly, Thales did spend some time thinking about earthquakes, about whether the earth was a sphere or a disk, and about how to measure the diameters of the sun and the moon. Those are certainly "macro" topics. But Thales is most famous because of his water hypothesis, and it must be something

related to this hypothesis which makes Schopenhauer choose him as a representative of the "macro."

If we think of matter, we might think of atoms or subatomic particles. Whether or not Thales was an atomist, he might have considered very small objects in his consideration of matter: insects, seeds, etc. This would hardly seem to be "macro."

We ask also why Schopenhauer chose Socrates to be a representative of the "micro." The city of Athens at the time of Socrates had, by crude estimates, between 45,000 and 400,000 inhabitants. Choosing even the smaller of these numbers meant that Socrates, formulating social or political philosophy, was dealing with a large body of people. That would seem more macro than micro.

It is true that Socrates sometimes considers the case of an individual, as when he speaks with the Rhapsode Ion about poetic inspiration, but Socrates usually immediately generalizes from the individual's case to the population at large, emphasizing the macro.

It is not directly obvious what Schopenhauer intends by his pairing of Thales and Socrates with the macro and the micro.

> So sehn wir hier die Philosophie des Thales, die den Makrokosmos, und die des Sokrates, die den Mikrokosmos betrachtete, zusammenfallen, indem das Objekt beider sich als das Selbe aufweist. – Größere Vollständigkeit aber und dadurch auch größere Sicherheit wird die gesammte in den zwei ersten Büchern mitgetheilte Erkenntniß gewinnen, durch die noch folgenden zwei Bücher, in denen hoffentlich auch manche Frage, welche bei unserer bisherigen Betrachtung deutlich oder undeutlich sich aufgeworfen haben mag, ihre genügende Antwort finden wird.

Perhaps Schopenhauer sees Socrates as dealing with the microcosm insofar as Socrates deals only with questions which are human. Humans, and topics which relate exclusively to humanity, are a subset of the universe. Thales, by contrast, contemplated matter and its origin, a topic which applies to humans, because they are made at least in part of matter, but which applies also to many things which are not human. Thales devoted thought to the physical structure of the sun and moon: certainly non-human topics.

If Schopenhauer sees Thales as considering universal topics - all matter, everywhere - , then that might be why Schopenhauer uses him as a symbol for the macrocosm. If Schopenhauer sees Socrates as excluding large segments of the universe from his area of interest - excluding everything which is not human - , then perhaps it was for this reason that Schopenhauer chose Socrates as representative for the microcosm.

Socrates focusing on a single moral decision; Thales considerating the universal nature of matter: is this how Schopenhauer categorizes them?

We make here only a few tentative observations and hypotheses. This passage requires more research.

8.7 March

8.7.1 Planck and Quantized Energy (2015-03-19 08:08)

Planck's discovery, which led to what is now called 'quantum' mechanics, includes the notion that energy, measured in any of the standard units like BTUs or joules or ergs or calories or

kilowatt-hours, is not available in every quantity represented by an arbitrary or random real number.

This would mean that there is at least one number N such that it is impossible to have N joules of energy. The word 'quantize' is used to describe this situation.

This would mean that energy quantities, or amounts, when graphed, e.g., on a cartesian plane, do not correspond to that type of infinity of which it is always true that, for any two points, there is an infinity of points between them.

Energy levels thus depicted would yield a graph of 'steps' like a staircase - Planck used the word *stufenweise* - as energy is available in one quantity, and then another higher or lower quantity, jumping over conceivable quantities in between. In Planck's immediate context, this referred to the energy released by a single atom - electromagnetic energy - as it moved between higher and lower energy states.

A number of mysteries center around the process whereby energy levels jump the gap between possible energy levels, skipping over other conceivable levels.

Planck began to discover this phenomenon in the context of heat radiation, building on the research and measurements made by Heinrich Rubens and Ferdinand Kurlbaum. Planck developed a mathematical model which accurately predicted future values for the research of Rubens and Kurlbaum (sometimes spelled 'Curlbaum'). Werner Heisenberg describes this pivotal moment:

> Diese Entdeckung bezeichnete aber erst den Anfang der eigentlichen theoretischen Forschungsarbeit für Planck. Wie lautete die korrekte physikalische Interpretation der neuen Formel? Da Plank von seinen früheren Untersuchungen her die Formel leicht in eine Aussage über das strahlende Atom (den sogenannten Oszillator) übersetzen konnte, muß er wohl bald herausgefunden haben, daß seine Formel so aussah, als könnte der Oszillator seine Energie nicht stetig ändern, sondern nur einzelne Energiequanten aufnehmen, als könnte er nur in bestimmte Zuständen oder, wie der Physiker sagt, in diskreten Energiestufen existieren. Dieses Ergebnis war so verschieden von allem, was man aus der klassischen Physik wußte, daß Planck sich sicher am Anfang geweigert hat, es zu glauben. Aber in einer Periode intensivster Arbeit während des Herbstes 1900 rang er sich schließlich zu der Überzeugung durch, daß es keine Möglichkeit gab, diesem Schluß zu entgehen. Von Plancks Sohn soll später erzählt worden sein, daß sein Vater ihm, als er Kind war, auf einem langen Spaziergang durch Grunewald von seinen neuen Ideen gesprochen hätte. Auf diesem Weg hätte er ihm auseinandergesetzt, daß er das Gefühl habe, etweder eine Entdeckung allererstens Ranges gemacht zu haben, vielleicht vergleichbar mit den Entdeckungen Newtons, oder sich völlig zu irren. Planck muß sich also um diese Zeit darüber klargeworden sein, daß seine Formel die Grundlagen der Naturbeschreibung erschütterte; daß diese Fundamente eines Tages in Bewegung geraten und von ihrer gegenwärtigen, durch die Überlieferung bestimmten Stelle aus in eine neue und damals völlig unbekannte neue Gleichgewichtslage übergehen würden. Planck, in seinen ganzen Anschauungen ein konservativer Geist, war keineswegs erfreut über diese Folgerungen; aber er veröffentlichte sein Quantenhypothese im Dezember 1900.

Max Planck's discovery that energy was, at least in these contexts, quantized proved interesting on several levels. It worked against the intuitive understanding of Newtonian mechanics.

In Newtonian physics, as it had hitherto been conceived, force and work and energy and power were conceptualized as increasing and decreasing along a curve of whose points, each of which

represented a level or amount of energy, it was true that there would be an infinity of points between any two of them.

Beyond dismantling the intuitive understanding of Newtonian mechanics, Planck's quantum mechanics had further implications. The understanding of electromagnetic energy at the atomic and subatomic levels would be shaped significantly by the Planck's discovery.

The effects of quantum mechanics make themselves felt mostly at the atomic and subatomic levels. Newtonian physics still describe the world at the level of railroads and automobiles measured within the usual practical tolerances.

Planck's discovery of quantized energy led to a series riddles and paradoxes within physics and philosophy, revolving around the notions of causation and around the role of the human observer in measurement. One result of such reflection is that the definition of 'cause' has been rethought and potential new definitions for that word have been proposed. It is safe to say that, a little more than a century after Planck's breakthrough, the implications of his work have yet to be fully catalogued and understood.

8.8 February

8.8.1 Planck and Radiant Energy (2015-02-24 09:11)

The gradual emergence of quantum mechanics was occasioned by a series of questions revolving around radiation - how energy is emitted by material objects. The energy can be in the form of heat, light, or other electromagnetic waves, or in the form of particles.

Physicists worked to find mathematical models which could predict when and how such energy would be emitted. Roger Stuewer writes:

> In 1859–60 Kirchhoff had defined a blackbody as an object that reemits all of the radiant energy incident upon it; i.e., it is a perfect emitter and absorber of radiation. There was, therefore, something absolute about blackbody radiation, and by the 1890s various experimental and theoretical attempts had been made to determine its spectral energy distribution — the curve displaying how much radiant energy is emitted at different frequencies for a given temperature of the blackbody. Planck was particularly attracted to the formula found in 1896 by his colleague Wilhelm Wien at the Physikalisch-Technische Reichsanstalt (PTR) in Berlin-Charlottenburg, and he subsequently made a series of attempts to derive "Wien's law" on the basis of the second law of thermodynamics. By October 1900, however, other colleagues at the PTR, the experimentalists Otto Richard Lummer, Ernst Pringsheim, Heinrich Rubens, and Ferdinand Kurlbaum, had found definite indications that Wien's law, while valid at high frequencies, broke down completely at low frequencies.

The work of Kurlbaum and Rubens provided the impetus and raw material for Planck's discovery of a new law. Kurlbaum was born in 1857 and had been working in Berlin since 1891. Rubens was born in 1865, and was working in Berlin by 1888 or possibly earlier.

Kurlbaum died in 1927, and Rubens in 1922. The latter's death may have been the result of exposure to high levels of radiation from working with radium and other unstable isotopes in a laboratory. The dangers of such radiation to human health had not yet been fully understood at that time.

The work of Kurlbaum and Rubens provided data from which Planck could construct, and then test, a mathematical model of energy emission. Werner Heisenberg describes how Planck came to make a discovery:

> Als Planck im Jahre 1895 mit seiner wissenschaftlichen Arbeit in dieses Forschungs-gebiet eintrat, versuchte er das Problem von der Strahlung auf das strahlende Atom zu verschieben. Durch diese Verschiebung wurden die tieferen Schwierigkeiten des Problems zwar nicht beseitigt, aber ihre Interpretation und die Deutung der empirischen Tatsachen wurden dadurch einfacher. Eben in jener Zeit, nämlich im Sommer 1900, hatten Curlbaum und Rubens in Berlin sehr genaue Messungen des Spektrums der Wärmestrahlung vorgenommen. Als Planck von diesen Ergebnissen hörte, versuchte er sie durch einfache mathematische Formeln darzustellen, die nach seinen allgemeinen Untersuchungen über den Zusammenhang zwischen Wärme und Strahlungen plausibel aussahen. Eines Tages, so wird berichtet, trafen sich Planck und Rubens in Plancks Hause zum Tee und verglichen Rubens' neueste Resultate mit einer Formel, die Planck zur Deutung von Rubens' Messungen vorgeschlagen hatte. Der Vergleich zeigte eine vollständige Übereinstimmung. Damit war das Plancksche Gesetz der Wärmestrahlung entdeckt.

Planck's discovery was not the end, but rather the beginning of a series of discoveries which would together constitute a major revision of hypotheses about radiant energy. The task of systematizing or predicting the emission of energy from matter, and more specifically from an atom, would prove to be the puzzle which occasioned the emergence of quantum physics and the fabled discoveries made by Heisenberg.

8.8.2 The Riddle of Energy and Matter (2015-02-23 11:47)

The common phenomenon of material which glows when heated offers complex challenges to physics. Although common, it is by no means easy to explain why a certain substance emits light of a certain color when it is heated to a certain temperature.

One commonly sees iron glowing from red to yellow when heated by a blacksmith. But why red or yellow? Why not blue or green? And why precisely this color at this temperature?

One of the physicists who investigated this question is John William Strutt, better known as Baron Rayleigh, and more properly, known as the 3rd Baron Rayleigh, to distinguish him from his father and from his son. Wrestling with various questions in physics, he wrote:

> I have never thought the materialist view possible, and I look to a power beyond what we see, and to a life in which we may at least hope to take part.

His son, Robert Strutt, worked on similar problems, and is known as the 4th Baron Rayleigh. His work showed that the questions about light emitted from heated matter are related to questions about light emitted from matter through which an electric current moves.

Where Rayleigh left off, James Hopwood Jeans began, and formulated the Rayleigh-Jeans law. This formula, based on classical mechanics, approximates the observations of emitted radiation from a body for a certain range of values, but deviates substantially from empirical data for values above and below that range.

The failure of the Rayleigh-Jeans law was one, of several, impetuses for the development of quantum mechanics. Werner Heisenberg writes:

Der Anfang der Quantentheorie ist mit einem bekannten Phänomen verbunden, das keineswegs zu den zentralen Teilen der Atomphysik gehört. Irgendein Stück Materie, das erhitzt wird, beginnt zu glühen, es wir rot- oder schließlich weißglühend bei hohen Temperaturen. Die Farbe hängt nicht sehr stark von der Oberfläche des Materials ab, und für einen schwarzen Körper hängt sie sogar allein von der Temperatur ab. Daher ist die Strahlung, die durch solch einen schwarzen Körper bei hohen Temperaturen ausgesandt wird, ein geeignetes Objekt für physikalische Untersuchungen. Da es sich um ein einfaches Phänomen handelt, sollte es auch auf Grund der bekannten Gesetze der Strahlung und der Wärme eine einfache Erklärung dafür geben. Der Versuch zu einer solchen Erklärung, der gegen Ende des 19. Jahrhunderts durch Rayleigh and Jeans gemacht wurde, brachte jedoch sehr ernste Schwierigkeiten an den Tag. Es ist leider nicht möglich, diese Schwierigkeiten in einfachen Begriffen zu beschreiben. Es muß genügen festzustellen, daß die folgerichtige Anwendung der damals bekannten Naturgesetze nicht zu sinnvollen Resultaten führte.

The failure of the Rayleigh-Jeans law nudged physicists, including Max Planck, to look at the micro level, to look at the atom, for clues about the mechanisms which predict or determine the amount of energy matter will release, the wavelength and direction of that energy, and how that release of energy is determined by the temperature to which the matter is heated, or by the amount and type of electric current which is sent through it.

Thus the riddle presented by the Rayleigh-Jeans law reaches to the central questions of quantum mechanics, and to the legendary results of Heisenberg.

8.8.3 Concerning the Impossibility of Gender Reassignment (2015-02-15 19:57)

The phrases "gender reassignment" and "sex change" appear increasingly in contemporary discourse. While speakers believe that they have some intuitive meaning for these terms, a rigorous definition is a complex task.

Geneticists, biologists, anatomists, and other empirical and observational scientists work with the distinction between male and female, and need functional decision procedures to determine gender. Likewise, the legal system has the same need to distinguish between the two, but does so in a different way. Finally, the business world has a need to make the gender distinction, but does so in a third way.

An interesting moment occurs when the empirical scientist, the lawyer, and the businessman must find verbal formulations which satisfy all three of them.

An enterprise called the Genographic Project, organized by the National Geographic Society, is such an instance. Offering some form of genetic analysis to the public, the project involves geneticists. Because it is a non-profit commercial enterprise, it includes business leaders who want to make sure that it is financially viable, and they hire lawyers to protect those revenues from potential lawsuits.

Such genetic analysis is gender-dependent. The way the test results are processed and interpreted depends upon the gender of the donor. In this context, then, the question must be posed to the person donating the sample (usually saliva): "what is your gender?"

The answer, for the purposes of genetic analysis, is an answer that cannot be changed by gender reassignment surgery, by various hormone treatments, or by any other form of gender reassignment therapy. A geneticist analyzes a sample from an individual based on an immutable gender identity which that individual received before birth.

Moving from science to law, the legal disclaimers on the materials and genetic sampling kits distributed by the Genographic Project are designed to clearly inform the individual who donates a sample, and designed to avoid lawsuits which could arise from misunderstandings. These disclaimers state:

> Because women do not carry a Y chromosome, this test will not reveal direct paternal deep ancestry for female participants. Women will learn other information about their paternal side of the family, however.

In the same document, the following statement reiterates the clear and immutable gender difference:

> We will run a comprehensive analysis to identify thousands of genetic markers on your mitochondrial DNA, which is passed down each generation from mother to child, to reveal your direct maternal deep ancestry. For men, we will also examine markers on the Y chromosome, which is passed down from father to son, to reveal your direct paternal deep ancestry.

When a patient, or donor of genetic material, submits a sample to a geneticist, the geneticist has no choice to but to analyze the sample as being given by a person of the gender which the donor had at conception and at birth. No gender reassignment surgery or therapy can change the donor's gender identity. The laboratory is indifferent to whether the donor "identifies as" a male or female.

8.9   January

8.9.1   Sartre in the POW Camp (2015-01-19 16:44)

Examining a chronology of Sartre's life, it becomes clear that most of his written works, and most of his significant written works, were composed and published after his stay in the German POW camp Stalag 12D. Prior to his stay there, he published *Nausea* and *The Wall* and several other works.

After being released, he went on to write *No Exit*, *The Flies*, *Being and Nothingness*, and many others. He was sent to the camp after being captured in 1940, and was released, due to his ill health, in April 1941.

Did Sartre's experience in Stalag 12D, sometimes cited as Stalag XII-D, have any effect on the content of his philosophical writings?

In 1980, one of Sartre's fellow prisoners, Father Marius Perrin, published a memoir of his time with Sartre in Stalag 12-D. Many of the prisoners there were French priests, and Sartre became friends with them, because many of them had thoroughly studied philosophy and literature. Sartre was born and baptised a Roman Catholic, but spent most, if not all, of his adult life as an explicit atheist.

Sartre enjoyed literary and philosophical conversations with the priests. While it seems that he did not change his beliefs, he did write a Christmas play in December 1940, titled *Bariona*. The work is in tune with New Testament sensibilities.

Reviewing Perrin's book, Alfred R. Desautels writes:

Sartre has provided little information on his months of captivity in Germany during World War II. Simone de Beauvoir apparently knows little more than we do, judging by the sketchy bits disseminated in her autobiographical books, especially in *La Force de l'age*. Either Sartre had been laconic with her on this chapter in his life or she chose to imitate his reticence. However, in November 1980 a fellow prisoner of his at the camp near Trier, Father Marius Perrin, published a book that seeks to fill the gaps: *Avec Sartre au stalag 12D* (Paris: Jean-Pierre Delarge, 1980).

The play, Sartre's only significant written output from the POW camp, is multilayered. Set in ancient Palestine or Judea, it deals with the theme of Roman occupation - a reference to the German occupation of France. Sartre develops the theme of resistance, and shows that resistance is predicated upon hope. *Bariona* is a work of hope. The birth of the Messiah is a call to resistance, inasmuch as both the Roman authorities and their puppets, the Herodian dynasty, would oppose the Messiah. The hope found in the Messiah is the hope upon which some resistance would be built.

From the pen of an atheist, the play is surprising.

Desautels surveys Sartre's career, and casts it into four phases: the earliest phase was one of despair; the second phase, Sartre's time in Stalag 12-D, was a phase of hope; the third phase, most of Sartre's productive post-war career, was a relapse into despair; the fourth and final phase was one of hope.

Certainly, other scholars will analyze the chronology of Sartre's career differently, and perhaps with justification. But Desautels does at least address the question of if, and how, the time at Stalag 12-D effected Sartre's writing.

9. 2014

9.1 December

9.1.1 The Philosophy of Popular Science (2014-12-26 21:09)

Next to the long and noble tradition under the heading 'the philosophy of science' - which includes brilliant thinkers from Aristotle to Karl Popper - , there is another question which receives somewhat less attention, and which one might title 'the philosophy of popular science.'

Under this second heading one might ask about non-scientists and how they understand and interpret science. This would include, but not be limited to, the impact of science on, and the images of science projected by, popular culture, popular literature, and popular news media.

Some scholars note that scientific thought is often popularly perceived as monolithic. Phrases such as "scientists have found ..." or "science reveals ..." generate the notion, among reading non-scientists, that there is a body of scientists, and a conceptual construct called 'science,' which speak uniformly.

The popular notion of science rarely includes serious yet conflicting hypotheses, or attention to truly open questions which are the object of investigation. Liam Scheff writes:

> When an official from the Centers for Disease Control (CDC) throws out an edict ("Get vaccinated for bird flu!"), or the World Health Organization (WHO) makes one of its famously failed predictions ("One in 5 American citizens will have AIDS by 1990!"), it's front-page news around the globe. We're not allowed to think; we're just supposed to swallow. And when scientific claims do turn out to be false, we don't get angry. "Better safe than sorry," we tell ourselves. "Anyway, we all know that a bird-flu pandemic awaits us."

If science were monolithic, then when a prediction fails, or when one hypothesis is substituted for another, then the public would be left to assume that science has changed its mind, and to assume further that science is to be trusted in these matters. Given the popular understanding of science as univocal, the public does so assume.

On the one hand, there is science as understood both by scientists themselves and by philosophers of science. On the other hand, there is this popular understanding of science. Between them, there is a great gap. Thus when the results of scientific inquiry, or the words of a scientist, are reported to the public, they are misunderstood.

The notion, for example, of competing theories which equally map known data points is not part of the common understanding of science. While the public wishes to know which theory is true, the philosopher sees two theories as two different ways of characterizing a set a data.

The popular press seeks a simple declaration which it can report, and runs roughshod over the process by which a theory is constructed. Liam Scheff, noting how the natural sciences are reduced to the assertion of simple propositions in the popular press, writes:

> But what if there was good evidence that these things weren't true? Would Fox and CNN report it? What if serious, established researchers had strongly disparate views on an issue? Should they be allowed to debate each other on the nightly news?

The popular media do not see the natural sciences as addressing a long list of open questions. They wish to present sciences as a set of "proven" or "accepted" propositions - and even at that, they sidestep any discussion about the meaning of 'proven' or 'accepted.'

Matters which are largely accepted - e.g., that a water molecule contains two hydrogen atoms and one oxygen atom - are matters which are, in and of themselves, of little interest to science. More interesting are the questions which are truly open - e.g., how a certain molecule, injected into a cell, seems to know where inside the cell it belongs.

Because the popular press wants to reports results and not investigations - assertions and not questions - it furthers the illusion that the natural sciences are monolithic. It is telling that the few questions found about scientific topics in popular reports are either rhetorical questions, or questions about mundane possible future practical applications, and not questions about the matters themselves. Liam Scheff continues:

> The major media work hard to create the illusion that science is uniform: a single-minded group of hard-working researchers, joined hand in hand, in a race against the clock, seeking the chemical cures that will save humanity from obesity, cancer, AIDS, death, and all of the other ravages of nature that must be conquered.

Scientists themselves, along with philosophers of science, are more prone to pose questions than those who report about science. Often, the questions which engage researchers are questions which won't have a clear and simple answer any time soon, if ever. But such questions aren't satisfying to readers, or writers, of popular news outlets.

Simple and sensational propositions feed the common taste. Understood within most methodologies of science, a prediction is an opportunity to test a hypothesis or a theory. But in the popular media, these predictions are understood not as tests, but as simple assertions. One scholar, Charles St. Onge, writes:

> Consider predictions about future events. No one has been to the future, so it cannot be observed scientifically. But based on past events that have been observed, we can apply scientific models to predict what might happen in the future. Such predictions are always tentative. The further into the future we try to predict, the less accurate our predictions can become. This is especially true as we account for a lot of variables, as weather and climate forecasters must do.

Eventually, the effects of the popular reports about science begin to work in the other direction, and affect science itself. Governments, universities, and the foundations which grant funding to scientists begin to have a stake, not in the quality of the questions posed, and not in the quality of the analysis about the data, but rather in the bold assertions which they are able to make in the press.

Having once entered into the business of producing results in the form of simple propositions for the media, instead of reflecting on theory construction, scientists and those who fund them find that they have territory to protect. This shifts the scientists from exploring to defending. Or, as Charles St. Onge phrases it,

> Because of this reluctance to give up a model or theory, it is possible for almost everyone in the scientific community to be wrong about a certain idea. The late Michael Crichton, famous doctor and science fiction writer, pointed this out in a lecture at the California Institute of Technology. He reminded his audience that science, unlike politics, is not about consensus; science is about getting things right.

It is bad enough when the popular media distort science for the public; it is even worse when these distortions begin to steer the investigations of science itself.

9.1.2 Parsing Rorty (2014-12-02 18:07)

In a memorable passage, Richard Rorty makes a number of comments about labor unions, religion, and morality. This texts presents good examples for analysis and interpretation.

One task facing the reader is to sort out what is philosophically interesting and what is historically interesting. Simply to know that a certain historical individual asserted a certain proposition, or believed it, may be historically interesting, but is not philosophically interesting.

Knowing, however, that a certain individual asserted that proposition allows us to ask whether that proposition is consistent with the other propositions which he asserted, and may allow us to decide whether some of the competing interpretations of that individual's philosophical system may be evaluated based on the knowledge that he asserted this proposition.

To know that Marx saw labor unions as an embryonic version of a revolutionary communist party is an empirical fact which may interest historians but which does not, by itself, interest philosophers.

On the other hand, knowing that Marx did hold such a view allows us to ask two questions: Is that view consistent with other central propositions in Marx's philosophical system? Does Marx's assertion of this proposition rule in, or rule out, some of the many competing interpretations of Marx's system?

Using powerful but ambiguous vocabulary, Rorty goes on to assert that organized labor is an instance of specific "Christian virtues" - and not only an instance, but the "most inspiring" instance.

The use of the word 'Christian' raises an entire flock of new questions - the attempt to establish a clear definition of this word can fill hundreds of pages with debate - but we need not arrive at the complete and comprehensive definition of 'Christian' for our purposes, because Rorty is concerned, at least at this point in his text, only with "Christian virtues," and not the entirety of what might fall under the heading of 'Christian.'

This allows us to table the larger task of defining 'Christian' and busy ourselves instead with the somewhat smaller, but still complex, task of defining 'Christian virtues.' Without arriving at a final list of what those might be, we may proceed with the vague assumption that this list would include, e.g., altruism, honesty, pacifism, etc.

Rorty specifically asserts that "self-sacrifice" and "fraternal *agape*" are among the Christian virtues. Regarding the former, 'self-sacrifice' is perhaps an under-determining phrase, because a more complete expression would include some idea about the recipient of the sacrifice - for what does one sacrifice?

Even an avowed and explicit anti-Christian would endorse the notion of self-sacrifice, perhaps self-sacrifice in the service of opposing Christianity. So when Rorty lists "self-sacrifice" among the Christian virtues, he should refine the statement, either by stipulating self-sacrifice becomes virtuous self-sacrifice when made for certain purposes (e.g., self-sacrifice for achieving peace is virtuous, while self-sacrifice made for the purpose of bringing about war is not), or by stipulating that "self-sacrifice" is virtuous if and only if when it is part of a multi-virtue bundle including certain other enumerated virtues.

The phrase 'fraternal *agape*' poses additional interpretive challenges. What does Rorty mean by this phrase? As is already well-known, *agape* is one of several Greek words which are rendered into English as 'love' and stands in distinction to several other Greek words which are likewise translated.

The philology and hermeneutics of *agape* stretches over centuries and are complex. At the core of it lies a concept of self-sacrifice. But given the Rorty has already used the term 'self-sacrifice' in a separate phrase, we will extend charity by assuming that he has a separate and distinct referent for this word.

In general, exegesis of *agape* denotes not only self-sacrifice, but self-sacrifice for the sake of another: giving, at one's own cost, for the benefit of person without expectation of any return or repayment.

What, then, does Rorty intend by adding the adjective 'fraternal' to *agape*? How does "fraternal *agape*" differ from non-fraternal *agape*?

One popular dictionary defines 'fraternal' as

> of or denoting an organization or order for people, esp. men, that have common interests or beliefs.

The usual understanding of *agape* would not limit altruistic self-sacrifice as being for the sake of those who share "common interests or beliefs." Rather, *agape* is a sense of sacrificing self-lessly, and without any expectation of recompense. To sacrifice only for those with "common interests or beliefs" would imply and entail some sense of recompense, inasmuch as sacrificing for the sake of one's fellow believers would be achieving a goal in the form of progress for the community of believers.

An argument - a persuasive and plausible argument - can be made for the proposition that there is an internal tension in the phrase "fraternal *agape*." Under the usual understanding, *agape* is given without expectation of reciprocation, and therefore is not to be extended only to co-believers, but rather to all humans. Rorty writes:

> The trade union movement, which Marx and Engels thought of as only a transition to the establishment of revolutionary political parties, has turned out to be the most inspiring embodiment of the Christian virtues of self-sacrifice and of fraternal *agape* in recorded history.

Four words attract attention in Rorty's continuance of the passage: 'most' and 'purest' and 'unselfish' and 'heroism.' How do these terms apply to collective bargaining?

Can we argue that, "morally speaking," organized labor is the "most encouraging" phenomenon of recent years? More than, e.g., German Lutherans and German Roman Catholics who crossed denominational lines to form a united Christian underground resistance against Hitler's Nazi government? More than white Americans who willingly offered their lives to ensure that African-Americans would receive their constitutional voting rights?

Probably some efforts by labor leaders were unselfish, but were they the 'most' and 'purest' unselfish actions? While there were unselfish aspects to those actions, there were also elements of self-interest in better wages, better working conditions, and union dues paid to those who led such efforts.

While heroic, were the efforts of labor leaders the 'most' and 'purest' examples of heroism in recent decades? If herosim is defined, roughly, as "bravery," we might ask about soldiers in battle, mothers in labor, and other examples, - and ask whether collective bargaining is the "most" and "purest" example of bravery. Rorty continues:

> The rise of the trade unions, morally speaking, is the most encouraging development of modern times. It witnessed the purest and most unselfish heroism.

Rorty then proceeds to compare organized labor to (1) churches, (2) corporations, (3) governments, and (4) universities. He argues that labor unions have greater "moral stature" than these.

He makes this claim based on the assertion that union leaders had "an enormous amount to lose." One tacit premise in his argument is that people in churches, corporations, governments, and universities had little or less to lose. The truth-value of his assertion will be determined in part by empirical facts: an accounting of who lost what.

One side of Rorty's claim is, then, philosophically uninteresting, but historically interesting. We may make a tally of lives lost, and of other things lost, by various organizations, and decide who lost the most.

But another side of Rorty's argument is philosophically interesting. Two claims in particular, both of which are unstated but implied, attract philosophical attention. First, he seems to be asserting the proposition that those who lose more gain "moral stature." Second, he is operating with some definition of 'church' which needs to be made explicit.

Defining 'church' is perhap as thorny a task, or nearly so, as defining 'Christian' - but, under most plausible definitions, it would include millions of martyrs - from those killed under Roman rule prior to 313 A.D. to those currently being killed in places like North Korea.

There are, to be sure, competing definitions of 'church' - but even the most cynical of these would have to include the martyrs along with those who were part of a worldly power structure which called itself 'church' but lacked virtues which would normally qualify it to bear that name, or included the vices which would normally disqualify it.

Does Rorty really mean to say that the labor unions have a higher moral standing than the hundreds of thousands who went willingly to their own deaths simply so that others could experience altruism, pacifism, and communal harmony? He writes:

> Though many trade unions have become corrupt, and many others have ossified, the moral stature of the unions towers above that of the churches and the corporations, the governments and the universities. The unions were founded by men and women who had an enormous amount to lose - they risked losing the chance of work altogether, the chance to bring food home to their families. They took that risk for the sake of a better human future. We are all deeply in their debt. The organizations they founded are sanctified by their sacrifices.

If Rorty truly believes that an organization is "sanctified by" sacrifices, than, by his own calculus, churches would be more holy than collective bargaining. If he truly means to assert that the moral standing of a group is based on its willingness to seek "a better human future," then the church, which introduced the notion that every human life is valuable and should be respected, should have such a moral stature beyond organized labor.

9.2 August

9.2.1 Societal Factors in the Manifestations of Autism (2014-08-20 08:44)

This text is not about the definition of autism, nor about its etiology, nor about the methodology of its diagnosis. This writing explicitly claims to make no claims about those questions.

Rather, this text will present material which others may use in investigating those questions. This investigation is not about autism spectrum disorder(s) *per se*, but rather about the manifestations of ASD.

Individuals with ASD often find it difficult to understand or interpret society's unwritten rules. They are generally more skillful at navigating explicit and codified systems of behavior.

Societies vary in their levels of complexity, and in the extent to which their expectations about patterns of behavior are transparent. At one idealized extreme would be rigid and formalized societies whose rules could be specifically stated in words; at the other extreme are anarchic societies whose few and intricate rules might be subject to numerous exceptions.

Consider this example: imagine a society in which there is a general social rule, "men ought to wear their pants (jeans, trousers) so that the waistline of the pants are above their hips." This is a clearly intelligible rule, which can be either explicitly taught or learned by induction.

Now, imagine another society in which this general rule applies to most people, but not to all people. Some people, aficionados of the hiphop or rap culture, are exempt from the rule, and wear their pants so that the waistline is below their hips; they are permitted to dress this way, without social ostracism or bearing other negative consequences.

For some individuals with ASD, the second society will present an opaque system. If they are told to pull up their pants, and if at the same time they are observing others wearing pants below the hips, they will, in the absence of explicit formulations given to them by others, find it difficult to induce or intuit the systematic rules in play.

Those who have spent substantial time inside an American public high school during the last decade of the twentieth century, or during the first two decades of the twenty-first century, will understand that this example is not hypothetical.

Another example: imagine a society in which the general rule is that men may wear hats outdoors, but should remove hats when coming indoors.

Then imagine a second society, in which some men are exempt from this rule, and wear baseball caps indoors.

Again, autists may find it difficult to discern the rules governing the second example. Others may need to offer them explanation and clarification.

These observations constitute primary data for investigations about ASD. From them, one may work out implications.

Tentative hypotheses present themselves. Perhaps some societies are easier than others for individuals with ASD to navigate. Perhaps increased numbers of diagnosed cases of autism are a result of societal changes which cause borderline or latent cases to become detectable. Perhaps borderline or latent cases go undetected in some societies but become noticeable in others.

Perhaps, in some societies, books like Dale Carnegie's *How to Win Friends and Influence People* and Emily Post's *Etiquette* can serve individuals with ASD to make explicit those social expectations which are implicit.

In other societies, perhaps, the byzantine complexity of social rules and their numerous exceptions make it difficult or impossible to codify such rules in a usable form. Perhaps some societies have rules which can be, but simply never have been, codified.

Perhaps increased numbers of cases of autism in the United States in recent decades is due in part to the changing structures of society, if those structures are changing in directions which make society more difficult for individuals with ASD to navigate.

Perhaps, as North American society has changed in a direction away from rules which either are explicitly codified or at least capable of being explicitly codified, and has changed toward rules which are either not capable of being codified or at least have not been codified, it has become more difficult for individuals with ASD to navigate, and thereby caused latent or borderline cases to become detectable.

In this writing, no definite conclusions are drawn; much remains to be investigated. Presented are empirical data about the ways in which autists encounter the complexities of society.

9.3 June

9.3.1 Properties: Paper Burns, but Is It Flammable? (2014-06-01 20:02)

The advances made in mathematics at end of the nineteenth century overlapped with advances in formal logic, leading to the birth of symbolic logic in the form of Frege's *Begriffschrift*. In the twentieth century, logic was employed by philosophers, especially by those engaging in what is often called 'contemporary analytic' philosophy.

The rigor of formal logic can have a clarifying effect, especially in matters related to philosophy of language and in matters related to metaphysics. Ordinary organic human language, with its idioms and ambiguities, can muddle what should be precise discussions. Natural language contains metaphors which are ossified and used unconsciously, to the point that those using the language do not recognize them as metaphors. By contrast, systems of logic, according to Howard Kahane,

> have been very useful tools for philosophers, logicians, scientists, and mathematicians. In particular, they have been used by some twentieth century philosophers in their attempt to get a clearer grasp on several of the central problems in philosophy.
>
> But the application of modern symbolic logic to philosophy proper has yielded another, perhaps bitter, kind of fruit. For once the notation and proof technique of predicate logic is employed, important problems come into sharp focus, to which insufficient attention was paid previously.

While logic might allow philosophers to make progress concerning some problems, it uncovers other problems. Famously, e.g., the substitution problems which arise when the verb 'to be' is naively regarded as an equation:

> Fred is Mike's brother.
> Fred is twenty years old.
> Mike's brother is twenty years old.

> Fred is smart.
> Fred is twenty years old.
> Smart is twenty years old.

In addition to the verb 'to be' as a copula, a related problem is one of qualities (or 'properties') in general. If the proposition that 'Fred is smart' is not an equation of the form "a = b", then what is it? If we answer that it is equivalent to "Fred has smartness," then we are already deep into the weeds of metaphysical commitment; not that we necessarily wish to avoid such commitment, but we want at least to be aware of such commitments when we make them. We now must explore what 'smartness' might be.

We might take 'smartness' to be a property. Howard Kahane sets forth some preliminary notions about properties:

> There is a long tradition in philosophy which distinguishes properties of objects into two kinds, namely *observable*, or *manifest*, properties and *dispositional*, or *power* properties.

What we might understand under the heading 'observable' would include not only direct sensory perception, but also matters which are indirectly observable (e.g., seeing a photograph of the object instead of seeing the object itself, if the object has the property in question, or seeing evidence about the object, or seeing data recorded about the object, etc.), and matters which are only in principle observable (e.g., we can't observe whether there is a purple rock on the far side of the planet Pluto, but we can understand what it would mean to make such an observation if it were possible).

> *Observable properties* of objects can be recognized by means of one or more of the five senses, while *dispositional properties* cannot. Thus, we can observe that something *burns*, but not that it is *flammable* (although if it *is* flammable, and if we ignite it, we can observe that it burns). And we can see that something *bends*, but not that it is *flexible* (although if it *is* flexible, and we apply suitable pressure to it, then we can observe that it bends). Burning and bending are observable properties, while flammability and flexibility are dispositional properties.

The question arises, what, if any, metaphysical commitments we make, if we accept what Kahane calls dispositional properties. Various readings of 'dispositional properties' are possible. A more empiricist reading would say that such properties are a linguistic shorthand for expressing the proposition that 'objects like this have been observed having such a property' - i.e., to say that 'paper is flammable' would be to say that 'some paper objects have been observed to burn.'

On the other hand, a more metaphysical reading of 'dispositional properties' would say that there is a fact about an object which justifies our using the word 'flammable' about it. There is something called 'flammability' which is a feature of this object. If we say that 'some liquids are flammable and others are not,' then we are asserting a difference between the two sets of liquids, a difference which would exist independently of anyone having observed any of them actually burning.

Now, someone might argue that there is no metaphysical commitment in this latter reading of 'dispositional properties,' because an explanation could be made using the vocabulary of chemistry, which is an allegedly hard-nosed empirical science. But a closer examination of any such explanation might reveal that the chemist, in explaining 'flammability,' would in fact be invoking further dispositional properties, perhaps by means of making counterfactual statements about how a substance would act under circumstances other than the actual circumstances.

Obviously, the dispositional, nonobservable, property of being flammable is *closely connected* to the observable property of burning, for to say that something is *flammable* is to say that it has the *power to burn*, or the *disposition to burn*, under certain circumstances. Similarly, the dispositional property of being flexible is closely connected to the observable property of bending, for to say that something is *flexible* is to say that it has the *power to bend*, or the *disposition to bend*, under certain conditions. And so on.

The assertion that 'dispositional properties' are in fact real facts belongs to a view which might roughly be called Aristotelian. The view that such properties are actually a sort of linguistic shorthand for expressing what has been observed and for expressing patterns in what has been observed is a view which might be described as empiricist, as empiricism is exemplified by the likes of David Hume and A.J. Ayer

To argue that an object's burning is caused, at least in part, by its flammability, would seem to some empiricists a double sin: first, to have posited flammability which is not even indirectly observable; second, to have posited a 'cause' for an observed property. Thus Hume's disposition (!) to argue against dispositional properties is an organic outgrowth of his general attack on causation. In *An Enquiry Concerning Human Understanding* (1748), Hume writes:

Adam, though his rational faculties be supposed, at the very first, entirely perfect, could not have inferred from the fluidity, and transparency of water, that it would suffocate him, or from the light and warmth of fire, that it would consume him. No object ever discovers, by the qualities which appear to the senses, either the causes which produced it, or the effects which will arise from it; nor can our reason, unassisted by experience, ever draw any inference concerning real existence and matter of fact.

Hume, then, would assert that the only statement which can be taken at face value is something like 'I saw the paper burning at time T1 and at place P1' or that 'the paper was observed burning, etc.' or that 'the rock was observed to be purple at time T1, etc.' Any mention of 'flammability' or a 'disposition to burn' would be understood, at best, to be linguistic shorthand, or, at worst, to be a false, or meaningless, or nonsensical, or senseless utterance - to which category of utterance Hume would assign all metaphysical discourse.

9.4 April

9.4.1 Schopenhauer's Pessimism (2014-04-30 11:18)

As in so many philosophical questions, the investigation of Schopenhauer's pessimism must begin with an attempt to clearly define a key piece of vocabulary. And as with so many philosophical terms, the word 'pessimism' finds a different use in everyday life among ordinary people than it finds among philosophers.

The common meaning of 'pessimism' is, according to one common dictionary,

a tendency to see the worst aspect of things or believe that the worst will happen; a lack of hope or confidence in the future.

In this pedestrian sense, a 'pessimist' is one who expects bad weather, expects his favorite sports team to lose, expects illness, poverty, and difficult times; in this sense, a pessimist, confronted with a person, place, thing, idea, or event will identify and expound on its disadvantages and drawbacks.

But the word 'pessimist' is used in a radically different way by Schopenhauer and by many other philosophers. We must clearly distinguish between these two ways of using the word, and we must dismiss from our minds entirely the ordinary everyday meaning.

For Arthur Schopenhauer, born in 1788, the word 'pessimism' refers to a belief that the world is not perfectible. Schopenhauer, in asserting pessimism, means to say that the empirical real world in which we live is necessarily not perfect, and this cannot be changed. We might be able to change the world, but we cannot change the fact that the world is necessarily imperfect.

In answering the question about Schopenhauer's understanding of pessimism, we raise further questions. What does it mean for the world to be perfect? What does it mean for the world to be imperfect? This would include a long list of synonyms: the world necessarily contains some evil; the world is flawed; the world necessarily contains pain and suffering; the world contains injustice and violations of moral law and of natural law.

To sort out what Schopenhauer means, we can look at some salient texts from *The World as Will and Representation*, originally published as *Die Welt als Wille und Vorstellung* and alternately translated as *The World as Will and Idea*. Schopenhauer raises the concept of pessimism in the context of comparative religious studies.

All religions, argues Schopenhauer, are most meaningfully analyzed and divided into two groups, not by asking whether they be monotheistic or polytheistic, but rather by asking whether they are optimistic or pessimistic. Optimistic religions, he writes, find the world, as it is, to be self-justified and laudable. Pessimistic religions find the world's condition to be a consequence of our, of humanity's, guilt; pessimistic religions find that the world should not be as it is, and perhaps should not be at all. Schopenhauer writes:

> Den Fundamentalunterschied aller Religionen kann ich nicht, wie durchgängig geschieht, darin setzen, ob sie monotheistisch, polytheistisch, pantheistisch, oder atheistisch sind; sondern nur darin, ob sie optimistisch oder pessimistisch sind, d.h. ob sie das Dasein dieser Welt als durch sich selbst gerechtfertigt darstellen, mithin es loben und preisen, oder aber es betrachten als etwas, das nur als Folge unserer Schuld begriffen werden kann und daher eigentlich nicht sein sollte, indem sie erkennen, dass Schmerz und Tod nicht liegen können in der ewigen, ursprünglichen, unabänderlichen Ordnung der Dinge, in Dem, was in jedem Betracht sein sollte.

Schopenhauer's understanding of pessimism complements his understanding of optimism. He expounds this by means of his understanding of various religions - Judaism, Christianity, and pagan mythology. The reader should bear in mind that Schopenhauer is discussing these religions as he understood them, which raises a further question of whether he understood them correctly. But to understand his use of 'pessimism' and 'optimism,' we will grant for the moment Schopenhauer's understandings of those religions to him.

Schopenhauer sees Buddhism and Christianity as the two great pessimistic religions, by which he means that they understand the human condition to be one of suffering and sin. By contrast, he sees Judaism, Islam, and Greco-Roman mythologies as optimistic religions. He explains:

> Die Kraft, vermöge welcher das Christentum zunächst das Judentum und dann das Griechische und Römische Heidentum überwinden konnte, liegt ganz allein in seinem

Pessimismus, in dem Eingeständnis, dass unser Zustand ein höchst elender und zugleich sündlicher ist, während Judentum und Heidentum optimistisch waren.

Schopenhauer argues that the crucifixion of Jesus was a concrete instance of the conflict between optimism and pessimism. Judaism, embodying optimism, could not tolerate Jesus, who embodied pessimism. As he phrases it,

Sind es doch, der evangelischen Darstellung zufolge, gerade die orthodoxen Anhänger des Alten Testaments, welche den Kreuzestod des Stifters herbeiführen, weil sie seine Lehren im Widerstreit mit den ihrigen finden. Im besagten dritten Buche der *Stromata* des Klemens tritt der Antagonismus zwischen Optimismus, nebst Theismus, einerseits, und Pessimismus, nebst asketischer Moral, andererseits, mit überraschender Deutlichkeit hervor.

Because he has cited a book by Clement of Alexandria, Schopenhauer offers an additional explanation about the role of Gnosticism in the conflict between optimistic Judaism and pessimistic Christianity. But Schopenhauer's comments about Gnosticism are beside the point. His argumentation becomes dense at this point. Having begun with his assertion that Christianity and Buddhism are pessimistic religions, and that Islam and Judaism are optimistic religions, he goes on to examine an internecine conflict within Christianity, the dispute between orthodoxy and Gnosticism. Schopenhauer mines Clement's comments about Gnosticism; Clement is himself of complex figure, opposing, yet influenced by, Gnosticism.

More to the point is his (mis)understanding of the relationship between the Old Testament and the New Testament. He rather simplistically identifies the Old Testament with Judaism and the New Testament with Christianity. He thereby ignores the fact that Judaism is something more than the Old Testament, ignores the fact that Christianity is a construct which arose in accumulated traditions which extend beyond the New Testament, ignores the fact that the New Testament is a thoroughly Jewish set of texts, ignores the fact that Jesus is thoroughly Jewish, and ignores the complex and subtle interplay between the Old Testament and the New Testament. In addition, he ignores the distinction between Jesus and Christianity. He ignores a few other things as well. Schopenhauer rather blithely writes:

Dasselbe ist gegen die Gnostiker gerichtet, welche eben Pessimismus und Askese, namentlich *enkrateia* (Enthaltsamkeit jeder Art, besonders aber von aller Geschlechtsbefriedigung) lehrten; weshalb Klemens sie lebhaft tadelt. Dabei schimmert aber zugleich durch, dass schon der Geist des Alten Testaments mit dem des Neuen Testaments in diesem Antagonismus steht.

While Schopenhauer might not be good at descriptive comparative religious studies, he nonetheless makes a noteworthy contribution to philosophy by his examination and explication of his notions of pessimism and optimism.

Somewhat more accurately, but still perhaps not entirely grasping the spirit of Judaism, he notes that the Fall is an event which points more to a pessimistic religion than to an optimistic one. Maybe he underestimates the permeating presence of the Fall throughout the Old Testament. He sees it as an exception rather than a leitmotif in the text:

Denn, abgesehen vom Sündenfall, der im Alten Testament wie ein *hors d'oeuvre* dasteht, ist der Geist des Alten Testaments dem des Neuen Testaments diametral entgegengesetzt: jener optimistisch, dieser pessimistisch.

Having cited Clement of Alexandria, Schopenhauer continues his sidebar discussion of Gnosticism, which is not directly to the point of pessimism, but does contain in passing some remarks which are to the point. Although Clement attacks Gnosticism for its pessimism, Schopenhauer uses Clement's text as a guide to philosophical antecedents. Those whom Clement dismisses, Schopenhauer sees as pioneers:

> Er sieht darin ihren schreienden Undank, Feindschaft und Empörung gegen Den, der die Welt gemacht hat, den gerechten Demiurgos, dessen Werk sie selbst seien und dennoch von seinen Schöpfungen Gebrauch zu machen verschmäheten, in gottloser Rebellion »die naturgemäße Gesinnung verlassend« (*antitassomenoi tô poiêtê tô sphôn, – – – enkrateis tê pros ton pepoiêkota echthra, mê boulomenoi chrêsthai tois hyp' autou ktistheisin, – – asebei theomachia tôn kata physin ekstantes logismôn*). – Dabei will er, in seinem heiligen Eifer, den Markioniten nicht ein Mal die Ehre der Originalität lassen, sondern, gewaffnet mit seiner bekannten Gelehrsamkeit, hält er ihnen vor, und belegt es mit den schönsten Anführungen, dass schon die alten Philosophen, dass Herakleitos und Empedokles, Pythagoras und Plato, Orpheus und Pindaros, Herodot und Euripides, und noch die Sibylle dazu, die jammervolle Beschaffenheit der Welt tief beklagt, also den Pessimismus gelehrt haben.

Moving into a lesser-known set of religious examples, Schopenhauer looks to the language and religion of Persia's Zend culture, which is Zoroastrianism. He sees Zoroastrianism as attempting some manner of middle ground in the tension between optimism and pessimism. Following the thought of Johann Gottlieb Rhode, Schopenhauer (wrongly) identifies Zoroastrianism as the ancestor of Judaism.

While Zoroastrianism, in Schopenhauer's understanding, attempts to balance optimism and pessimism, Judaism, in Schopenhauer's view, tilts the table toward optimism. Zoroastrianism's two gods, one good and one evil, represent the balance; in Judaism's subordination of Satan as inferior to God, Schopenhauer sees a loss of balance.

Schopenhauer's reading of Zoroastrianism is somewhat idiosyncratic, given that the usual understand of Zoroastrianism is a stalemate between good and evil, not between optimism and pessimism. The view which Schopenhauer borrows from Rhode about the sources of Judaism is verifiably false, given the dating of Zoroaster himself and the earliest Zoroastrian texts. Judaism was already centuries old by the time Zoroastrianism appeared.

> Die Zendreligion hält gewissermaßen das Mittel, indem sie, dem Ormuzd gegenüber, am Ahriman ein pessimistisches Gegengewicht hat. Aus dieser Zendreligion ist, wie J.G. Rhode, in seinem Buche »Die heilige Sage des Zendvolks«, gründlich nachgewiesen hat, die Judenreligion hervorgegangen: aus Ormuzd ist Jehova und aus Ahriman Satan geworden, der jedoch im Judentum nur noch eine sehr untergeordnete Rolle spielt, ja, fast ganz verschwindet, wodurch denn der Optimismus die Oberhand gewinnt und nur noch der Mythos vom Sündenfall, der ebenfalls (als Fabel von Meschian und Meschiane) aus dem Zend-Avesta stammt, als pessimistisches Element übrig bleibt, jedoch in Vergessenheit gerät, bis er, wie auch der Satan, vom Christentum wieder aufgenommen wird.

Per his usual method, Schopenhauer seems to delight in finding unusual examples to prove, or at least illustrate, his theses. Pondering the endless cycles of attack and death among carnivorous animals, he turns to an obscure bit of short fiction, a French story published in

1859, about a squirrel eaten by a snake; the snake, aided by magical powers, causes the squirrel to walk into its waiting jaws. Schopenhauer's point is this: only a pessimistic view of the world - again, 'pessimism' in his sense of the word - is plausible, given the effort with which one generation produces another, only so that these offspring may one day be eaten by predators. Schopenhauer gives numerous examples of the extreme effort which animals put into their survival, and into the survival of their offspring, only to be part of a long food chain in which a predator, having eaten its prey, becomes in turn prey to another predator. For him, this is 'the will to live' made concrete:

> Diese Geschichte ist nicht bloß in magischer Hinsicht wichtig, sondern auch als Argument zum Pessimismus: dass ein Tier vom andern überfallen und gefressen wird, ist schlimm, jedoch kann man sich darüber beruhigen: aber dass so ein armes unschuldiges Eichhorn, neben dem Neste mit seinen Jungen sitzend, gezwungen ist, schrittweise, zögernd, mit sich selbst kämpfend und wehklagend dem weit offenen Rachen der Schlange entgegenzugehen und mit Bewusstsein sich hineinstürzen, – ist so empörend und himmelschreiend, dass man fühlt wie Recht Aristoteles hat zu sagen: *hê physis daimonia men esti, ou de theia.* – Was für eine entsetzliche Natur ist diese, der wir angehören!

Schopenhauer's understanding of Judaism is arguably incomplete. His understanding of the relationships between Christianity, Judaism, Jesus, the Old Testament, and the New Testament is deficient. His understanding ignores that the Old Testament contains in embryonic form many New Testament concepts. His understanding also ignores that the New Testament sees itself in many ways as an organic extension of the Old Testament. Schopenhauer's knowledge of theology is insufficient.

His development of the concepts of pessimism and optimism, however, are insightful and valuable to philosophy.

He addresses directly a question which lurks beneath the surface of much social, political, anthropological, and religious philosophy: is the world perfectible? is a utopia possible? can human nature be refined and thereby freed from flaw? can humans develop and implement the perfect society?

In political hypothesizing, this question takes the forms of, e.g., Rousseau and Marx, each of whom seems to flirt with the notion that some manner of ideal society can be effectuated. In Schopenhauer's terminology, Rousseau and Marx are optimists. Schopenhauer also explains the mechanism which makes predictable the horrors of the French Revolution and the Russian Revolution: optimists trying to fulfill an optimistic doctrine are prone, on utilitarian calculation, to countenance any and all means to achieve their ends. The utility of a perfect society being infinite, or nearly so, atrocities committed to attain that perfection will be rendered relatively small by comparison.

Despite Schopenhauer's deficient understanding of theology, sacred text, and some religions, his conceptual framework constitutes a significant insight into the natures of various religions. To label Christianity as pessimistic is to capture what theologians call the fallen nature of the world, and to capture what one calls the brokenness of the world. The conversation between Jesus and Pilate has echoes in the words of Malthus, Metternich, and Edmund Burke. A kingdom "not of this world" meant that there was no attempt to establish a paradise or a utopia in this space and time. Jesus urges compassion, meaning that one should aid the poor and suffering, and yet simultaneously urges the sober realism that the poor will always be among us.

(In passing, it should be noted that Malthus is often misunderstood: his main concern was neither the size of the food supply nor any alleged population problems; he was writing to explain that planet earth is a place which will necessarily always contains some suffering. Malthus was a pessimist in Schopenhauer's sense of the word.)

Strictly speaking, Schopenhauer's pessimism does not rule out the establishment of some manner of perfection outside of our spatiotemporal continuum.

Labeling Islam as optimistic crystalizes and makes explicit the rationale which drives the quest for the establishment of a caliphate. Optimism, linked with specific and concrete definitions of 'good', leads to the drive to establish an organization to achieve those conditions. Optimistic religions tend to build institutions to bring about an envisioned society, whereas pessimistic religions seek simply to help the poor and the suffering - those who are vulnerable in society: widows, orphans, foreigners.

9.5 February

9.5.1 Frege in Context (2014-02-07 20:36)

In anybody's short list of significant philosophers and mathematicians of the nineteenth and twentieth centuries, Gottlob Frege will appear near the top. His direct and indirect influence extends to many philosophers and groups of philosophers, including those who were influenced by him in the sense of reacting against him.

Although Frege's work may be characterized as late modern or early contemporary, he nonetheless has a historical context. His seminal work symbolic logic and the foundations of mathematics might mislead us into thinking that he does not have a connection to great thinkers of earlier centuries. We will see, however, that to understand Frege in his historical context, we must view him in terms of John Locke and John Stuart Mill.

In his *Essay Concerning Human Understanding*, Locke address, among many other topics, language and reference. Locke asserts that the only possible referent of a word is an idea in the mind of the speaker (or writer). But, he writes, men mistakenly assume that their words can also refer to two other things: the ideas in the minds of others and the (physical) objects themselves. Leaving aside the latter comment about objects, the former comment about ideas in the minds of other leads us to considerations about reference.

The radical skeptic can issue all manner of objections to talk about ideas in the minds of others, let alone words referring to such ideas. But even the less-than-radical skeptic, one who is sympathetic to such a scheme of reference, will have concerns: Locke is such a one, and he raises such concerns. He imagines that it's acceptable to posit that the speaker's words may refer to ideas in the minds of others. But even if this is allowed, further problems remain.

If the speaker's words can simultaneously refer to ideas in the speaker's mind and idea in the listener's mind, how can we know that any one word will refer to the *same* idea in the speaker's mind and the listener's mind? If the speaker says the word 'x' and it refers to the idea x in the speaker's mind, how do we know that it also refers to the idea x in the listener's mind, and not, e.g., to the idea y?

This question gives rise to Locke's famous inverted spectrum example, and also to later examples like those given by Quine in his book *Word and Object*. These, and other types of qualia inversion problems, isolate the question of whether a word can refer reliably to an idea in more than one mind. Locke writes:

> Words are often secretly referred first to the ideas supposed to be in other men's minds. But though words, as they are used by men, can properly and immediately signify nothing but the ideas that are in the mind of the speaker; yet they in their thoughts give them a secret reference to two other things.

Although acknowledging the problem of inverted qualia - indeed, originating the problem - Locke also seems to be content to rely on experience, to the extent that for the practical purpose of daily life, language suffices. Whether or not the qualia be actually inverted - Locke points out that we could never know this - language would work as long as the inversion were consistent. He continues:

> First, they suppose their words to be marks of the ideas in the minds also of other men, with whom they communicate: for else they should talk in vain, and could not be understood, if the sounds they applied to one idea were such as by the hearer were applied to another, which is to speak two languages. But in this men stand not usually to examine, whether the idea they, and those they discourse with have in their minds be the same: but think it enough that they use the word, as they imagine, in the common acceptation of that language; in which they suppose that the idea they make it a sign of is precisely the same to which the understanding men of that country apply that name.

Finally, Locke returns to his initial assertion, that words refer properly only to the ideas in the mind of the speaker. The fact that we do, in practical daily life, act as if words also referred to ideas in the minds of listeners, or to physical objects themselves, is something other than reference properly construed. Locke therefore distinguishes between reference and what he calls the 'common acceptation' of an utterance (or of a writing). Ian Hacking writes:

> Does Locke support this doctrine of 'secrete reference'? I think the very phrase is loaded with Locke's characteristic irony. 'Give me leave here to say', he continues in case anyone has failed to take the point, 'it is a perverting the use of words, and brings unavoidable obscurity and confusion into their signification, whenever we make them stand for anything but those ideas we have in our own minds.' Signifying, remember, is a relation of precedence-or-consequence. So what Locke says seems correct. Note that another term is used in this passage, 'the common acceptation' of a word in a language. This is something quite different from signifying. Let us take, for example, the role of a name in some speech. Had the real Mark Antony said, 'I have come to bury Caesar, not to praise him', there would have been the idea of Caesar present in Mark Antony's mind. That is what the name 'Caesar' signifies, for Antony. The third plebeian, despite the inane responses Shakespeare puts in his mouth, doubtless also has some idea (possibly not Antony's) of Caesar. That is what the name signifies for him. In contrast, there is the actual person referred to, recently deceased. Finally there is, perhaps, something else in the public domain: everyone realizes that Rome's tyrant is under discussion. This shared cognition we might, borrowing Locke's phrase, call the common acceptation of the name 'Caesar'. Common acceptation enables Antony to address the multitude. It is whatever is 'public' about the established use of a word.

With this Lockean framework, the work of Gottlob Frege is seen in context. One of Frege's many accomplishments was to express more specifically and more technically that at which Locke had only hinted, or expressed with less exactitude. Ian Hacking continues:

The distinctions required were not made efficiently until the late nineteenth century, when Gottlob Frege had to legislate a distinction into the German language in order to avoid confusion. He took the word *Sinn* - which has been translated 'meaning' but in English is nowadays called 'sense' - as common acceptation. By way of contrast he used the word *Bedeutung* - equally translated 'meaning' but now fixed with the English word 'reference'.

In of the famous passages which earned Frege his place in the history of philosophy, he introduces his distinction between sense and reference - the distinction between *Sinn* and *Bedeutung*.

The regular connexion between a sign, its sense, and its reference is of such a kind that to the sign there corresponds a definite sense and to that in turn a definite reference, while to a given reference (an object) there does not belong only a single sign. The same sense has different expressions in different languages or even in the same language. To be sure, exceptions to this regular behaviour occur. To every expression belonging to a complete totality of signs, there should certainly correspond a definite sense; but natural languages often do not satisfy this condition, and one must be content if the same word has the same sense in the same context. It may perhaps be granted that every grammatically well-formed expression representing a proper name always has a sense. But this is not to say that to the sense there also corresponds a reference. The words 'the celestial body most distant from the Earth' have a sense, but it is very doubtful if they also have a reference. The expression 'the least rapidly convergent series' has a sense; but it is known to have no reference, since for every given convergent series, another convergent, but less rapidly convergent, series can be found. In grasping a sense, one is not certainly assured of a reference.

Here arises an interpretive question in the history of philosophy. Shall we spin the credit in Locke's favor or in Frege's favor? If we tilt it toward Locke, we might say that Locke conceptualized and expressed an important distinction about language, and that Frege merely tidied up the vocabulary used to express it. If we tilt it toward Frege, we might say that Locke was only vaguely aware this distinction, and that Frege uncovered and discovered and clearly articulated it. Ian Hacking writes:

Frege also considers something analogous to what Locke would have called the idea signified by a sign. Frege speaks of the 'idea' associated with a word, in contrast to the word's sense and reference. There has been much philosophy between Locke and Frege, and the word 'idea' has not stayed in its place, especially when translated into German as *Vorstellung* and back again. But enough has been preserved to take the continuation of this translated passage as read:

Hacking then goes on to cite this passage from Frege. Over the years, competing translations of Frege's works have been published, and the translation of some of his central vocabulary items has become a question. For example, *Sinn* and *Bedeutung* have been rendered variously as sense, reference, referent, meaning, and significance. Thus the question of which translation one is reading becomes important. In Max Black's translation, the text reads:

The reference and sense of a sign are to be distinguished from the associated idea. If the reference of a sign is an object perceivable by the senses, my idea of it is

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an internal image, arising from memories of sense impressions which I have had and acts, both internal and external, which I have performed. Such an idea is often saturated with feeling; the clarity of its separate parts varies and oscillates. The same sense is not always connected, even in the same man, with the same idea. The idea is subjective: one man's idea is not that of another. There result, as a matter of course, a variety of differences in the ideas associated with the same sense. A painter, a horseman, and a zoologist will probably connect different ideas with the name 'Bucephalus'. This constitutes an essential distinction between the idea and the sign's sense, which may be the common property of many and therefore is not a part of a mode of the individual mind For one can hardly deny that mankind has a common store of thoughts which is transmitted from one generation to another.

With Locke, Frege is content to leave the word 'idea' somewhat ambiguous. According to Frege, it can include sense-impressions, acts, memories of sense-impressions, memories of acts, and even objects of perception:

> We can include with ideas the direct experiences in which sense-impressions and acts themselves take the place of the traces which they have left in the mind. The distinction is unimportant for our purpose, especially since memories of sense-impressions and acts always help to complete the perceptual image. One can also understand direct experience as including any object, in so far as it is sensibly perceptible or spatial.

Yet Frege is clear that 'sense' must be distinct from 'idea' - even if 'idea' is left a bit vague. What is here rendered as 'idea' is *Vorstellung* which had served as a piece of Kantian jargon, and its appearance raises questions about to which extent Frege might be importing Kant's psychology. For Frege, Kant's metaphysics might be largely irrelevant, because Frege seems more concerned with logic and language. Frege's word *Gedanke* is here rendered as 'thought' and would become the topic of another famous essay by Frege. In any case, Frege's main occupations were *Sinn* and *Bedeutung*, and 'idea' and 'thought' received less of his attention. He is clear that *Sinn* and 'idea' were quite distinct:

> Hence it is inadvisable to use the word 'idea' to designate something so basically different.

The foundational role which Frege played in the beginning of contemporary philosophy consisted in his emphasis upon language and logic, and in his task of clarifying mechanisms by which both work. To be sure, Frege was a mathematician, and much of his work was with an eye toward mathematical uses of language and logic. Yet the philosophical implications of his own work did not escape him. The Fregean flavor of analytic philosophy permeates its various subdivisions. Milton Munitz writes:

> The development of analytic philosophy is a central and important aspect of twentieth-century thought. The term 'analytic philosophy', as we have remarked, does not designate a single, tightly organized, unified movement whose adherents subscribe to a well-defined body of commonly shared principles. There is much diversity - sometimes sharp antagonism of thought - among the various subgroups or individual thinkers collected under this heading.

In the diversity of contemporary analytic philosophy, Milton Munitz argues, the unifying thread is Frege. Frege is the point of departure: either one agrees with Frege and extends his work, or one disagrees with Frege and argues for some alternative position, or one explores some topic which has come to attention because of Frege.

> Yet despite this diversity, the utility of using the label 'analytic philosophy' derives from two principle considerations. First, there is enough (even if not total) unity to warrant the use of a common classificatory label for those philosophers whose broad orientation is 'analytic' in contradistinction to those falling outside this group. Second, and perhaps more to the point, the movement we are calling 'analytic philosophy' has special links to the germinal ideas of Frege. The multiple interconnections and influences among analytic philosophers are illuminated when seen as so many diverse offshoots of Frege's work. This is not to say that all analytic philosophers are 'Fregeans' in one form or another. This is emphatically not so. Many, to be sure, were directly influenced by Frege. They undertook to assimilate, interpret, and adapt what they found of value in Frege's work in their own thought. But even among these some found points on which they diverged from or criticized Frege. (Frege himself, for that matter, did not have a monolithic, unchanged set of doctrines to which he adhered.) Nevertheless, within the analytic movement there is by and large a direct line from Frege to other thinkers in which we can note a carrying out of an interpretation or amplification of Frege's themes, doctrinal emphases, and philosophic viewpoint. On the other hand, as we trace the unfolding of analytic philosophy, there are other component movements or individual thinkers whose characteristic theses and claims are best seen as reactions to those who had a more direct or sympathetic relation to Frege's views. Here the picture gets more complicated as we seek to follow the multiple crisscrossing interconnections. Suffice it to say for the moment that even the latter post-Fregean analytic movements are better understood when seen in terms of their place in relation to the Fregean matrix and starting point. I shall not now attempt to work out the relevant details of this observation, but will do so later at appropriate stages of our exposition. Yet it will be helpful to illustrate, in a preliminary way, the sort of thing I have mind.

Although Frege may be the foundation for contemporary analytic philosophy, he did not arise *ex nihilo*, as we have seen: he arises, in part, in a Lockean context. Saul Kripke notes that Frege also arise in the setting of John Stuart Mill's thought about proper names:

> Now, what is the relation between names and descriptions? There is a well known doctrine of John Stuart Mill, in his book *A System of Logic*, that names have denotation but no connotation. To use one of his examples, when we use the name 'Dartmouth' to describe a certain locality in England, it may be so called because it lies at the mouth of the Dart. But even, he says, had the Dart (that's a river) changed its course so that Dartmouth no longer lay at the mouth of the Dart, we could still with propriety call this place 'Dartmouth', even though the name may suggest that it lies at the mouth of the Dart. Changing Mill's terminology, perhaps we should say that a name such as 'Dartmouth' does have a 'connotation' to some people, namely, it does connote (not to me - I never thought of this) that any place called 'Dartmouth' lies at the mouth of the Dart. But then in some way it doesn't have a 'sense'. At least, it is not part of the meaning of the name 'Dartmouth' that the town so named lies at the mouth of the Dart. Someone who said that Dartmouth did not lie at the Dart's mouth would not contradict himself.

Even as contemporary philosophers who are staunchly anti-Fregean are nonetheless working in a Fregean context, so also Frege himself was working to some extent in Mill's context. Frege argues directly against Mill. Saul Kripke writes:

> But the classical tradition of modern logic has gone very strongly against Mill's view. Frege and Russell both thought, and seemed to arrive at these conclusions independently of each other, that Mill was wrong in a very strong sense: really a proper name, properly used, simply was a definite description abbreviated or disguised. Frege specifically said that such a description gave the sense of the name.

Mill's view of proper nouns was that they were directly linked to their referents: that they referred directly, not by means of a Fregean sense. Saul Kripke will side with Mill against Frege on this question:

> The modern logical tradition, as represented by Frege and Russell, seems to hold that Mill was wrong about singular names, but right about general names. More recent philosophy has followed suit, except that, in the case of both proper names and natural kind terms, it often replaces the notion of defining properties by that of a cluster of properties, only some of which need to be satisfied in each particular case.

While Saul Kripke embraces Mill's view of proper nouns, he reject Mill's view of common nouns - or he rejects what he takes to be Mill's view of common nouns. Some scholars question whether Kripke understood Mill properly on this point. Stephen Schwartz writes:

> Saul Kripke in his revolutionary and influential series of lectures from the early 1970s (later published as the book *Naming and Necessity*) famously resurrected John Stuart Mill's theory of proper names. Kripke at the same time rejected Mill's theory of general terms. According to Kripke, many natural kind terms do not fit Mill's account of general terms and are closer to proper names. Unfortunately, Kripke and his followers ignored key passages in Mill's *A System of Logic* in which Mill enunciates a sophisticated and detailed theory of natural kind terms that anticipates and is in some ways superior to Kripke's.

Frege's notion of *Sinn* was originally formulated as the way in which reference was made to an object. His famous example was the planet Venus, which is known both as 'the morning star' and as 'the evening star' - the same referent with two different senses. Thus, for Frege, *Sinn* was determined by a criterion: how one referred to an object. Later Fregeans would formulate *Sinn* as a set of criteria, from among which several could be chosen. Kripke writes:

> The modern logical tradition, as represented by Frege and Russell, disputed Mill on the issue of singular names, but endorsed him on that of general names. Thus all terms, both singular and general, have a 'connotation' or Fregean sense. More recent theorists have followed Frege and Russell, modifying their views only by replacing the notion of a sense as given by a particular conjunction of properties with that of a sense as given by a 'cluster' of properties, only enough of which need apply. The present view, directly reversing Frege and Russell, (more or less) endorses Mill's view of singular terms, but disputes his view of general terms.

According to Frege, the *Sinn* of a proper noun was a compressed description. A proper noun like 'Aristotle' contained, argues Frege, in a hidden way, a description like "the teacher of Alexander" or "a student of Plato" - Frege states:

> The sense of a proper name is grasped by everybody who is sufficiently familiar with the language or totality of designations to which it belongs; but this serves to illuminate only a single aspect of the reference, supposing it to have one. Comprehensive knowledge of the reference would require us to say immediately whether any given sense belongs to it. To such knowledge we never attain.

Working out the example of 'Aristotle,' Frege continues:

> In the case of an actual proper name such as 'Aristotle' opinions as to the sense may differ. It might, for instance, be taken to be the following: the pupil of Plato and teacher of Alexander the Great. Anybody who does this will attach another sense to the sentence 'Aristotle was born in Stagira' than will a man who takes as the sense of the name: the teacher of Alexander the Great who was born in Stagira. So long as the reference remains the same, such variations of sense may be tolerated, although they are to be avoided in the theoretical structure of a demonstrative science and ought not to occur in a perfect language.

While it is proper to view Frege as foundational to contemporary analytical philosophy, it is also proper to view him in the context of Locke and Mill. In this way, contemporary philosophy is seen in a way which emphasizes its continuity with the past.

9.6 January

9.6.1 Is Boltzmann a Phenomenologist? (2014-01-21 20:27)

Anyone familiar with the secondary literature on Ludwig Boltzmann knows that it is unusual, even odd, to refer to him as a phenomenologist. Yet a case can be made for doing precisely that. Arguments for viewing Boltzmann as a phenomenologist might even be plausible or persuasive. Such arguments will touch upon those points which empiricism and phenomenology have in common, or those points at which they come into contact with each other.

Ludwig Boltzmann, whose influence extended to Einstein and Planck, centered his notion of physics, and more broadly of natural sciences and of observational sciences, around phenomenology. Given his phenomenological leanings, he rejected any extensive role for the *a priori* in sciences, and rejected much of Kant's version of physics.

Yet in some ways he seems to explicitly reject phenomenology. There is a tension within Boltzmann's thought: while arguing against phenomenologists, and eschewing the label of phenomenologist, he appears to embrace and even rigorously apply some phenomenological principles.

Both in science and in mathematics, Boltzmann sought a synthetic method which he considered to be simpler. Simplicity as a decision procedure for choosing between competing theories, which otherwise map nicely to the same data sets, is a familiar concept in the philosophy of science. Ernst Mach was roughly contemporary to Boltzmann. Alluding to Mach, Boltzmann wrote in 1892 about an economy of effort, which might be an analogue to simplicity as the concept is used in the philosophy of science concerning competing theories:

In mathematics and geometry the return from purely analytic to constructive meth-
ods and illustration by means of models was at first occasioned by a need for econ-
omy of effort. Although this seems to be purely practical and obvious, it is just here
that we are in an area where a whole new kind of methodological speculations has
grown up which were given most precise and ingenious expression by Mach, who
states straight out that the aim of all science is only economy of effort.

The ambiguity in Boltzmann's relationship with phenomenology may arise from his use of some
form of the principle of verification. Boltzmann's career path touched Ernst Mach's at a number
of points, and Mach was a founding member of the Vienna Circle. The Circle was, of course,
strongly linked to the verificationist understanding of meaning. Boltzmann was perhaps less
interested in meaning and language, and used the verificationist principle more in the context
of the philosophy of science. Inasmuch as verificationism is part of a radical empiricist program,
and because both empiricism and phenomenology take raw sense-data as their foundation or
point of departure, there is an overlap between verificationism and phenomenology, and this
overlap gives rise to Boltzmann's ambiguity regarding phenomenology.

The more radical versions of empiricism and phenomenology take sense-data not only as a
point of departure, but as the only possible point of departure - not as a foundation, but as
the only possible foundation. The overlap between the two is highlighted in their more radical
versions. Because much of Boltzmann's work in physics centered around particles invisible
to the naked eye, the usual caveats about "indirect" or "in principle" observation apply to
empirical verification of scientific theories. Paul Pojman writes that Ernst Mach

became embroiled in a long-standing dispute with Boltzmann, propounder of the ki-
netic theory of gasses. Boltzmann and Mach ended up agreeing in essence: if atomic
theory was fruitful it should be used, but adopted what today might be considered an
anti-metaphysical stance toward a theory that was still largely unsubstantiated. It is
generally agreed that it was not until 1905 with Einstein's study of Brownian motion
that the kinetic theory of molecules found full verification.

Consistently applying the phenomenological method, while seemingly denying that he was
a phenomenologist, Boltzmann offered a critique of Friedrich Wilhelm Ostwald. Ostwald had
wanted to relegate matter to the status of a construct; for Ostwald, matter was not among the
atomic or foundational concepts of the world. As Joachim Schummer wrote,

The more Ostwald became convinced that thermodynamics is the fundamental the-
ory of science — for which he saw evidence in the pioneering works of the American
physicist Josiah Willard Gibbs and others — the more he engaged in natural philos-
ophy. Two aspects may roughly characterize his philosophy. First, he asserted the
primacy of energy over matter (matter being only a manifestation of energy) in op-
position to widespread scientific materialism. Ostwald reformulated older concepts
of dynamism dating back to the 17th-century German polymath Gottfried Leibniz
with the principles of thermodynamics to form a new metaphysical interpretation of
the world that he named "energetics." Second, he asserted a form of positivism in
the sense of rejecting theoretical concepts that are not strictly founded on empirical
grounds. Although energetics found few adherents, the latter position found many
contemporary proponents, such as the physicist-philosophers Ernst Mach in Austria
and Pierre Duhem in France. As a consequence of his beliefs, for some 15 years
Ostwald rejected atomism and was heavily involved in philosophical debates with

his atomist colleagues, such as the Austrian physicist Ludwig Boltzmann, before he acknowledged the growing experimental evidence for the atomic hypothesis in 1909.

Detecting an inconsistency in Ostwald's views, Boltzmann noted that it was equally unfounded to take energy as foundational or atomic to the universe. The arguments leveled against matter, or against the reality of matter, can be effectively and equally reformulated and leveled against energy. Boltzmann, again with Mach, sees matter and energy as equally derivative. What is foundational, as far as anything can be foundational in phenomenology, are sense-data. In a consistent phenomenological system, sensations are taken as the given. In 1904, Boltzmann wrote:

> Mach pointed out that we are given only the law-like course of our impressions and ideas, whereas all physical magnitudes, atoms, molecules, forces, energies and so on are mere concepts for the economical representation and illustration of these law-like relations of our impressions and ideas. These last are thus the only thing that exists in the first instance, physical concepts being merely mental additions of our own. Ostwald understood only one half of this proposition, namely that atoms did not exist; at once he asked: what then does exist? To this his answer was that it was energy that existed. In my view this answer is quite opposed to Mach's outlook, for which energy as much as matter must be regarded as a symbolic expression of certain relations between perceptions and of certain equations amongst the given phenomena.

Although Boltzmann was not in the mainstream of phenomenology, he is nonetheless a phenomenologist of some sort. Admittedly, some scholars refuse to classify his as such. Neither is he an idealist, in the sense of George Berkeley, but he veers close to some type of idealism. Manfred Grunwald corroborates Boltzmann's influence, but disputes his phenomenology and idealism, when he writes:

> Der berühmte Physiker und materialistiche Denker hat auf die weltanschaulichen Auffassungen Plancks und Einsteins großen Einfluß ausgeübt.

The question of whether radical empiricism and radical phenomenology are finally identical lies at the core of the question of whether or not Boltzmann is to be counted as some type of phenomenologist. His rejection of anything which he saw as metaphysical nudges him in the direction of empiricism. If it nudges him far enough into empiricism, and if empiricism at some point becomes one with phenomenological approaches, then we might be correct to label Boltzmann a phenomenologist, despite his own objections to that label, and despite a large body of respectable secondary literature which also declines to call him a phenomenologist.

Framed more broadly, the question emerges as this: is every empiricist a phenomenologist? is every empiricism a phenomenology? If we answer 'no' then we must articulate the distinction between phenomenology and empiricism. Alternatively, we can see phenomenology as a methodology within empiricism.

A surprising connection between Boltzmann's anti-Kantian view of physics and his social and ethical views arises from his interest in Darwin. Boltzmann's affection for Darwinism, however, gives rise to some methodological questions. Does Darwinism require Boltzmann to abandon the rigor with which he usually follows his phenomenological method? Can the arguments which Boltzmann directs against Kant and against Kantianism also be directed against Darwin and Darwinism? Manfred Grunwald continues:

Von Interesse ist Boltzmanns Stellungnahme zum Apriorismus. Er kritisierte den Apriorismus vor allem von dem einem Standpunkt, der sich aus der Entwicklungstheorie Darwins ergibt. Die sogenannte Denkgesetze hätten sich nach dem biologischen Gesetzen der Evolution gebildet und allmälich die Festigkeit aprioristischer Sätze angenommen. Die Einseitigkeit des nur durch die biologische Evolutionstheorie geprägten Herangehens und die Gefahren sozialdarwinistischer Deutungen werden in den Stellungnahmen Boltzmanns zu ethischen Fragen deutlich. Handlungen sind für ihn richtig und gut, soweit sie der Fortentwicklung der lebenden Materie dienen. Das Grundproblem der Ethik sah Boltzmann in der Beziehung zwischen der Behauptung oder Unterordnung des Willens eines Individuums und der zu fördernden Existenz eines Ganzen (Familie, Stamm, Menschheit). Einerseits behauptete er, daß sich aus den primitiven Formen der Materie, in Pflazen und Tieren, anzutreffenden Fähigkeiten (Vererbung, Zuchtwahl, Wahrnehmung, Willen, Lust, Schmerz) und ihrer quantitativen Steigerung das Denken und Wollen, das künstlerische Schaffen, die wissenschaftliche Forschung und das moralische Verhaltung der Menschen hinreichend erklären ließen. Andererseits erklärte er, daß er nur die »;naturwissenschaftliche begreifliche Seite« betrachte. Boltzmann lehnte die Verbindung naturwissenschaftlicher und religiöser Begriffe ab, weil beide aus gänzlich verschiedenen Bereichen stamman. Es zeigt sich die bei bürgerlichen Naturwissenschaftlern verbreitete Tendenz, der Religion das Gebiet der Moral zuzuweisen.

To the nature of Boltzmann's phenomenology - for phenomenology it was, if an unorthodox phenomenology - the following passage is in a longer text written by Byong-Chul Park:

As one of the founders of statistical thermodynamics, Boltzmann could not fully endorse the phenomenological method in physics. It is nevertheless an undeniable fact that Boltzmann uses the term 'phenomenology' in such a way that phenomenology in his sense is only concerned with our experience without any hypothesis in dealing with phenomena.

However one might characterize Boltzmann's phenomenology, and however it may compare and contrast to the phenomenological systems of other philosophers, Darwinism would entail a number of hypotheses which Boltzmann's understanding of phenomenology would not admit. In 1886, Boltzmann wrote:

Nowhere less than in natural science does the proposition that the straight path is the shortest turn out to be true. If a general intends to conquer a hostile city, he will not consult his map for the shortest road leading there; rather he will be forced to make the most various detours, every hamlet, even if quite off the path, will become a valuable point of leverage for him, if only he can take it; impregnable places he will isolate. Likewise, the scientist asks not what are the currently most important questions, but "which are at present solvable?" or sometimes merely "in which can we make some small but genuine advance?"

It would seem, then, from Boltzmann's philosophy of science, that the formulation of a grand system explaining the origin of life from lifeless matter, and this billions of years prior to any possible observation, would have no place in sober science. Boltzmann's phenomenological sense of science rejects the grand speculative systematic drive, present already in Kant and manifested grossly in Hegel. But does consistency demand that this sense of science likewise

reject Darwinism with its hypotheses about processes which may have happened billions of year prior to any possible observation, with its hypotheses about life arising spontaneously from lifeless matter, and with speculations about matter and time emerging *ex nihilo*? Has Boltzmann violated his own methodological principles in embracing Darwin?

Boltzmann may have had some sense of the tension between his phenomenological and his non-phenomenological leanings. Note the contrast between the words 'internal' and 'external' in this passage, which he wrote in 1890:

> I am of the opinion that the task of theory consists in constructing a picture of the external world that exists purely internally and must be our guiding star in all thought and experiment; that is in completing, as it were, the thinking process and carrying out globally what on a small scale occurs within us whenever we form an idea.

In Boltzmann's philosophy of science, then, theory is a speculative generalization - a projection - a writing large of our thoughts onto the universe. By thus defining 'theory' Boltzmann perhaps wished to avoid the methodological tensions between his attempt to apply a rigorous if idiosyncratic phenomenology and his affection for Darwinism. While not a phenomenologist in any usual sense of the word, he was certainly influenced by phenomenological methodologies. Albert Moyer writes:

> Boltzmann did not agree that generalized, phenomenological theories were better equipped to reestablish order than were specialized, atomomechanical hypotheses. Though appreciative of phenomenological theories, he denied that such theories were free from hypotheses or idealizations and hence irrefutable. "Without some departure, however slight, from direct observation," he maintained, "a theory or even an intelligibly connected practical description for predicting the facts of nature cannot exist." Moreover, Boltzmann felt that the usefulness of phenomenological theories was limited merely to summarizing or developing "knowledge previously acquired." On the other hand, specialized and admittedly tentative hypotheses "give the imagination room for play and by boldly going beyond the material at hand afford continual inspiration for new experiments, and are thus pathfinders for the most unexpected discoveries." Consequently, he rejected the accusation that the "development of mathematical methods for the computation of the hypothetical molecular motions has been useless and even harmful." He also felt that the recent web of experiments involving cathode rays and radioactivity added credence to the atomistic viewpoint. Boltzmann was particularly optimistic about statistical mechanics.

Despite his dissimilarity to other phenomenologists, and despite what seems to be his explicit rejection of phenomenology, Boltzmann's sense of methodology retains features of phenomenology. Perhaps aware of this internal tension, some of his statements reflect perhaps an attempt to resolve such possible inconsistencies.

10. 2013

10.1 November

10.1.1 Ludwig Boltzmann Praises Michael Faraday (2013-11-13 20:45)

Ludwig Boltzmann, a significant physicist in his own right, was much influenced in his thinking by a physicist of a previous generation, Michael Faraday. Boltzmann routinely praised Faraday as major thinker. Boltzmann's admiration of Faraday is interesting because the two men differed both in temperament and in method. Boltzmann was a morose man with little hope or cheer. Faraday was an optimistic and cheerful man. More to the point, Boltzmann, like most physicists of his era, emphasized quantitative methods and quantitative descriptions as ensuring that the propositions they considered were observable and measurable. By contrast, Faraday worked in a largely non-quantitative manner; to be sure, his propositions were observational and empirical, and were perhaps quantitative in the most minimal sense of the word, but he demonstrated a singular lack of interest in equations or in any algebraic expressions of his discoveries.

While Boltzmann praised Faraday's work, he also recognized the profound differences between himself and Faraday, and the differences between Faraday and a later generation of physicists. He was quick to acknowledge these differences, and believed that these later physicists wrongly ignored Faraday because of his alternative methods. Boltzmann was patient enough to look at Faraday's writings for their valuable insights, despite Faraday's departure from Boltzmann's preferred methods. In 1892, Boltzmann wrote:

> Several scientists, amongst whom Faraday is foremost, had fashioned for themselves a quite different representation of nature. Whereas the old system regarded force centers as the only reality while treating forces as mathematical concepts, Faraday saw these latter as clearly operative from point to point of intervening space; the potential function, previously a mere formula facilitating calculation, he regarded as the really existing link in space and cause of the action of forces. Faraday's ideas were much less clear than the earlier hypotheses that had mathematical precision, and many a mathematician of the old school placed little value on Faraday's theories, without however reaching equally great discoveries by means of his own clearer notions.

During Boltzmann's lifetime, various philosophers were developing what would come to be known as the "picture theory" of representation. Boltzmann considered that a picture could be, if not non-quantitative, at least not primarily quantitative, but rather qualitative. While Boltzmann preferred quantitative methods, he saw Faraday as constructing new and significant "pictures" in physics in a way which was not primarily quantitative. In 1890, Boltzmann wrote:

> It is a peculiar drive of the human spirit to make itself such a picture and increasingly to adapt it to the external world. If therefore we may often have to use intricate formulae to represent a part of the picture that has become complicated, they nevertheless always remain inessential if most serviceable forms of expression, and in

our sense Columbus, Robert Mayer, and Faraday are genuine theoreticians. For their guiding star was not practical gain but the picture of nature within their intellect.

Boltzmann perhaps regarded Faraday as a diamond in the rough, but a diamond nonetheless. The praise which an otherwise very restrained Boltzmann heaps on Faraday is noteworthy, considering Boltzmann's acquaintance with other major physicists like Ernst Mach. In 1899, Boltzmann wrote:

> Our factual knowledge of electricity and magnetism was enormously increased by Galvani, Volta, Oerstedt, Ampere and many others, and was brought to a certain finality by Faraday. The latter, using rather limited means, had found such a wealth of new facts that it long seemed as though the future would have to confine itself merely to explaining and practically applying all these discoveries.

Faraday's major contributions, in the standard accounts of his activity, include the discovery of benzene and the process by which gases can be liquified. But his major work was in the field of electromagnetism. He discovered the relation between magnetism and electricity, designing and constructing the world's first electrical generator and the world's first electrical motor. He further discovered the field of electro-chemistry, and documented the effects of electricity on chemical reactions. Faraday also discovered the effects of magnetism on light, working with polarized lenses.

Michael Faraday belonged to a movement known variously as the Sandemanian or the Glasite movement. To which extent his involvement in this movement affected his work in physics and electromagnetics is not obvious, but he was, in any case, an active leader in that organization.

Faraday greatly influenced James Clerk Maxwell. James Maxwell's significant career in physics can be said perhaps to have consisted of a systemization of Faraday's discoveries. Maxwell expressed mathematically what Faraday discovered observationally. James Blackmore writes:

> Perhaps the easiest way to make these differences clear between how different groups of people think would be to comment on Michael Faraday's two most famous followers, Maxwell, who put much of Faraday's work in mathematical form and who became a hero among theoretical physicists especially Boltzmann, and Thomas Alva Edison who devoured Michael Faraday's "merely qualitative" book *Experimental Researches in Electricity* (1839-1855) to lay the groundwork for inventing or improving to the point of practicality the electric light bulb, the phonograph, the dictaphone, moving pictures, and numerous other electrical instruments. Maxwell and Boltzmann might doubt the existence of power and force or consider them subordinate or superfluous factors, especially in idealized or statistical aspects of theoretical physics, but Edison and other practical inventors had no such luxury. Power or force were vital means toward virtually all practical ends in applied science, and valid methodology of science had to acknowledge that primacy.

Boltzmann was not the only thinker to praise Faraday. Jearl Walker, in a widely-used textbook, describes Faraday:

> The new science of electromagnetism was developed further by workers in many countries. One of the best was Michael Faraday, a truly gifted experimenter with

a talent for physical intuition and visualization. That talent is attested to by the fact that his collected laboratory notebooks do not contain a single equation. In the mid-nineteenth century, James Clerk Maxwell put Faraday's ideas into mathematical form, introduced many new ideas of his own, and put electromagnetism on a sound theoretical basis.

Faraday's largely intuitive approach in electromagnetics may be compared to the intuitive discoveries in mathematics made by Srinivasa Ramanujan. In any case, Faraday's discoveries are significant not merely because he was the first to observe a specific behavior in a laboratory, but also because he was able to correctly conceptualize what he observed. He not only was the first to see these things: he was the first to understand them.

10.2 October

10.2.1 Ernst Mach: Phenomenology and Physics (2013-10-09 14:23)

Ernst Mach worked in a wide variety of subfields within physics and philosophy, with occasional but significant forays into other disciplines. His name is perhaps most widely known from the unit of measurement named after him.

Perhaps the unifying thread among his diverse activities was a type of phenomenology tinged with his strong dislike of metaphysics. Therein lies both a strength and a weakness within Machian thought: a methodological strength from the perspective of phenomenology, and a weakness arising from an internal tension between Mach's anti-metaphysical sentiment and the rigorous methodological demands of phenomenology. Such a tension would arise from the notion that phenomenology is tabling of questions about metaphysical realities - not a denial of such realities - and an exclusive attention to the metrics and patterns of appearance.

To be sure, Mach or a Machian would respond by pointing out that, as David Woodruff Smith has indicated, there is a variety of types of phenomenology, some of which might allow assertions or speculations about the reality or irreality of the *Ding an sich*. Mach wants to use the methodology of phenomenology while at the same time making a dogmatic statement about the nonexistence of certain metaphysical constructs. The mainstream of phenomenology, typified by Edmund Husserl, strictly demands that one refrain from assertions about metaphysical entities. While there is room for Mach to consider himself a phenomenologist, he certainly would be outside the mainstream of phenomenology.

We might compare three approaches: Husserl won't - chooses not to - occupy himself with questions about the nounema behind the phenomena: this is a conscious methodological choice to refrain from discussion of the noumena. The Vienna Circle and the logical positivists assert that language about the noumena is nonsense, i.e., that it is not possible to discuss it. Mach seems to start from something like a logical positivist approach, but occasionally slips into making assertions that the noumena does not exist. Such assertions would both violate Husserl's policy of voluntarily restraining one's self, as a methodological principle, from making statements about the noumena, and violate the Vienna Circle's notion that such assertions are meaningless.

Some of Mach's remarks, taken in isolation, fall within traditional phenomenology. (Mach's spelling sometimes appear idiosyncratic to eyes accustomed to twenty-first century German, but a variety of spelling reforms were being discussed and circulated in his day; those proposals

have left their fingerprints on his texts.) To say that metaphysics is an idle pursuit, that it should be eliminated from the natural sciences, or that such questions can be meaningfully pursued in discussion and debate, are statements with which, with perhaps a little fine-tuning, Husserl's disciples could agree.

> Meinen erkenntnisskritisch-physikalischen und den vorliegenden sinnesphysiologis-chen Versuchen liegen dieselbe Ansicht zu Grunde, dass alles Metaphysische als müs-sig und die Ökonomie der Wissenschaft störend zu eliminieren sei. Wenn ich nun hier auf die abweichende Ansichten nicht ausführlich kritisch und polemisch eingehe, so geschieht dies wahrlich nicht aus Missactung derselben, sondern in der Überzeugung, dass derartige Fragen nicht durch Discussionen und dialectische Gefechte ausgetra-gen werden.

As a physicist, Mach applied the phenomenological method to the concept of bodies enduring over time. This version of the problem of identity is not new, but Mach develops the argument in a novel direction. He links our tendency - in his view, our mistaken tendency - to see a stronger identity over time than evidence warrants as the expression of a fear. It is our fear of death, and more generally our fear of a loss of identity's duration over time, which predisposes us to embrace a metaphysical notion of identity, i.e., a notion which, in Mach's view, goes beyond empirical sense data. Mach links our inclination to posit the identity of an object over time to our inclination to posit the duration of our own "self" or "ego" over time; he seems to indicate that the one inclination arise from the other, and that our desire to perceive our own existence's duration arises from a fear of death.

> Das Ich ist so wenig absolut beständig als die Körper. Was wir am Tode so fürchten, die Vernichtung der Beständigkeit, das tritt im Leben schon in reichlichem Masse ein.

Mach's strong drive to deny any metaphysic leads him in psychology to deny any "ego" or "self," fearing that any such psychological construct would ultimately open the door to dualism or metaphysics. In physics, that same drive leads him to construct a descriptive model of natu-ral science, or observational science, along the lines of phenomenology. Science, for Mach, is the collecting and measuring of experience. Science describes sense data in the most simple and objective manner - which usually means quantitatively - and describes patterns which ex-ist among those data, using the tools of geometry and algebra. While starting with a program which seeks to exercise admirable restraint - along the lines of Husserl's phenomenology or a sober Kantianism - Mach seems to get carried away, and rather than simply refraining from passing judgment on metaphysical assertions, wants rather to deny them. His heirs, the log-ical positivists and the Vienna Circle, will attempt this restraint as they declare metaphysical propositions to be, not false, but meaningless. Mach seems at times to fall short of that de-velopment, and rather is eager to deny the existence of *Ding an sich*. Allan Janik and Stephen Toulmin write:

> Mach's reduction of all knowledge to sensation forms the base on which all of his thinking is founded. The task of all scientific endeavor is to describe sense data in the simplest or most economical manner. Mach actually prefers to designate sense data by the more neutral and noncommittal term "elements"; it is the feature of simplicity or economy which is distinctively scientific. So Mach's point of view is that of a thoroughgoing phenomenalist; the world is the sum total of what appears to the senses. So, dreams constitute "elements" in the world just as much as any other

class of elements, for "inner" experience is *experience* quite as much as "outer" experience is. Abstract conceptions, ideas, representations, are similarly reduced to sense data, by being identified as species concepts which enable us to deal with groups of "elements" efficiently.

Reflecting philosophy's insights into, and concerns with, language, Mach notes that our use of names, and the thoughts to which they refer or for which they are symbols, reveal our tendency - both as a desire and as simply a habit of thought - to posit the continued existence of objects over time. He notes that our inclination towards such concepts is strong enough that "Ship of Theseus"-type objections from Aristotle or Heraclitus make little impact on it.

> Die zweckmässige Gewohnheit, das Beständige mit einem Namen to bezeichnen und ohne jedesmalige Analyse der Bestandteile in einen Gedanken zusammenzufassen, kann mit dem Bestreben die Bestandteile zu sondern in einen eigentümlichen Widerstreit geraten. Das dunkle Bild des Beständigen, welches sich nicht merklich ändert, wenn ein oder der andere Bestandteil ausfällt, scheint etwas für sich zu sein.

In a classic phenomenological formulation, Mach tells us that objects simply are a collection of sense data. The classic formulation, however, leaves him with a classic problem. If we think of each sense datum as a point - maybe structured with three places: time, location, and which of the five senses obtained the input - then we think of an object as a set of such points. With Mach's denial of any enduring identity of an object beyond the positing of such a set, it seems that he might be forced to acknowledge as an 'object' some very counterintuitive juxtapositions of sense-data, e.g., non-contiguous sets.

By his own restrictions, Mach may not say that an object is the collection of my "sense-data of it," because the phrase "of it" imports the very metaphysical notion which he opposes. He must rather say that an object is a collection of sense-data. He may be forced to acknowledge some unlikely objects consisting of arbitrary collections of sense-data. I might take my sense-data of listening to a piano in Michigan in 1983 and place it into a set with my sense-data of flying in an airplane over Nebraska in 1975, yielding a set with more than one sense-datum in it, and thereby an "object" according to one understanding of Machian phenomenology.

> Das Ding, der Körper, die Materie ist nichts außer dem Zusammenhang der Elemente, der Farben, Töne u.s.w. außer den sogenannten Merkmalen. Das vielgestaltige vermeintliche philosophische Problem von dem einen Ding mit seinen vielen Merkmalen entsteht durch das Verkennen des Umstandes, dass übersichtliches Zusammenfassen und sorgfältiges Trennen, obwohl beide temporär berechtigt und zu verschieden Zwecken erspriesslich, nicht auf einmal geübt werden können. Der Körper ist einer und unveränderlich, so lange wir nicht nötig haben, auf Einzelheiten zu achten.

Thus Mach responds by saying that an object's - a body's - unity and continuity are illusions and dissolve under disciplined analysis of our observations of it. Allan Janik and Stephen Toulmin write:

> As a positivist, Mach was absolutely opposed to any sort of metaphysical speculation. He equated metaphysics with mysticism and consequently with obfuscation in science. In psychology he was a relentless opponent of all those who posited the

"ego" as an entity; he rejected any position which smacked of the slightest hint of dualism, for he said that all dualism culminates in metaphysics. Indeed, as an ardent positivist, he did not recognize philosophy to have any legitimacy apart from science, and he continually insisted that he was not a philosopher. David Hume, the destroyer of all metaphysical claims to truth, and Georg Christoph Lichtenberg, the enemy of a pseudo science, were his philosophical heroes. Mach was, in fact, the first man to draw attention to the philosophical significance of Lichtenberg, whose writings soon became popular and influential in the artistic and intellectual circles of Vienna.

Using a classic example of the optical illusion of a straight stick or pencil partially submerged in water, and of its apparent bentness due to refraction despite our "knowledge" that it is straight, Mach wishes to reformulate our conclusion about the pencil. He rejects the usually conclusion that the pencil is straight but appears bent. He rejects that formulation because it smacks of metaphysics inasmuch as it contrasts being to appearance, and he fears that this is the toehold of metaphysics. He rather wants to formulate the conclusion thusly: the pencil is optically bent but haptically straight. (If we close our eyes and put our hands into the water, there is no evidence or sense of bentness.) By rephrasing this classic example according to his phenomenological program, he hopes to deny entry to metaphysics.

> Man pflegt in der populären Denk- und Redeweise der Wirklichkeit den Schein gegenüber zu stellen. Einen Bleistift, den wir in der Luft vor uns halten, sehen wir gerade; tauchen wir denselben schief ins Wasser, so sehen wir ihn geknickt. Man sagt nun in letzterem Falle: Der Bleistift scheint geknickt, ist aber in Wirklichkeit gerade. Was berechtigt uns aber eine Tatsache der andern gegenüber für Wirklichkeit zu erklären und die andere zum Schein herabzudrücken? In beiden Fällen liegen doch Tatsachen vor, welche eben verschieden bedingte, verschiedenartige Zusammenhänge der Elemente darstellen. Der eingetauchte Bleistift ist eben wegen seiner Umgebung optisch geknickt, haptisch und metrisch aber gerade.

In physics, Mach's phenomenology led him to oppose Newton's view of space as substantival. Newton had argued that there is a thing, an object, called 'space' - that when we use the word 'space,' we are in fact referring to a physical reality. Historically, Leibniz opposed Newton and argued that space does not have the status of a *Ding an sich*, but exists merely as the description of the relative locations of physical objects. Newton would have argued that if one removed all matter and energy from the universe, one would still have empty space. Leibniz would have argued that the removal of all matter and energy would leave nothing. For Newton, empty space and nothing are two different situations; for Leibniz, they are the same. Mach winds up being closer to Leibniz than to Newton. Mach accuses Newton of dabbling in metaphysics when the latter posits space as real. Lawrence Sklar writes:

> Ernst Mach was simultaneously a working theoretical physicist and a positivist philosopher. He made, in his *Science of Mechanics*, a heroic attempt to replace Newton's theory by an alternative theory. The alternative is supposed to be adequate to account for the inertial forces Newton took as the primary data supporting his doctrine of substantival space, but to lack any such "metaphysical" elements that infected, according to Mach, the Newtonian scheme.

Mach seems to indicate that while physicists are well aware of the tendency of prejudices to sneak into their work, and are therefore alert to look out for them, psychologists are by contrast

not as aware of the subtle influences which preconceived notions can have in their work. Here, Mach is perhaps thinking of the notion of an object or a body from physics working its way into psychology as the notion of the 'ego' or 'self' or 'mind.' Part of Mach's program, then, is to purify psychology and structure it so that it will keep such prejudices at bay. A psychology structured according to Machian phenomenology will smell the metaphysics which clings to the concept of the 'self' and reject that concept.

> Der Physiker hat oft Gelegenheit zu sehen, wie sehr die Erkenntnis eines Gebietes dadurch gehemmt werden kann, dass anstatt der vorurteilslosen Untersuchung desselben an sich, die auf einem andern Gebiet gefassten Ansichten auf dasselbe übertragen werden. Weit bedeutender ist die Störung, welche durch solche Übertragung vorgefasster Meinungen aus dem Gebiet der Physik in jenes der Psychologie entsteht.

Accordingly, Mach rejects the notion that psychological terms like 'will' refer to anything beyond a set of sense-data. One might detect traces of Mach's encounter with Schopenhauer's books here. In any case, Mach is quite clear that the word 'will' does not refer to a psychological object - indeed, Mach would reject the very notion of a psychological object beyond a collection of experiences - and sees rather the 'will' as something physical, organic, and biological:

> Ich verstehe unter dem Willen kein besonderes psychisches oder metaphysisches Agens, und nehme keine eigene psychische Kausalität an. Ich bin vielmehr mit der überwiegenden Zahl der Physiologen und modernen Psychologen überzeugt, dass die Willenserscheinungen aus den organisch-physischen Kräften allein, wie wir kurz aber allgemein verständlich sagen wollen, begreiflich sein müssen.

Mach is, then, a phenomenologist of some type. The question is: of which type? To which extent would Mach harmonize with Husserl? Having established himself as a phenomenologist, Mach wishes to apply his phenomenology to empirical and observational science - he would hardly allow the existence of any other type of science. Mach wishes to restructure physics and psychology according to his phenomenology, and in so doing, is in conflict with Newton. To which extent was Mach successful? On the one hand, he had a significant influence on Einstein; on the other hand, Newton remains a powerful influence.

10.3   September

10.3.1   Ludwig Boltzmann - Philosophy and Physics (2013-09-13 12:34)

Brilliant and creative thinkers are found at the intersection of philosophy and physics. Topics like time, space, and the structure of scientific theories make fertile ground in which the thoughts of philosophers and physicists flourish.

Ludwig Boltzmann is one such thinker. He is largely responsible for the fact that the second law of thermodynamics has become associated with the concept of entropy. Boltzmann worked with thermodynamics generally, and with statistical approaches to physics. His work is in many ways foundational to certain subtopics within physics.

In approaching statistical definitions in physics, Boltzmann touched upon a central topic in the philosophy of science in general, the underdetermination of theories. Both hypothetically and

in practice, we are confronted with competing theories, and in some cases, more than one theory fits the data. Our choice of theory, then, in such circumstances cannot be made by the data or with regard to the data. Boltzmann wrote, in 1899, that

> we remain faithful to our principle that for the time being we are not aiming at a single best account of science, but that we regard it as expedient to try as many accounts as possible, each of which has its peculiar advantages but also its drawbacks. Again we must focus our main attention on avoiding all inconsistencies and logical mistakes and on not smuggling in tacit concepts or assumptions, and ensure on the contrary that we become most clearly aware of all hypotheses we rely on.

In arguing against Schopenhauer's assertion that the law about the conservation of matter, a law often associated with the name Lavoisier, is true and knowable *a priori*, Boltzmann wrote in 1905 that

> doubts about this law have arisen in connection with the behavior of radium. I am convinced that these experiments too will confirm the law, but that proves the law to be other than a priori: were it not to hold, we could retort nothing from a logical point of view.

Correctly foreseeing that the radium example, what we now understand to be the decay of an unstable isotope, would not violate the law, but rather refine our understanding of it as the conservation of matter and energy, Boltzmann indicated its empirical nature. (Lavoisier was probably not the first to stumble upon the conservation of mass, but he publicized it and so his name became associated with it.) Despite his emphasis upon mathematical methods, Boltzmann maintained that physics had an essentially empirical aspect:

> Thus we must change all laws of thought in such a way that they lead everywhere to the same goal, that they correspond to experience and that overshooting the mark is kept within proper bounds. Even if this ideal will presumably never be completely realized, we can nevertheless come nearer to it, and this would ensure cessation of the disquiet and the embarrassing feeling that it is a riddle that we are here, that the world is at all and is as it is, that it is incomprehensible what is the cause of this regular connection between cause and effect, and so on. Men would be freed from the spiritual migraine that is called metaphysics.

We see here a connection between Boltzmann's more technical results - dealing with the dynamics of molecules and their speeds, especially in gasses - and contact with questions of philosophical interest - it is a riddle that we are here, it is a riddle that the world is at all, and it is a riddle that the world is as it is and is not otherwise. He hoped, not to answer such questions or solves such riddles, but rather to sidestep them by directing physics as a whole toward empiricism. To some extent, Boltzmann may have here anticipated logical positivism and the Vienna Circle - to the extent that we can interpret him to be saying that such riddles and questions do not need to be answered, but rather need to be recognized as nonsense. Allan Janik and Stephen Toulmin offer a synopsis of Boltzmann's work. They write that the influence of Kant and of Heinrich Rudolf Hertz

> is evident also in the ideas of Ludwig Boltzmann, the man who founded the "statical mechanics" which lies at the basis, not only of the twentieth-century approach to

thermodynamics, but of the modern attitude toward theoretical physics generally. Boltzmann took Hertz's account of mechanics as defining a system of "possible sequences of observed events," and made it the starting point for a general method of theoretical analysis *in physics itself*. He did so, by treating each independent property of a physical system as defining a separate coordinate in a multidimensional system of geometrical coordinates. All the possible locations of each separate body in the physical system, for instance, were ordered along three spatial "axes of reference"; all values of, say, temperature along another axis; all values of, say, pressure, along a fifth; and so on. The totality of theoretical "points" in the resulting multidimensional coordinate system gave one a representation of the "ensemble of possible states" of the physical system in question; and any actual state could be defined, by specifying the particular point in this "multidimensional space" whose coordinates correspond to the actual values of all the variables. The general problem for statistical mechanics was then to discover mathematical relations governing the frequencies with which - on various assumptions and conditions - the *actual* states of a physical system would be distributed among its *possible* states; and, so, to compute the relative probabilities of finding the system, in actual fact, in one overall physical state rather than another.

There may be some hint of an internal tension in Boltzmann's thought. On the one hand, he wants to be a hard-nosed empiricist and deal only with the data given to us by experience. On the other hand, he wants to create a matrix to cover all possible situations, including those which have not been experienced; in fact, his matrices may easily include configurations - states of affairs - which have never and will never be actualized. While there is a standard empiricist defense for talk about such unrealized possibilities - this defense will argue that such discourse is still meaningful because criteria for verification exist - , these uninstantiated possible states of affairs also present a opportunity to sneak some metaphysical thought into physics. And Boltzmann does not like metaphysics.

John Blackmore sees a slightly different type of internal tension in Boltzmann's thought. Blackmore writes:

> As a physicist, one might naturally suppose that he considered what he called methodology of science more important than natural philosophy, but in fact, as the reader has no doubt already observed, judged in terms of what he actually taught, the opposite was the case. He increasingly taught the ideas of Schopenhauer, Kant, and Brentano on logical, epistemological and ontological topics. He was never quite sure what natural philosophy was, but his lectures became much closer to traditional philosophy than to methodology of science. In short, Boltzmann may have compartmentalized what we would call his intellectual outlook into an expanding series of more or less isolated cells starting with science and what he thought was methodology of science and gradually extending to and through physiology, biology, and Darwinism on the one side and various forms of epistemology, ontology, and "metaphysics" on the the other. It may be no wonder that he had such a hard time obtaining peace of mind or a coherent, inclusive philosophy or world view. One compartment of thought seemingly didn't know what the other compartments were doing.

The tension Blackmore sees between Boltzmann's science and Boltzmann's scientific methodology - between the way Boltzmann did physics and the way he talked about physics - is reflected in the way Boltzmann simultaneously endorses aspects of Schopenhauer's philosophy

while rejecting Schopenhauer's hypothesis about the rational foundation for the second law of thermodynamics.

10.4 August

10.4.1 What are Numbers? (2013-08-01 17:18)

Consider a common question: "how much is 7 + 5?" We can quibble about the phrasing: "how many are 7 + 5?" or "what is 7 + 5?" In any case, the answer is 12. But what is 12? We are asking about what a number is. What is a number? We use numbers all the time without considering what they are. We might well know what three apples are, or what three pencils are, but what is three? What is three, all by itself, when it's not three apples or three pencils?

This question arises, in part, because of the representative nature of language. Words, whether spoken or written, are commonly understood to be symbols which refer to things. Nouns refer to persons, places, objects, or ideas. Verbs refer to actions or states of being. Adjectives and adverbs refer to properties and qualities; prepositions refer to relationships. What about numerals? When I see the numeral '3' written on paper, it is a symbol, and I might well ask if it refers to something, and if so, what that something is.

If numerals refer to something, that something would be numbers. Numerals are physical symbols, consisting of ink on paper. What type of things would numbers be? Numbers would be non-physical things, i.e. metaphysical things, at least according to philosophers like Plato. Plato's view, adopted by a number of other significant philosophers over the centuries, is called dualism and realism. The word 'dualism' indicates that Plato is positing two levels of reality, a physical level and a metaphysical level. The word 'realism' indicates that Plato posits that mathematical statements are statements about an independently-existing state of affairs, that mathematical words refer to independently-existing things, and that mathematical propositions are true or false to the extent that the correspond, or do not correspond, to such an independently-existing state of affairs. Author Rui Vieira writes:

> What exactly are the objects of mathematics, and how do they relate to our knowledge of them? Since Plato (427 BC–347 BC) such questions have been central to the philosophy of mathematics. Plato realized that mathematics seems to involve perfect circles, triangles, and so on. But as Plato also noticed, there are no perfect circles or triangles to be found in the world, only imperfect approximations. Imagine a polygon [shape] with an ever-increasing number of equal sides. As the number of sides approaches infinity, the polygon will become a circle. Thus a perfect circle may be conceived of as a regular polygon with an infinite number of infinitesimally small sides. So no matter how accurate our or our computer's rendering of a circle may be, it will only be an imperfect approximation. Finite humans and their computers cannot create objects with infinite mathematical features, such as the infinite sides of our ideal circle. Plato concluded that since there are no perfect mathematical objects to be found in the world, the objects of mathematics – perfect circles, triangles, and indeed numbers themselves – must somehow exist as eternal abstract entities beyond space and time in some otherworldly Platonic heaven called the world of Forms (or Ideas). Plato's particular type of mathematical realism (ie, of attributing objective reality to mathematical objects), has been one of the most prevalent views of mathematics among both philosophers and mathematicians ever since.

Opposed to Plato's view, however, are several groups of philosophers, called variously 'formalists' and 'conventionalists' and including brilliant mathematicians like David Hilbert, Heinrich Eduard Heine, and Carl Johannes Thomae. These thinkers regarded numerals as non-referential. Phrased another way, they thought that numerals are numbers and numbers are numerals. A numeral, according to formalism, is a mark - ink on paper - which is related to other marks by means of a set of rules. Famously, the analogy to games arose. Consider a card game. The seven of spades, or the eight of clubs, does not refer to, or represent, anything. Its role in a card game is simply that if it is played, then certain other things must happen in the game.

According to the formalists, 7 + 5 = 12 because the rules of the game are such that when four symbols '7 + 5 =' are written, then the fifth symbol must be '12'. By contrast, the mathematical Platonist considers that 7 + 5 = 12 because when the object called '7' is added to the object called '5', another object, called '12', is formed.

The formalists - conventionalists are similar - thought that they had made a contribution to the progress of mathematics, because they had freed mathematicians from mysterious discussions of what type of ethereal thing a number might be. They felt that mathematicians should not have to be hindered by discussions of metaphysical objects.

The Platonists, on the other hand, saw that formalism contained certain weaknesses. If the formalist views were adopted as the foundations of mathematics, and those weaknesses emerged, the entire superstructure might collapse. A leading critic of formalism was Gottlob Frege, who wrote:

> The question now forces itself upon us: Is calling these signs numbers enough to ensure that they have the properties of the numbers proper which we have previously been accustomed to regard as quantitative ratios?

To be fair to David Hilbert, he and some of the formalists did not make a blanket ontological assertion that there are no metaphysical objects to which numerals refer. Hilbert was not so much saying that numbers as Platonic objects do not exist as much as he was saying whether or not numbers exist as Platonic objects, we will go ahead and do mathematics based only on numerals as otherwise meaningless symbols manipulated according to the rules of mathematics. The only relevant meaning had by numerals, for Hilbert, is the meaning given to them by their place in the rules. Whether or not they referred to Platonic numbers, and whether or not those Platonic numbers really existed, was for Hilbert not relevant.

There is a detectable difference between formalists and conventionalists. Formalists treat numerals as meaningless symbols to be arranged and manipulated according to a set of rules. Conventionalists treat mathematical propositions, and perhaps also meta-mathematical propositions, as true by agreement: they are the stipulations of the mathematical community. But for the purposes of discussion the ontological status of numbers, formalists and conventionalists are very similar, and we may conveniently lump them into the same category.

In any case, Frege sees formalism and the formalist project as a failure. He alleges that it cannot hold to its own program. While the formalist lays the foundations of the mathematics promising to treat numerals and all other operators as meaningless patterns of ink on paper, and to simply do no more than rearrange those symbols according to a set of rules, the formalist will in fact later attribute meaning to those symbols. Frege asserts that the formalist, having kept meaning and reference out of mathematics at the foundations, will later sneak little bits of meaning and reference into mathematics in its more advanced stages of development. Frege writes:

> This attempt at formal arithmetic must be considered a failure, since it cannot be pursued consistently. In the end numerical figures are used as signs after all.

Specifically, Frege noted the use of the operators 'greater than' and 'less than' and asked, in which way a numeral, as opposed to a number, could be greater or less than another numeral. True, the formalists can reply that numeral are assigned an arbitrary order, and that the operators simply reflect that order; but this line of thought is complicated by the fact that there is an infinity of numerals, in fact an uncountable infinity, and how would an order be assigned to them all? Likewise, the formalists wants to maintain that an expression like '3 ÷ 0' is meaningless, but if the formalists have already declared all symbols meaningless at the foundation, in which way is '3 ÷ 0' especially meaningless? Frege continues:

> We saw that terms and expressions were borrowed unconsciously and without explanation from arithmetic that has a content (e.g. 'larger than' and 'smaller than') and that their role in the calculating game remained obscure, although it seemed to be highly important. Formal arithmetic proved unable to define the irrational, for it had only a finite number of numerical figures at its disposal.

Frege stands with Plato and rejects the formalist interpretation of mathematics. The matter is not resolved. The formalist camp will charge Frege with violating Ockham's Razor. While Frege has succeeded in demonstrating that there are difficulties for formalism, he has not conclusively demonstrated the existence of Platonic numbers.

10.5 June

10.5.1 Language and Analyticity (2013-06-29 19:24)

Contemporary philosophy - or contemporary analytic philosophy, or late modern philosophy - has inherited from Kant, for better or for worse, a schema in which we divide propositions into those which are by their structure either analytic or synthetic, which are by their epistemology either *a priori* or *a posteriori*. Placing these dichotomies on a two-by-two grid, a system with four compartments results - a system which has seemed to some philosophers just a bit too conveniently tidy.

The question can be raised whether all propositions fit properly into one of these pigeon-holes, whether the dichotomies are exhaustive (is there a third option?), and whether the distinctions involved are absolutely binary opposites with no overlap or ambiguity between them.

One type of question which can be raised is about the nature of analytic propositions. The tautological nature of analytic propositions seems clear, especially when examples are taken from mathematics or abstract physics - the types of examples Kant gives in his *Kritik der Reinen Vernunft*. Yet more everyday examples from natural language can seem less clear. The question can be posed, whether Kant and others have selectively chosen their linguistic examples.

Philosophers, mathematicians, and logicians tend toward idealized versions of language when they look to investigate the structure of propositions. Gareth Evans writes:

> Frege was the first to formulate a systematic theory of meaning for a fragment of natural language; systematic in that it sought to provide an explanation of how the

significance of complex expressions, particularly sentences, depends upon the significance of their parts. Unsurprisingly, given Frege's larger purposes in investigating the foundations of mathematics, the fragment which concerned him was free of many of the characteristic features of natural language; in particular, indexical expressions like 'I', 'now', 'here', etc. However, Frege did offer suggestions as to how his apparatus could be brought to bear upon such devices.

Language interested Frege, initially and primarily, to the extent that it bore upon his investigations into logic and mathematics. Frege's ruminations upon language tended to restrict itself to a small and overly tidy subset of linguistic phenomena.

Let us consider a more typical proposition, and the sentence which represents it: *Lee Harvey Oswald is the man who shot JFK.* While this proposition does not contain any of the words which are normally considered indexicals, its analysis will nonetheless be conducted with a view to the time in which such analysis in executed.

In the year 1900, neither of the men who are referents of terms in the proposition had been born - although there may have been, at that time, a man whose initials were JFK, and there might conceivably even have been a man named Lee Harvey Oswald. Yet in conducting an analysis, we know that whoever generated the proposition meant *this* JFK and not *that* JFK, and meant *this* Oswald, and not *that* Oswald. A whole host of problems arise with such natural language sentences, sentences which are quite messier than uncluttered sentences about "bodies having extension" or "7 + 5 = 12" and so forth. Questions arise about ostensiveness, about meaning, about proper nouns, about referents which do not exist, and about synonymy.

Although some philosophers have been hastily dismissive toward Frege's symbol of assertion in his system, writing that assertion is a merely psychological phenomenon, one might yet acknowledge that Frege, however misguided his assertion operator might have been, was responded perceptively to the complexities which natural language offers.

Our proposition about JFK and Oswald will seem different if we analyze it in 1962, or in 1964. By a much later time - let's analyze it in the year 2013 - it will be very much like what Kant calls an analytic sentence. Considered from the standpoint of the knowing subject, many knowing subjects know about Oswald only that he shot JFK, and nothing else. For such individuals, our proposition will seem almost like the quasi-mystical *a = a* of the post-Kantian German idealists.

Simply put: for many natural language sentences, the question of whether they are analytic or synthetic seems to be a temporal question and a psychological question. Its analysis may be different if such analysis is carried out before or after specific events. Its analysis may depend on the epistemological state of the analyzer - whether he knows certain facts.

The murkiness resulting from the analysis, or attempted analysis, of natural language sentences has caused some to doubt the framework of analytic / synthetic and *a priori* / *a posteriori*. Willard Van Orman Quine writes:

> I am not satisfied that a clear general distinction has yet been drawn between analytic and synthetic. I am even more in the dark on the Kantian distinction between analytic and apriori. This much, nevertheless, I can say: *If* the statements of the usual higher mathematical logic are analytic, then so are such platonistic statements as 'There are classes', 'There are numbers'.

In Quine's book *Word and Object*, his linguistic example begins with a word which has a fully established place in language; the task of the linguist is to discover that word's use and meaning. An alternative example might begin with the coining of a word: astronauts return from a

distant planet, bringing a sample of an unknown substance. They hand it to a scientist in a laboratory, whose task is to analyze the substance. As the scientist takes notes on the sample, he has need to name it, for the mere purpose of writing his observations.

The scientist begins by naming the sample: he calls it the 'ABCXYZ sample' and uses this term consistently in his laboratory journals. We might ask the question: which sentences using the name 'ABCXYZ' are analytic, and which are synthetic?

At first, a small handful of simple sentences, mainly observations recording sense-data, will be analytic: "the ABCXYZ sample is solid at room temperature" or "the ABCXYZ sample has a density of so-and-so many grams per cubic centimeter." As the scientist conducts his research, synthetic sentences will emerge as new and not-directly-perceptible information emerges: "the ABCXYZ substance is composed mainly of iron and silicon" or "the melting point of the ABCXYZ sample is so-and-so many degrees Fahrenheit."

As data about ABCXYZ becomes more clear, it is printed in reference books, and eventually in textbooks. It is taught to undergraduate students and later even to high school students. Eventually, a generation of students arises, a generation which has never seen an ABCXYZ sample, or even a photograph of a sample, and doesn't know the heroic tale of astronauts who brought it back from a distant planet. For this later generation, ABCXYZ has always been found in all reference books and textbooks. For this later generation, the proposition that *ABCXYZ is composed mainly of iron and silicon* may be analytic; indeed, it may be the only thing that this generation knows about ABCXYZ.

Quine discusses a similar example:

> Suppose a scientist introduces a new term, for a certain substance or force. He introduces it by an act either of legislative definition or of legislative postulation. Progressing, he evolves hypotheses regarding further traits of the named substance or force. Suppose now that some such eventual hypothesis, well attested, identifies this substance or force with one named by a complex term built up of other portions of his scientific vocabulary. We all know that this new identity will figure in the ensuing developments quite on a par with the identity which first came of the act of legislative definition, if any, or on par with the law which first came of the act of legislative postulation. Revisions, in the course of further progress, can touch any of these affirmations equally.

If we accept Quine's objections, we have at least two options: we might take a moderately Quinian approach, and say that any decision about a proposition's analyticity is relative to time and circumstance. Along this route we might say that a proposition is a one point in time, for one analyzer, analytic, while at some other point in time, for some other analyzer, it is synthetic.

A radically Quinian - Quine himself apparently preferred the spelling 'Quinian' to 'Quinean' - position might abolish the distinction between analytic and synthetic altogether, declaring it illegitimate.

10.5.2 Newton and Descartes: Mathematics (2013-06-20 11:18)

Isaac Newton studied the works of most, if not all, of the significant mathematicians of his era and of earlier eras. When he began his studies at Cambridge in 1661, Rene Descartes had

been dead for just eleven years; the Cartesian influence in mathematics, philosophy, and the natural sciences would have been detectable to the young Newton. Newton read the works of Descartes, studying them carefully; as is often the case in the history of philosophy, the former philosopher will have a twofold effect on the latter: Newton learned and adopted much from Descartes, but would grow to firmly reject other aspects of Cartesian philosophy and mathematics.

Newton's first exposure to Descartes was probably not through a primary text - not through a book written by Descartes himself - but rather a secondary text, a book written by Frans van Schooten, a Dutchman who popularized Cartesian mathematics. One of Newton's most famous phrases - about standing "on the shoulders of giants" - was written in reference to Descartes. Carl Boyer writes:

> Early in his first year, however, he bought and studied a copy of Euclid, and shortly thereafter he read Oughtred's *Clavis*, the Schooten *Geometria a Renato Des Cartes*, Kepler's *Optics*, the works of Viete, and, perhaps most important of all, Wallis' *Arithmetica infinitorum*. Moreover, to this training we must add the lectures that Barrow gave as Lucasian professor, which Newton attended, after 1663. He also became acquainted with the work of Galileo, Fermat, Huygens, and others. It is no wonder that Newton later wrote to Hooke, "If I have seen farther than Descartes, it is because I have stood on the shoulders of giants."

Although Descartes earned lasting fame by securing a central role for algebra, not only in mathematics, but also in "natural philosophy" as the natural sciences and empirical observational sciences were then called, he had not yet progressed to the understanding that an algebraic equation and its curve plotted on a plane were equivalent, i.e., that having either of them amounted to having both, and that given either of them, the other was producible therefrom. Niccolo Guicciardini writes:

> The seminal text in Newton's mathematical formation is a highly abstract essay: Descartes' *Geometrie*. He borrowed and annotated the second Latin edition (1659–1661) by Frans van Schooten. Here Descartes had proposed a novel method for the solution — he claimed in the opening sentence — of all the problems of geometry. It was on this text that Newton concentrated his attention. Descartes taught how geometrical problems could be expressed in terms of algebraic equations (this process was termed the resolution or analysis of the problem). He maintained that finding the equation and determining its roots, either by finite formulas or approximations, is not the solution of the problem. It was not a surprise for the contemporaries of Descartes and Newton to read that in order to reach the solution, one had to geometrically construct the required geometrical object. A geometrical problem called for a geometrical construction (a composition or synthesis), not an algebraic result. Traditionally, such constructions were carried out by means of intersecting curves. Thus, Descartes provided prescriptions to construct segments that geometrically represent the roots and are therefore the solution of the problem.

Modern readers will be aware that the Newtonian (and Leibnizian!) calculus enabled mathematicians to think beyond the limits of Cartesian algebra. Descartes was forced to use trial-and-error ('heuristic') methods, making at first only approximations, and then refining them.

By Newton's day the heuristic method proposed by Descartes was labeled common analysis. It was contrasted with a more powerful new analysis, which tackled problems about tangents and curvature of curves and about the determination of areas and volumes that cannot be reached by the finitist means envisaged by Descartes. Common analysis proceeds by "finite" equations (algebraic equations, we would say) in which the symbols are combined by a finite number of elementary operations. The new analysis instead goes beyond these limitations because it makes use of the infinite and infinitesimal.

As soon as Newton began digesting Cartesian geometry, he began to ponder that algebraic equations might not only yield a curve, but rather also yield information about the curve. It is now commonplace for students in calculus to use the equation to determine 'local minima' and 'local maxima' using Newton's methods.

Newton's early notes on Descartes' *Geometrie* reveal how quick he was in mastering algebra applied to geometry. In 1665 he began to think about how the equation could reveal properties of the curve associated to it via a coordinate system.

The need for information about these curves was both theoretical and practical. Drawing the curves with accuracy, and understanding how to derive information about those curves from their corresponding algebraic equations was simultaneously important both for concrete tasks like lens-grinding and for philosophical tasks in exploring the foundations of mathematics and physics. The reader will recall Newton's interest in telescopes.

Descartes had devised several mechanisms for generating curves. In *De Organica Conicarum Sectionum in Plano Descriptione Tractatus* (1646), which Newton read in *Exercitationum Mathematicarum* (1657), van Schooten had presented several mechanisms for generating conic sections. This research field was connected with practical applications, for instance, lens grinding and sundial design, but it was also sanctioned by classical tradition and motivated the highly abstract needs underlined by Descartes. Newton was able to devise a mechanism for generating conics and to extend it to higher-order curves.

Cartesian methods were capable of managing only some types of curves, not all types of curves. Newton's work in physics required that he have more powerful mathematics so that he could work with more types of curves.

In 1665, Newton deployed organic descriptions in order to determine tangents to mechanical lines, that is, plane curves such as the spiral, the cycloid, and the quadratrix that Descartes had banned from his *Geometrie*. The study of mechanical lines, curves that do not have an algebraic defining equation, was indeed a new, important research field. How to deal with them was unclear. Newton was able to determine the tangent to any curve generated by some tracing mechanism. He decomposed the motion of the tracing point P, which generates the curve, into two components and applied the parallelogram law to the instantaneous component velocities of P.

Descartes had simply been forced to omit the treatment of certain types of curves. The advent of Leibnizian (and Newtonian!) calculus has had a ubiquitous impact on the natural sciences. Carl Boyer writes:

> Where Descartes' geometry had once excluded all nonalgebraic curves, the calculus
> of Newton and Leibniz showed how essential is the role of these in their new analysis.

While the Cartesian approach and its ability to map algebraic equations on a plane still seemed new, Newton was already transcending it, and creating non-algebraic approaches. Niccolo Guicciardini writes:

> For instance, the point of intersection of two moving curves will generate a new
> curve whose tangent Newton was able to determine. Such a method for determining
> tangents without calculation pleased Newton as much as did his new techniques for
> the organic description of conics. This was an approach to the study of curves —
> alternative to the Cartesian algebraic — that Barrow had promoted and that in the
> 1670s Newton began to couple with ideas in projective geometry. Already in 1665
> the master in the common and new algebraic analyses was experimenting with non
> algebraic approaches to geometrical problems.

Leibniz and Newton broke through the boundaries of Cartesian algebra. Their calculus would fuel the industrial revolution, as more sophisticate steam engines and other devices would be designed with the aid of this newer, higher mathematics. But we might speculate that neither man had such pedestrian interests.

> Using Leibnizian jargon, we can say that while differentiation of algebraic functions
> (accepted by Descartes) leads to algebraic functions, integration can lead to new
> transcendental functions. Newton referred to what are now called transcendental
> functions as quantities "which cannot be determined and expressed by any geomet-
> rical technique, such as the areas and lengths of curves." Infinite power series — in
> some cases fractional power series — were the tool that young Newton deployed in
> order to deal with these mechanical (transcendental) curves.

Newton's understanding of mathematics was colored by his interests in mystical, theological, and even occult understandings of science. He was convinced that ancient scientists had made marvelous discoveries, and hidden these discoveries in allegories and other cryptic writings. This famed "other side" of Newton enabled him to venture predictions on the exact date of the end of the world, which he envisioned in a fairly orthodox version of a triumphalist second advent - although in other matters, he was anything but orthodox, as his studies of Hebrew and Greek grammar led him to reject Cambridge's Anglican understanding of the Trinity. (Newton's prediction for the end of the word was in the year 2060.) Newton's attempt to reconstruct what he held to be the lost knowledge of the ancients would lead him, he thought, to nearly miraculous or supernatural results.

> *Lucasian Lectures on Algebra* stemmed from a project on which Newton had em-
> barked since the fall of 1669, thanks to the enthusiasm of John Collins: the revision
> of Mercator's Latin translation of Gerard Kinckhuysen's Dutch textbook on algebra.
> Newton's involvement in this enterprise was an occasion to rethink the status of
> common analysis. He began experimenting with what he understood as ancient
> analysis, a geometrical method of analysis or resolution that, in his opinion, the an-
> cients had kept hidden. In his *Lucasian Lectures on Algebra*, which he deposited in
> the University Library of Cambridge in 1684 and from which William Whiston edited

the *Arithmetica Universalis* (1707), Newton extended Cartesian common analysis and arrived at new results in this field. But even in this eminently Cartesian text one can find traces of his fascination with the method of discovery of the ancients. The ancients, rather than using algebraic tools, were supposed to have a geometrical analysis that Newton wished to restore. This was a program shared by many in the seventeenth century. He also made it clear that synthesis, or composition, of geometrical problems had to be carried on — *contra* Descartes — in terms wholly independent of algebraic considerations. The fascination with ancient analysis and synthesis, a better substitute, he strongly opined, for Cartesian common analysis (algebra) and synthesis (the techniques on the construction of equations prescribed by Descartes), prompted Newton to read the seventh book of Pappus's *Collectio* (composed in the fourth Century A.D. and printed alongside a Latin translation in 1588). He became convinced that the lost books of Euclid's *Porisms*, described incompletely in Pappus's synopsis, were the heart of the concealed ancient, analytical but entirely geometrical method of discovery.

While Newton's occult and mystical tendencies may have set him apart from some of his fellow philosophers and mathematicians, they did so by means of degree, not by means of kind. Robert Boyle spent time studying Hebrew grammar; Locke wrote commentaries on Pauline epistles, treating them straightforwardly as divine, inspired, and infallible. Like Newton, Descartes had looked to ancient authors for hints about geometry and algebra.

> It seems that Newton did not know that Descartes expressed similar views in the "Responsio ad Secundas Obiectiones" in *Meditationes de Prima Philosophia* (1641).

While Newton saw mathematics as the structuring principle of the universe, he did not follow Descartes in formulating a rationalistic natural philosophy (in the sense of an *a priori* natural philosophy). Newton retained an empirical side. A central issue in Newton's thought is the effort to harmonize the *a priori* with knowledge gained from experience. We can see this struggle in one of Newton's most famous phrases, when he wrote that

> propositions collected from observation of phenomena should be viewed as accurate or very nearly true until contradicted by other phenomena.

The phrase "very nearly true" is thought-provoking. In a common notion of truth as a binary opposition to falsehood, a proposition is either true or it is not. To be "very nearly true" is to be false. Yet Newton apparently thought that he was expressing something by writing this way. Perhaps this is the *a posteriori* at war with the *a priori* in Newton's mind. Frederick Copleston writes:

> That Newton attributed to mathematics an indispensable role in natural philosophy is indicated by the very title of his great work, the *Mathematical Principles of Natural Philosophy*. The great instrument in the demonstrations of natural philosophy is mathematics. And this may suggest that for Newton mathematical physics, proceeding in a purely deductive manner, gives us the key to reality, and that he stands closer to Galileo and Descartes than to English scientists such as Gilbert, Harvey and Boyle. This, however, would be a misconception. It is doubtless right to stress the importance which Newton attached to Mathematics; but one must also emphasize

the empiricist aspect of his thought. Galileo and Descartes believed that the structure of the cosmos is mathematical in the sense that by the use of the mathematical method we can discover its secrets. But Newton was unwilling to make any such presupposition.

Newton morphed from being trans-Cartesian to being anti-Cartesian. He grew to see Cartesian notions as undermining his theological views. Scholars have debated whether Descartes, in his personal life, was a faithful and engaged Roman Catholic, or whether he was more nearly a deist who merely paid lip-service to Roman Catholicism. There is some plausible evidence on both sides. But in his philosophical writings, God is present in a necessary but impersonal way; whatever Descartes may have privately believed, his philosophy is nearer deism than orthodox Roman Catholicism. Newton, by contrast, posited a mystical or spiritualist type of natural philosophy, in which he sought interaction at the intersection between theological questions and his questions in mathematics, physics, and philosophy. Newton rejected Anglicanism; this rejection seems to have been sincerely motivated, because it created otherwise unnecessary obstacles to his work at Cambridge. Instead of Anglicanism, he developed his own belief system as he wrote commentaries on the books of the Old Testament and of the New Testament. Niccolo Guicciardini writes:

> Newton intertwined this myth of the ancient geometers with his growing anti-Cartesianism. In the 1670s he elaborated a profoundly anti-Cartesian position, motivated also by theological reasons. He began looking to the ancient past in search for a philosophy that would have been closer to divine revelation. The moderns, he was convinced, were defending a corrupt philosophy, especially those who were under Descartes' spell. Newton's opposition to Cartesian mathematics was strengthened by his dislike for Cartesian philosophy. Descartes in the *Geometrie* had proposed algebra as a tool that could supersede the means at the disposal of Euclid and Apollonius. Newton worked on Pappus's *Collectio* in order to prove that Descartes was wrong. He claimed that the geometrical analysis of the ancients was superior to the algebraic of the moderns in terms of elegance and simplicity. In this context, Newton developed many results in projective geometry and concerning the organic description of curves. His great success, achieved in a treatise entitled "Solutio Problematis Veterum de Loco Solido" (late 1670s) on the "restoration of the solid loci of the ancients," was the solution by purely geometrical means of the Pappus four-lines locus. This result, much more than the new analysis of infinite series and fluxions, pleased Newton because it was in line with his philosophical agenda.

Newton was quite clearly opposed to any mechanistic view of the universe, deistic or atheistic, which saw the universe as running purely on physical principles. To which extent Descartes embraced such a view remains somewhat disputable; while Julien Offray de La Mettrie's book *Man a Machine* probably goes further in that direction than Descartes himself would have gone, it is nonetheless plausible to see that Le Mettrie took his impetus from Descartes. In any case, Newton posited the existence of a Deity who interacts with the universe in tangible ways. Frederick Copleston writes:

> He carried on the work which have been developed by men such as Galileo and Descartes, and by giving to the mechanical interpretation of the material cosmos a comprehensive scientific foundation he exercised a vast influence on succeeding generations. It is not necessary to accept the views of those who rejected Newton's

theological ideas and who regarded the world as a self-sustaining mechanism in order to recognize his importance.

The writings of the Dutchman Christiaan Huygens interested Newton: Huygens was applying the latest developments in mathematics in the construction of clocks and various astronomical measuring devices. The Dutchman's mixture of interests was similar to the collection of topics on which Newton was working. Niccolo Guicciardini continues:

> One should not forget another factor that determined Newton's option for geometry in the 1670s: the encounter with Huygens's *Horologium Oscillatorium*. In his masterpiece, printed in 1673, Huygens had employed proportion theory and *ad absurdum* limit arguments (method of exhaustion) and had spurned as far as possible the use of equations and infinitesimals (in his private papers he did employ symbolic infinitesimalist tools, but he avoided them in print). Huygens offered an example to Newton of how modern cutting-edge mathematization of natural philosophy could be presented in a form consonant with ancient exemplars. The Lucasian Professor immediately acknowledged the importance of Huygens's work, and one might surmise that his methodological turn of the 1670s — which in part led him to cool his relationship with Collins and avoid print publication of his youthful algebraic researches — was related not only to a reaction against Cartesianism, but also to an attraction toward Huygens's mathematical style.

While working in solidly *a priori* fields like pure mathematics, Newton was nonetheless drawn to the empirical observational sciences like astronomy. Thus he grew disenchanted with much about Cartesianism (if he had ever been enchanted). Descartes, by refining his *a priori* rules of thought, sought to arrive at an *a priori* natural philosophy. Carl Boyer writes:

> In this he hoped, through systematic doubt, to reach clear and distinct ideas from which it would then be possible to deduce innumerably many valid conclusions. This approach to science led him to assume that everything was explainable in terms of matter (or extension) and motion. The entire universe, he postulated, was made up of matter in ceaseless motion in vortices, and all phenomena were to be explained mechanically in terms of forces exerted by contiguous matter. Cartesian science enjoyed a great popularity for almost a century, but it then necessarily gave way to the mathematical reasoning of Newton. Ironically, it was in large part the mathematics of Descartes that later made possible the defeat of Cartesian science.

The similarities and contrasts between Newton and Descartes did not arise in a vacuum. We have already seen the roles of Huygens and Hooke, Boyle and Galileo, Leibniz and others in the development of the era's thought. A group of thinkers categorized under the heading of the "Cambridge Platonists" played a role in transmitting a Cartesian notion about the nature of space into Newton's thought. Frederick Copleston writes:

> For example, in his *Enchiridion metaphysicum* Henry More argued that the Cartesian geometrical interpretation of nature leads us to the idea of absolute space, indestructable, infinite and eternal. These attributes cannot, however, be the attributes of material things. Absolute space must be, therefore, an intelligible reality which is a kind of shadow or symbol of the divine presence and immensity. More was primarily concerned with arguing that the mathematical interpretation of nature, which

separated the corporeal from the spiritual, ought logically to lead to the linking of the one to the other; in other words, he was concerned with developing an *argumentum ad hominem* against Descartes. But his argument appears to have exercised an influence on the Newtonian conception of space.

Thus one of the most distinctively Newtonian doctrines - Newton's peculiar conceptualization of absolute space as independently existing - may have Cartesian roots.

Although it is probable that no philosopher is entirely consistent or coherent, given that all philosophers are human, it may be argued that Newton presents more internal tensions within his thought than some other philosophers. To which extent those tensions can be resolved, and Newton saved from internal contradiction, is a task for wise scholars. Yet it takes only a little charity to see how Newton viewed mathematics and physics, not as a coldly mechanistic belief system of deists and atheists, but as the handiwork of a present and personal deity who inhabits his universe and whose designs have a teleology to them. Niccolo Guicciardini concludes:

> Newton encouraged his acolytes to pursue researches in ancient analysis and never missed the opportunity for praising those, such as Huygens, who resisted the prevailing taste for the symbolism of the moderns, the "bunglers in mathematics." When the polemic with Leibniz exploded, he could deploy his classicizing and anti-Cartesian theses against the German. Thus, Newton's last mathematical productions, publications, and (often anonymous) polemical pieces were driven by a philosophical agenda difficult to reconcile with his mathematical practice.

Perhaps the story - with its ambiguous interpretations - of Sweden's Queen Christina is a fitting symbol for the careers of Descartes and Newton. While Descartes could seem rather detached from the Roman Catholicism which professed, Christina converted, upon the death of Descartes, to that faith; Descartes was the only Roman Catholic with whom she'd spent significant amounts of time. Her engagement with that faith seems to have been more passion than that of Descartes; she surrendered her throne for it. Likewise, Newton may have engaged more actively with some aspects of Cartesian thought, while rejecting other aspects of it, than Descartes himself did.

10.6 May

10.6.1 Looking for Life (2013-05-03 10:51)

One tenant of orthodox Darwinism is that life emerged, spontaneously, from lifeless matter. Understanding the implications of this proposition is essential to understanding the plausibility of evolutionary hypotheses in general.

Stanley Miller and Harold Urey conducted experiments in 1952 to test the credibility of the "warm little pond" hypothesis, so named because Darwin wrote:

> But if (and oh what a big if) we could conceive in some warm little pond with all sorts of ammonia and phosphoric salts, light, heat, electricity etcetera present, that a protein compound was chemically formed, ready to undergo still more complex changes.

The Miller-Urey experiment, as it is commonly called, subjected mixtures of water, nitrogen and compounds like carbon dioxide, hydrogen sulfide, and sulfur dioxide to heating, cooling, and electrical sparks. Later versions of the experiment, conducted by other researchers as well as by Miller and Urey, varied the temperatures, times, and compounds. Eventually, if the Darwinian hypothesis is correct, at least one combination should yield life.

Since 1952, different variations on this experiment have been performed by different researchers. To date, no life has been created by this process. Among the different approaches are those which attempt to emulate conditions in the earth's seas, and those which try to replicate the variables found in warm ponds found in the vicinity of volcanic activity. As Armen Mulkidjanian writes,

> We attempted to reconstruct the "hatcheries" of the first cells by combining geochemical analysis with phylogenomic scrutiny of the inorganic ion requirements of universal components of modern cells.

Many of these attempts to create life have been presented as attempts to see whether amino acids, or other compounds popularly called "the building blocks of life," could have spontaneously arisen in conditions presumed to have existed on earth. Even Miller and Urey, by the time they published their results, had recast their experiment as a hunt for certain compounds, rather than the hunt for life itself; the quest was based on

> the idea that organic compounds that serve as the basis of life were formed when the earth had an atmosphere of methane, ammonia, water, and hydrogen instead of carbon dioxide, nitrogen, oxygen, and water

Having failed to grab headlines in newspapers - imagine "Scientist Creates Life in a Beaker!" - Miller and Urey had to content themselves with the comment that "this type of process would be a way of commercially producing amino acids." They might be forgiven for their overly enthusiastic quest to create life in a test-tube: Miller was, after all, only 23 years old at the time. In a 1959 write-up, he framed it thus:

> Since the demonstration by Pasteur that life does not arise spontaneously at the present time, the problem of the origin of life has been one of determining how the first forms of life arose, from which all the present species have evolved. This problem has received considerable attention in recent years, but there is disagreement on many points. We shall discuss the present status of the problem, mainly with respect to the early chemical history of, and the synthesis of organic compounds on, the primitive earth.

In the half-century, and more, since then, both the chemical content of the mixtures and the amount and type of energy input have been investigated, and variations of the experiment attempted. Researchers have used infrared, ultraviolet, and visible light; alpha particles, neutrons, and other forms of bombardments have been applied. The possible combinations of chemical elements, amounts and forms of energy, and the timings of different energy applications, mean that the number of possible experiments is infinite, or nearly so.

Although the names Miller and Urey were attached to this experiment, a researcher named MacNevin in Columbus had conducted similar experiments. A *New York Times* article, dated March 8, 1953, reports that

In Ohio State University laboratories Dr. Wollman M. MacNevin and his associates are re-creating the earth's conditions two billion years ago - long before there was life on this planet. "One purpose of the study," Dr. MacNevin explains, "is to answer this scientific question: Did extreme complexity of chemical compounds develop before life appeared, or was this a result of the life processes?"

Likewise, a researcher named Wilde published in the journal *Science* on July 10, 1953, another experiment which apparently predates Miller and Urey. Wilde writes, after sending an electrical current, in the form of an arc, through a mixture of water vapor and carbon dioxide, that

the action of radiation on these 2 gases is of special interest in relation to the basic photosynthetic process, and also carries implications with respect to the origin of living matter on earth.

Since Wilde, MacNevin, Miller, and Urey, papers have appeared at regular intervals, reporting similar results. The quest for "life in beaker" remains unsatisfied. What implications can we draw from what has been reported thus far?

Given that the number of experimental combinations to be explored is infinite, or nearly so, we will never arrive at the point at which we can empirically satisfy the desire to have tried every combination. To draw a conclusion, therefore, we will have to discern what constitutes a representative sample of the population. The population is every conceivable combination of elements and energy forms, including the variations in timing; other variables could be considered as well, e.g., pressure.

To have a representative sample of this population, we would need to divide the population into meaningful and significant categories, and draw samples from those categories. Recursively, each category would be organized into subcategories, etc., to ensure a broad range of samples. The question arises, would there be an infinite regression of subcategories within subcategories?

In this question, we encounter the larger question which inhabits all empirical inductive sciences. If a hypothesis is to be supported, or refuted, by empirical induction, and if there is an infinite or nearly-infinite population, at which point in the process of sampling do we consider that we have "enough" evidence to form a judgment?

Given that no mixture has been found which yields life upon absorbing certain types and amounts of energy, it might be argued that the Darwinian hypothesis has failed. But given that we have not yet tested all possible mixtures, it could be argued that the evolutionary schema has not been proved implausible. Neither argument is definitive until the problems of induction and sampling have been sufficiently clarified. This is the general problem of observational empirical sciences.

For the present, the question has been side-stepped, as scientists who are seeking to create life in a laboratory have learned to consistently present their work as merely the effort to determine whether or not certain complex organic compounds could have been produced in a lifeless environment. Despite more than sixty years of persistent effort, they have failed to demonstrate that a mixture of lifeless compounds can, upon the application of energy, generate life.

At the present stage, the only clear conclusion is that there is no evidence to persuade one to believe that life spontaneously arose from nonliving matter.

10.7 April

10.7.1 Not Quite Religion (2013-04-04 08:16)

What is religion? To answer that question, one will simultaneously answer the question what is not religion? By asking both questions, the possibility is raised that some things which are not religions might be called religion - might be mistakenly called religion, or mistaken for religion. Full-blown religions, like Judaism and Christianity, fall into that category, while other things, like magic, might more accurately be called part of a pre-religious phase.

Georg Wilhelm Friedrich Hegel, in his *Lectures on the Philosophy of Religion*, expresses a similar approach to religions and to those belief systems which are almost, but not quite, religions:

> We shall discuss now the first stage of nature religion, the religion of magic, which we may deem unworthy of the name "religion." In order to grasp this standpoint of religion we must forget all the representations and thought that we are perhaps so familiar with and that themselves belong to the most superficial habits of our culture. We must consider human beings all by themselves upon the earth, the tent of the heavens above them and nature round about them, and so, to begin with, without any reflective thought, altogether devoid of consciousness of anything universal.

Hegel points out that we need to undo our current cultural worldview, which is already informed by religion, in order to understand a pre-religious worldview. The more ancient civilizations embraced a worldview in which, in place of religion, one finds magic and myth. Magic, for these anthropological purposes, may be defined as an attempt to manipulate physical reality. Magic is the attempt to bring about certain states of affairs. One might use magic, e.g., to bring about fertile farming conditions or to bring about a military victory. Magic is thus closely related to, or identical with, what historians call "fertility religions" - but we note, with Hegel, that "fertility religions" are not religions, but merely so called.

Myth is the creation of narratives, narratives designed to explain. Myth can be true or false. In a magical, pre-religious society, myth is expanded and brought forth to do the tasks which religion will do at a later stage.

When a civilization leaves the stage of myth and magic, and progresses to religion, it abandons myth, because it acknowledges, with Kant, that sober reason admits that some questions are beyond it; human reason cannot answer all questions, and so mature religion is content to admit some mysteries. The immature stage of mythology does not want to admit that some questions are beyond the ability of human reason to answer, and so myths are fabricated, providing answers to all questions, leaving no question unanswered, and leaving no room for mystery.

Likewise, mature societies leave behind the phase of magic. Magic is the attempt to manipulate, and is not content to admit that humans cannot control every event in the natural universe. Progression from magic to religion is the progression from acting on the desire to place all variables under human control to acting on the recognition that humans must accept that there are natural limits to their powers.

Having shed magic and myth, the truly religious phase centers upon communication with the deity. The modern religious person, then, has a different approach to the realm of the spirit than did the person who belonged to a pre-religious civilization. Hegel writes:

It is difficult to get the sense of an alien religion from within. To put oneself in the place of a dog requires the sensibilities of a dog. We are cognizant of the nature of such living objects, but we cannot possibly known what it would mean to transpose ourselves into their place, so that we could sense their determinate limits; for that would mean filling the totality of one's subjectivity wholly with these characteristics. They remain always object of our thought, not of our subjectivity, of our feeling; we can grasp such religions, but we cannot get the sense of them from within. We can grasp the Greek divinities, but we cannot get the inner sense of genuine adoration toward a divine image of that kind.

It is on this point that it is most difficult for the modern reader to enter into the psychology of early Mesopotamian cultures; into Mayas, Incas, and Aztecs; into Druids, Celts, Gauls, or Hittites; and into the earliest stages of Hindu, Greek, Roman, or Norse mythologies. It is telling that all of these engaged in the practice of human sacrifice. The drive for magic - the ability to manipulate the weather or to rig military victories - was so intense that human sacrifice seemed either necessary or reasonable. The modern reader may find it easy to mock those primitive cultures, but should remember that the immanent threat of death and the lack of accurate knowledge about the Infinite and the Transcendental are powerful forces; the modern reader may become more sympathetic when considering those forces. The modern reader might also imagine that certain aspects of modern civilization may seem equally barbaric when viewed by someone who is utterly outside that civilization.

Hegel's *Lectures on the Philosophy of Religion* pose certain textual problems, being as they are, a patchwork quilt made of Hegel's own notes from which he lectured, as well as notes taken by students during those lectures, along with fragments of text written out by Hegel - all edited together into prose by scholars after Hegel's death. To compound the problem, the lectures, first given in 1821, were repeated over the years, in 1824, in 1827, and in 1831. Over those years, Hegel adjusted both the content and the form of his presentation, and editing all of this material into one stream of prose gives a simplified vision of Hegel's thought on the matter.

Hegel began by noting that what one considers in this most primitive stage of culture, the culture of magic and myth, is not quite a religion, but rather something pre-religious. Yet he confusingly uses the word 'religion' in his discussion of it.

> In the primal, immediate religion, here in this immediacy, humanity still knows no higher power than itself. There is, to be sure, a power over contingent life, over its purposes and interests, but this is still no essential power, as a universal in and for itself, but falls within the compass of humanity itself. The spiritual subsists in a singular, immediate mode.

The deities of early mythologies, and the power of magic, are then actually projections of the human mind. With Xenophanes, we note the suspiciously anthropomorphic features of these idols. Magic and myth are human ambition writ large. But even the formalization of these concepts into personified anthropomorphic deities is already a step beyond the most primitive level of myth and magic:

> But the first nature religion is much more remote from the totality of our conscious-ness than this. Human beings in that situation still exist in a state of immediate desire, force, and action, behaving in accord with their immediate will. They do not yet pose any theoretical questions such as: "Where does this come from?" "Who

made it?" and "Must it have a cause?" This inward divorce of objects into a contingent and an essential aspect, into a causative aspect and the aspect of something merely posited, or of an effect, does not yet occur for them. Similarly, even the will in them is not yet theoretical; there is not yet this rupture in them, nor any inhibition toward themselves. The theoretical element in willing is what we call the universal, right, duty - i.e., laws, firm specifications, limits for the subjective will. These are thoughts, universal forms that belong to the thought of freedom. They are distinct from subjective arbitrariness, desire, and inclination; all of the latter are restrained and controlled by the universal, or are conformed to this universal; the natural willing of desire is transformed into willing and acting in accord with such universal viewpoints.

Although his topic is the philosophy of religion, Hegel here thinks alongside various political philosophers who have imagined that humanity once existed in some 'state of nature' out of which society and state emerged. Here is constructing a religious analogue to that political development. But both are dubious: politically and religiously, we must ask what evidence exists that humanity actually did live in that 'state of nature' and why we might not suppose that humanity simply lived in a less developed version of its current self. Those who posit a 'state of nature' are speaking of a difference in kind; we ask whether it might not have simply been a difference in degree.

But here human beings are still undivided with regard to willing; desire is the governing factor here. Similarly in their representations, in the imagination of these human beings, they carry on in this undivided state, this benighted condition, a stupor in the theoretical domain and a wildness of will. This is just spirit's primitive and wild reliance upon itself. There is indeed a fear present here, a consciousness of negation, though not yet the fear of the Lord; it is instead the fear of contingency, of the forces of nature, which display themselves as mighty powers over against humanity. The fear of the Lord, which is the beginning of wisdom, is fear before a spiritually self-sufficient being opposed to arbitrariness. This fear first enters human experience when in one's singularity one knows oneself to be powerless, when one's singularity is inwardly shaken. The beginning of wisdom is when singular privateness and subjectivity sense itself as not being what is true, and, in the consciousness of its singularization and impotence, by way of negation, it passes over to knowledge, to universal being-in-and-for-self.

Hegel sees this pre-religious phase as the un-reflective and un-self-conscious activity of the will and of fear. He notes a transition from a fear of arbitrary contingent concrete fears to the the fear of the Lord. The themes of will and fear certainly continue from the pre-religious to the religious phase, but they appear in the latter in very different guise than in the former. One may also posit a post-religious phase, in which the primary concept is relationship with the deity, and not mechanism. In any case, when doing the philosophy of religion, it is a good starting point to sort out those things which actually are religion from those things which may seem like, or be called, religion without actually being so.

10.8 March

10.8.1 The Speed of Gravity (2013-03-27 12:03)

Posing a question about the speed of gravity yields an opportunity to examine questions about the philosophy of science, especially those which touch upon verification, experimental design, and sources of experimental error. Naively, we might say that Newton sees gravitation's effects as instantaneous even at a distance, and that Einstein sees gravity as traveling at a finite, but not necessarily fixed, speed.

In terms of experiment and observation, astronomers have gathered data from phenomena like quasars and pulsars, and concluded that gravity is not instantaneous. Yet its speed is calculated by many of these astronomers as being significantly faster than the speed of light, a conclusion which, if accepted, would challenge many propositions taken as axiomatic by physicists.

While Newton took gravity to take effect instantaneously, he also considered any instantaneous effect at a distance as problematic. Many Newtonian thinkers after him solved the problem, or side-stepped it, by saying that the speed of gravity was so fast that it should simply be calculated as instantaneous.

We can conceptualize the question in a thought-experiment:

> Let us imagine a universe devoid of matter except for three simple objects - e.g., three solid metal spheres, like ball bearings. These three are in motion, traveling in a plane. Although we are imagining a standard four-dimensional universe, i.e., the three Euclidean dimensions and time, the objects are moving only on a plane. They are in inertial states of motion as follows: two of them are on parallel paths, such that their routes would never intersect, save for the forces of gravity, and they will never leave the plane; the third is moving on a path such that it will collide with one of the other two. At any point in time prior to the collision, we can nicely predict their routes and project them into the future. The forces and their mathematics are well-known, and we have eliminated complications like friction or gravitational fields from other objects. The only quantities to be considered would be the masses of the objects, their speed and direction (i.e., velocities), and the forces of gravity between them. The two objects on parallel paths will presumably be drawn toward each other by gravity so that their paths would cease to be parallel. Let us stipulate that they will not collide until after the third object first collides with one of them, if ever. Up to this point, the situation is unremarkable, not controversial, and easily predictable by Newtonian means. At the point in time at which the third object collides with one of the first two, the two objects in the collision will change velocity. Let us stipulate that the collision does not destroy the objects; imagine billiard balls colliding on the table. Given that the collision and the change in velocity are either instantaneous or nearly so, we will regard this as a single point in time. The force of gravity upon the third object, the one not in the collision, will change also at this point in time. Given the change in the force of gravity upon that object, and the stipulated absence of moderating factors like friction, the third object's path will change as the force of gravity upon it changes. Our question is then this: is the point in time at which the third object's path changes different than the point in time at which the collision took place? If yes, then gravity is not instantaneous, and travels at a speed. If no, the gravity is instantaneous.

Philosophers are well aware that attempts to answer questions, whether successful or not, usually yield more questions and meta-questions. The present case is no exception. Is our thought experiment well-formed? Does it have any bearing on physical reality? It certainly fails to yield an answer to the question of whether gravity is instantaneous.

Any attempt to translate this thought experiment into observational natural science will be fraught with complications. Rather than working with a stipulated idealized universe, we would have to work with the real one. Attempting to observe and measure, e.g., tiny variations among asteroids, which travel through space with inertial motion and occasionally collide with one another, would be affected by numerous other gravitational fields in the area - fields emanating from other objects. Calculating these would be impossible or nearly so. The small changes in path and the precision needed to measure such small bits of time would exceed our technological grasp.

If there is any value attributable to this thought experiment, it might be this: that it presents the question in an isolated form. This is the procedure normally adopted by physics textbooks when presenting less controversial matter.

The question about the speed of gravity touches upon questions about the mechanism of gravity, and about the cause or source of gravity. Newton famously violated his own *dictum* that he would form no hypotheses. Commenting upon this benign self-contradiction, Professor Lawrence Sklar writes:

> His hypotheses about gravity, for example, often have a very Cartesian flavor to them, as they postulate "ethers" that fill the universe with various fluid properties of pressure and resistance, and whose relation to matter (perhaps of lower pressure where matter is present, resulting in a "push" that moves matter toward matter) might, possibly, explain the law-like behavior of gravitational attraction. Such "mechanisms" might also remove from gravity the taint of action at a distance. It is worth noting here that the elements that later function to suggest the replacement of "action at a distance" theories by theories that propose an ontology of "fields" intermediate between the interacting objects, that is to say the time lapse in inter-particle actions and the violation in conservation of energy that results if one is not very careful in framing an "action at a distance" theory, play no role in the controversies embroiling Cartesians and Newtonians in Newton's time.

Given that there are still unanswered questions and significant controversies about gravity, Newton's suggestions, even if some of them are ultimately rejected, are still worth examination. Sklar continues:

> Some of Newton's hypotheses remain only curiosities in the history of science. Others, such as his particle theory of light, remain, if not really correct, important contributions to the development of later science. Still others, such as his hypothesis expressed in the "Queries" to the *Opticks* that there might be other forces along with that of gravity by which matter influences matter, and that these other forces might account for such things as the structure and behavior of materials, are prophetic insights into what became large components of the future growth of scientific understanding.

In post-Newtonian physics, questions about the speed of gravity take a different form. They might be posed as questions about the speed at which spacetime can change shape, i.e., curve or become curved. Or they might be asked about the speed of gravity waves, instead of the speed of gravity.

10.9 January

10.9.1 What is Life? (2013-01-22 20:02)

Aside from being a song by George Harrison, the question "what is life?" gives the philosopher occasion to engage in one of his favorite activities: working toward a precise definition for a word.

We use the noun 'life' and the verb 'live' (lives, lived, living) in ordinary circumstances quite often. Yet it is perhaps not easy to articulate exactly what life is.

One might observe that life is contingent: different forms of life are contingent upon different things. Various forms of physical life depend on various types of matter and energy: oxygen, hydrogen, carbon, heat, light.

We might inquire about non-physical forms of life. One hears the phrase 'life of the mind' - is that a metaphor, or a literal reference? Likewise with 'social life'?

If we restrict ourselves to biological life, we might compare a dead organism to a living one. One of the differences is motion: dead things move when moved; living things move spontaneously. The motion of a non-living thing is *ab alio*; the motion of a living thing can be *ab se*.

Life is not measurable in the manner in which we measure matter or energy: a plant or animal does not lose any mass or weight when it dies. Viewing a single-celled organism through a microscope, we cannot see its life disappear when it dies: all the various parts of it remain, and remain in the spatial relation to one another.

What we can see is motion, and death is often inferred when motion stops - correctly inferred or incorrectly inferred. Motion is an indirect, or mediated, sign of life. Motion can fool us; we may think something is alive because it moves, and we might be wrong in so thinking. We may think something is dead because it does not move, and just as easily be right or wrong.

Life, then, might be something metaphysical. If it is not matter or energy or a combination thereof, and if it is not directly detectable by our five senses, it could be a metaphysical category. We note that it is not even detectable in principle by our five senses.

Whether or not one wishes to commit philosophically to a robust ontology, including a metaphysical entity or substance called 'life', one can see the reasons which would persuade a philosopher to make that commitment. We might speak of life "going" when a person dies. What is it that went? Whither did it go?

Although some texts include the phrase "self-sustaining" in attempted definitions of 'life', this could be true only in a rather limited sense. Given that life is contingent, it is sustained by the ongoing presence of certain types of energy and matter in its environment.

Although living beings may be capable of spontaneous motion, life itself is not spontaneous. Life does not start itself, but rather is started. It does not end itself, but rather is ended. Even in a case of suicide, life is ended by a means, mediately, not by itself directly.

Carl Christian Erhard Schmid wrote an extensive commentary on Kant's philosophy, and published it in 1798. Summarizing Kant's views, he gave a four-point Kantian definition of 'life' as follows:

1. In general: a substance's power to determine out of an inner principle to act
2. Particularly: a finite substance's power to determine itself toward change

3. A material substance's power to determine itself toward motion and rest as changes of its condition. Because thought and desire are the only inner activities and principles of change which are known to us, but these are not objects of external senses, nor predicates of material substances, life is not ascribed to the latter

4. A being's power to act according to the laws of the power of desire, i.e., by means of its representation to become the cause of the reality of the objects of these representations.

In German as in English, the verb 'change' has both a transitive and a non-transitive semantic; both are in play here. Schmid's summary in the original reads:

1. Überhaupt: das Verögen einer Substanz, sich aus einem innern Princip zum Handeln zu bestimmen.

2. Insbesondre: das Verögen einer endlichen Substanz, sich zur Veränderung zu bestimmen.

3. Das Vermögen einer materiellen Substanz, sich zur Bewegung und Ruhe, als Veränderungen ihres Zustandes, selbst zu bestimmen. Da Denken und Begehren die einzigen uns bekannten innern Thätigkeiten und Principien einer Veränderung, diese aber keine Gegenstände der äussern Sinne, noch Prädicate materieller Substanzen sind, so kommt letztern eigentlich kein Leben zu.

4. Das Vermögen eines Wesens, nach Gesetzen des Begehrungsvermögens zu handeln d.h. durch seine Vorstellungen Ursache von der Wirklichkeit der Gegenstände dieser Vorstellungen zu werden.

Schmid's original spelling has been preserved here. If Schmid's understanding of Kant is correct - and we have reason to think that it is, because Schmid wrote during Kant's lifetime and received no objection from Kant - then "life" is the power to cause objects to be real, according to Kant. That is quite a statement!

11. 2012

11.1 December

11.1.1 Perception and Conception (2012-12-26 07:16)

Many philosophers will agree to some statement similar to this: the human mind shapes or processes our experiences and sense-data, and from them forms perceptions and ideas. But in the details of how this happens, and in the exact definitions of each of the words in such a statement, quite a few divergent views will be found.

In the history of modern philosophy, the concepts - and we will need to return to the word 'concept' again for clarification - of space and time emerged early as a central part of that process by which the human mind organizes sensations, and as a central topic of conflict between philosophers.

In a famous disagreement between Gottfried Wilhelm Leibniz (1646-1716) and Isaac Newton (1642–1727), two basic views were set forth. Samuel Clarke (1675–1729) joined the discussion on Newton's side, and letters between Clarke and Leibniz are the primary text for this matter (Leibniz almost certainly never met Clarke or Newton in person). Norman Kemp Smith outlines their positions:

> *(a)* The view propounded by Newton, and defended by Clarke, is that space has an existence in and of itself, independent alike of the mind which apprehends it and of the objects with which it is filled. *(b)* The view held by Leibniz is that space is an empirical concept abstracted from our confused sense-experience of the relations of real things.

The argumentation produced by both sides is sophisticated and brilliant. Ultimately, however, the question was a stalemate until Kant proposed a third view. Immanuel Kant (1724-1804) hoped to split the difference between Leibniz and Newton, glean the best of both, and discard the worst of both. Kant argued that space and time were part of the mind, but not abstracted from experience; rather space and time were part of the mechanism which makes experience possible.

With Leibniz, then, Kant refused to make space and time a physical reality in the way in which rocks and oceans are physical realities; with Newton, Kant gave space and time an unshake-able basis, so much so that they could serve as the *a priori* foundation for mathematics and geometry.

Since the time of Kant, a number of physicists and philosophers have wrestled with, refined, and produced variants of, these explanations of space and time. The long list would include Einstein and Hawking. Orlin Ottman Fletcher, at Furman University, hopes to make progress by distinguishing types of space and time. If there are different types of space, and different types of time, then we need not trouble ourselves seeking definitions and explanations which would apply to all time and space; this would allow us to steer clear of some of the problems and paradoxes on which others have foundered. He writes:

We distinguish between Perceptual space-experience and that which is purely Ideational. Their essential differences will appear in the course of this discussion. We treat perceptual space first.

Fletcher bases his notion of 'perceptual space' on the phenomenon of distinctness between objects and on the phenomenon of the extension of bodies - which is to say, he bases his notion of perceptual space on phenomena, not on any thing in itself.

The book, inkstand, and ben which are on my desk are seen to be distinct objects; each of them is apart from, or "out of," the others. As I lay my hand on the door-knob in the dark, the knob is felt to be "out from" the surface of the door. Similarly each of the corners of one of the covers of the book is perceived to be apart from the other corners. In like manner we apprehend that parts of other material objects on the desk are experienced as "out from" me. We do not perceive sensible objects otherwise than in a relation of "outness" to one another and to ourselves. So also portions of the over of a book or of a patch of light are seen to be "out from" one another. In a word, all sensible individuals are perceived to be in a relation of "outness" to one another and to the perceiver. In perceiving sensible objects, we always relate them in respect of position; and the objective reality which yields experience of mutual "outness," is the position-relation of the objects perceived. To say that the inkstand and the pen are "out from" each other, is to say that they are in distinct positions, and that we have related them in respect of those positions.

He turns from discussing the perceived distinctness of objects - their occupying of mutually exclusive spaces - to the extension of bodies in space. Note that he is restricting his discussion to perception, and has not yet addressed any metaphysical or *a priori* considerations.

When we look at a patch of light, the cover of a book, or the top of a desk, we not only have a consciousness of the apartness of portions of the whole, but we also have an experience of "spread-outness," or extensity. Taking all the many positions on the surface together, the whole appear extended. This is true likewise of the perceptions of objects which are not in contact with one another. You see two colored spots at a sensible remove from each other. The whole which you thus perceive is two spots related in position, and it has an aspect of "extendedness." The element of extensity is your experience arises in your perception of the position-relation of the spots. This is evident from the fact that the extensity of the whole is dependent upon the relative positions of the spots. Suppose these spots are colored counters. If you give them positions nearer each other, the extensity is lessened; if you move them farther apart, the extensity is increased. When a sheet of paper is folded, the more widely separated portions are brought nearer to one another, and what we then perceive appears to be less extended than the unfolded sheet. In a word, the aspect of extensity varies with variation of the position-relation of the objects. The position-relation of perceived objects is the objective reality which yields experience of extensity.

Fletcher's text thus far is experiential, and bears some similarity to Leibniz. He goes on to posit that extension is not the primary feature of "perceptual space" but rather that position-relation is.

We have found that perceptual space-experience comes of the perception of sensible objects, and that it has two characteristics: the mutual "outness" of the objects, and the extensity aspect of the whole. We have also learned that it is the perceived position-relation of objects which gives us experience of the mutual "outness" of objects and of extensity. From this it would follow that perceptual space is essentially the perceived position-relation of objects. This, however, differs fundamentally from the common conception of space, which is that space is extensity. This common conception of space is so fixed in thought that we restate considerations already presented. Every whole is many particulars in one. The surface of this sheet is for perception many distinguishable portions of a whole; and it is because we relate distinguishable portions to one another in respect of their positions, that the sheet appears to be extended. When I have experience of the book, the inkstand, and the pen in one perception, it is the position-relation of these objects that gives the aspect of extensity to the whole which I perceive. Spatial experience is, therefore, not primarily experience of extensity; it is experience of the position-relation of objects. The objects whose perception yields this consciousness are necessarily presented together in experience. You cannot relate the positions of three colored spots unless all three are present in your thought at the same time. Including this fact in our description of spatial experience, we would say that it is primarily experience of the position-relation of co-existent objects. Space, as a category, is the position-relation of objects, abstracted from the objects. There is, of course, no perceptual experience of space thus abstracted; for space does not exist by itself, it is a relation. Neither is there experience of extensity by itself; for extensity is an aspect of a perceived whole in which there are sensible particulars, — as the book and the pen, or distinguishable portions of a surface, — and it does not exist apart from sensible particulars. We conclude, then, that perceptual space is the perceived position-relation of co-existent sensible objects, the perception of this relation giving an aspect of eztensity to the whole of what is perceived.

Having posited position-relation as the basis of space, Fletcher then goes on to deal with indexical terms. Indexicals seem to refer necessarily to a conscious perceiver, to the knowing subject.

You reach out and touch a wall, you see a tree toward your right, you hear a bell sounding behind you. The position of each of these objects is related by you to your own position; and you express this relation in the terms, "before," "to the right," "behind." Other terms definitive of like spatial experience are in frequent use — as "here," "there," "above," "below," etc. They define the position of objects and are terms of direction. Such definition of position-relation is present in all developed spatial experience. If we deal efficiently with objects, we must apprehend where they are with respect to ourselves. This definition of space-perception also makes experience available for intersubjective intercourse. If I should say, "The book is on the upper shelf of the case which is at the left of the door as you enter the study," you would understand me and would easily locate the book. The examples given show that, in perceptual space-experience, direction is determined with reference to the position of the subject. The wall is before you, the tree is at your right, the bell is behind you, the book-case is at your left as you enter the room. In general, in perceptual space, the direction is determined by relating the position of the object to the position of the subject.

Having dealt at length with "perceptual space," Fletcher goes on to consider what he calls "conceptual space," which seems to be his version of the *a priori* concept or intuition of space. Kant argues that space is not, and cannot be, a concept, but is rather an intuition; Kant sees space as prior to concepts, and as making concepts possible. Whether Fletcher will follow Kant in this remains to be seen.

> Our discussion has led us to conclude that perceptual space, the space of sense-experience, is the perceived position-relation of sensible objects and the resultant extensity aspect of the perceived whole. As the extension element of the perception is an aspect of what is perceived, it cannot exist by itself. We cannot image extension apart from sensible objects. Conceptual space is extension abstracted from objects; it is mere extensity. According to this conception, space is whether objects are or not. As thus conceived, space has a sort of thinghood ; it is treated as an entity and is virtually regarded as a receptacle for material objects. We easily think of space as an infinite emptiness within which is all that is material. This mode of thought has even found a place in Philosophy; we often say that all sensible objects are in space. But we must not so regard the objective reality corresponding to our perceptual experience; for our perceptions and our images have a spatial character because of the perceived and imaged objects. Conceptual space is not the same with perceptual space. Perceptual space is a relation and a resultant aspect; conceptual space is this aspect, conceived as existing by itself. It is a product of reflection; and, although it is related to perceptual space, it differs significantly from the latter.

Continuing to think nearer to Leibniz than to Newton, Fletcher posits conceptual space as something abstracted from perceptual space, and perceptual space as something existing only relative to objects. Yet, if he give space so weak a foundation, how can geometry, which he seems to see as arising from the intuition of space, have a basis, much less a certain basis?

> But, if conceptual space, the space of mathematics, differs so greatly from the space of sense-experience, are the conclusions of mathematics valid for the world which we know through sense-experience? Are they valid for the real external world? Although mathematics conceives space as extensity abstracted from perceived objects, nevertheless it sets ideal objects in this extensity when it reasons respecting space. The ideal objects are the mathematical point, line, surface, and solid. Having set these in space, it discusses position-relations. The point, being without extension, is pure position. It takes the place of the subject in perceptual space; and direction and distance are determined from the point. Its line, surface, and solid are constituted ideally of positions which arc external to one another. The science of geometry is the science of related positions. From this we conclude (1) that, although mathematics conceives space as extensity abstracted from objects, it is wont in its reasoning to give this extensity concreteness by setting ideal objects within space; and (2) that mathematical reasonings respecting space are discussions concerning position-relations. In both these particulars, it puts itself at one with perceptual space. The conclusions logically deduced by such reasoning are true for related positions and are, therefore, true for the position-relations of objects. By so much as they are valid for spatial relations in general, they are valid for the spatial relations of the universe.

Having set forth his views on space and time, Fletcher explains why he rejects the Kantian view, and what he takes the Kantian view to be:

Kant's refusal to regard space and time as categories came of his sharp and over-wrought distinction between "sense" and "thought." He himself recognizes that there is no spatial or temporal perception apart from the activity of the understanding; from this it follows that the space and time elements enter cognitive experience through the judging activity of the mind. He was not wholly consistent, then, in refusing to list space and time with the categories. It is also evident that he gave the categories an external, or merely mechanical, relation to the material of knowledge; for he has the material of knowledge ordered in keeping with these forms. The forms are imposed upon the material; they are not an expression of the nature of the material itself. He limited the categories to the province of sense-experience. He could not do otherwise; for the understanding, in his system, only deals with material which is furnished by the senses. As a consequence, Kant's doctrine of the categories leaves them unrelated to the moral order and to judgments of value and purpose. Having limited cognitive experience to the phenomenal world, a world formally constituted by the mind out of sensuous material, he was obliged to assign the moral order and judgments of value and purpose to a realm beyond experience. His refusal to recognize space and time as categories, the extreme subjectivity of his conception of the categories, and their inapplicability (as conceived by him) to the moral order and to judgments of value and purpose, lead us to conclude that his doctrine is inadequate.

The question left, then, is this: are Fletcher's criticisms of Kant strong enough to cause us to abandon Kant? Is Fletcher's description of space and time strong enough to make us embrace it instead? Does Fletcher's version of space and time avoid the pitfalls which he attributes to Kant's version?

11.2 November

11.2.1 Metaphysics - Competing Definitions (2012-11-27 12:21)

The word 'metaphysics' is so problematic in the history of philosophy that one is sometimes hesitant to even use it. The number of books titled merely *Metaphysics* is large; the number of books with the words 'Metaphysics' or 'Metaphysical' in their titles is even larger. Martin Heidegger even wrote a book titled *What is Metaphysics?*

Answering the question posed by Heidegger's title is no simple matter, and any proposed definition will meet with a few passionate supporters, but probably more passionate opponents. Philosophers who offer definitions of 'metaphysics' sometimes even equivocate on their own terms. Immanuel Kant initially flirts with a definition of 'metaphysics' as that branch of philosophy which deals with God, with the immortality of the soul, and with the freedom of the will. He then goes on to offer his more widely-known definition of 'metaphysics' as the *a priori* synthetic.

Let's examine three possible definitions:

First, metaphysics might be that branch of philosophy - that science in the sense of *Wissenschaft* - which deals with things composed of neither matter nor energy.

Second, metaphysics might be that science which deals with things that cannot be perceived by the five senses.

Third, metaphysics might be that science which deals with things located outside of time and space.

Each of these definitions has some intuitive appeal, but also some problems. The word 'things' might require sharpening: it might include persons, ideas, or objects. To explain what an 'object' is, if it is outside of time and space, not detectable by the five senses, and not composed of matter or energy, could be a challenge. An opponent might say that this is not an object at all, or at most an object by analogy.

Another problem is the use of the preposition 'outside' - it is a spatial preposition, and so to be 'outside of space and time' might be judged to be either nonsense or senseless.

Beyond these two problems - and other problems which might be raised - a question might be posed about these three potential definitions: are they equivalent? Again there seems to be some intuitive appeal to the notion that these three are in fact synonymous expressions.

If we understand our five senses to operate on a basis explainable by garden-variety physics, then it would seem that the objects of our senses are composed of matter or energy or some mixture of the two. The processes described by physics take place in time and space.

Although these three definitions are far from trouble-free, it does seem that there is a strong argument to be made for their equivalence.

11.3 October

11.3.1 Windelband on Causality (2012-10-29 14:03)

Students of philosophy are familiar with Aristotle's four types of causation; students of the history of philosophy know that the topic of causation is early, ubiquitous, and enduring. Aristotle was the first, but not the only, philosopher to develop a fourfold explanation of causality. Wilhelm Windelband, born in 1848 in Germany, also saw a quadruple structure. Windelband's four causes are not the same as Aristotle's. Windelband saw causation as a relation between things, states, and activities. He describes the first type of causation as being a situation in which

> one thing is the cause, and another thing is the effect. That is the original form of the use of the causal relation, and it is chiefly found in organic life. The flower comes from the plant, the fruit from the tree, the ovum or the young from the mother. In such expressions as springing from, growing from, coming from, etc., in using the preposition "from" for the causal relation, language bears witness to the impression which contained this first form of causality. But if we interrogate science it assures us that this relation holds only for phenomenal things, for the momentary inherence-complexes of perception. The true things, the substances, neither come into existence nor pass out of it.

Windelband's first type of causation, then, may be called a "thing to thing" cause, or a "thing from thing" cause. By contrast, his second type of causality may be labeled a "thing to state" or "thing to activity" cause:

> The thing is regarded as the cause of its states and its activities. We thus speak to some extent of man as the cause of his actions, of the soul as the common cause of

its various functions, of the body - especially the organic body - as the cause of its movements. In developing those ideas we interpose, between the one thing and the multiplicity of its effects, the *forces* by means of which the substance exercises its causality. By this we understand certain general properties, capacities, or *powers*; and in this sense the attributes are at times called the cause of the *modi*. In the inner world the will is supposed to be the cause of volitions, the intelligence the cause of opinions, and so on. In the external world we find gravity, inertia, and vital forces filling the gap. Force is expressly defined as the cause of movement, and is thus regarded as a property of thing, the substratum, the matter, the substance. From the logical point of view all these forces are general concepts, assumed as the causes of the various functions. We easily see that the general thing, the force, is never the exclusive cause of the activity in question. In order to pass into such a special function, it always needs some occasion of action.

Windelband is aware here that this quarter of his causal analysis closely mirrors a quarter of Aristotle's:

> We therefore distinguish between *efficient* and *occasional* causes: *causa efficiens* and *causa occasionalis*. It is clear that the two together make up the entire "cause"; just as in the analogous case of a syllogism the full ground for the conclusion is in the combination of the two premises, the "major" and the "minor." This is also a very familiar way of looking at things, and there are many variations of it; but it shows us from the start how uncertain it is which is the real cause, the efficient or the occasional or both together.

In addition to acknowledging his debt to Aristotle - by borrowing from Scholastic vocabulary - Windelband is also defying Hume: Windelband's analysis of causation is precisely the target for Hume's critiques. Moving on to the third of his four causes, Windelband describes it in contrast to the second type: it is

> the converse of the preceding: states and activities are the causes of things. It is often said, for instance that the wind (which is a state or mode of motion) causes clouds. Many people say that insects are produced by the rain, which we regard as essentially a process, without inquiring into the thing that is moved. A house is put together by a number of activities; who exercises them is immaterial, as the functions are the immediate causes of the house. If in this way we come to treat the functions, detached from the things which discharge them, as independent causes of other things, we come in the end to the theory of the complete detachment of forces and functions. The dynamic view of nature, which Kant and Schelling held, falls into this class. Attraction and repulsion are forces of the primary reality, and matter is merely produced by them. The system is developed in a much more complicated form in Schelling's philosophy of nature.

In Windelband's explanation of his third cause, we see how he is historically located between Aristotelian physics in the past, and modern views of space-time in the future, with the German idealists as some type of midpoint. Neither a quasi-Aristotelian view of causation, nor a consideration of matter as merely a shorthand for the intersection of various forces without its own independent existence, are unique. The combination of the two, however, make Windelband potentially more philosophically interesting. Somewhat predictably, his fourth type of cause is

the causal relation between states: one is the cause and the other the effect. This situation holds for the immanent as well as the transgredient event. In the first case it is psychic, as when we say that perception causes memory (by association), or the willing of the end is the cause of the willing of the means (resolution), or the knowledge of the reason is the psychic cause of the knowledge of the conclusion (deduction). But even in the case of the physical immanent event we have this form of causality, especially in such complex structures as organisms. The digestion, for instance, is understood to be the cause of the formation of blood, of the peripheral stimulation of the nerves the cause of the central process in the brain. From the purely physical points of view, it is true, processes of this kind are resolved into transgredient events from member to member, and ultimately atom to atmo. It is in these mechanical transgredient events that we find this fourth form of causality in its simplest shape: the movement of the impelling body is the cause and the movement of the impelled body is the effect.

In using the word 'transgredient' Windelband introduces a bit of jargon. He explains the use of this word by contrasting 'transgredient event' with 'immanent event':

One case is where the event occurs in _one_ thing. In one and the same thing _A_ appear the states a_1 and a_2 in a definite succession. The thing, in other words, passes from one of its states to another. We will call this variety the _immanent event_. In our experience it is found chiefly in the psychic life, in which one presentation or emotion follows another in definite succession in one and the same subject of consciousness. This immanent change of state may, however, occur in a body: in one, for instance, which continues to move in a given direction at a certain speed in virtue of inertia. As a rule the material event is of the other type: it occurs between several different things. With state _a_ of the thing _A_ state _b_ of the thing _B_ is connected in a clear and invariable sequence. If we call this the _transgredient event_, because it passes from one thing to another, we must admit that we have no experience of such direct happening between different souls. If an event is to pass from one soul to another, it must be done by the mediation of bodies; and we thus get two sorts of transgredient events - the physical, between two bodies, and the psychological between sould and body or body and soul. In such cases, where is the unity of the event, which in the immanent event is based upon the identity of the thing? What in the case of transgredient events holds together the different states of different things in unity? We conceive this unity in the sense that the sequence is not merely a fact (like the world and the whistle in our preceding example), but that the states, which together make up the event, are necessarily connected in this sequence. The event therefore implies the _necessity_ of a clear and invariable succession of states.

Earlier in the text, Windelband given the example:

A word spoken in the house, followed by the whistle of a passing locomotive, does not make an "event," no matter how objectively the succession is determined. They lack any real connection.

Hayden White (born 1928 in Tennessee) explains that Windelband's interest in causation is central to his larger philosophical system. Windelband distinguishes between natural "nomothetic" sciences and historical "idiographic" sciences; the two are different not because of

their objects, but rather because of their methods. Windelband, according to Hayden White, posits that any object can be studied by both types of science. One distinguishing feature of nomothetic sciences is causation. Therefore, White writes,

> any given object could be studied by both kinds of science. A mental event, if viewed under the aspect of physical causality - as an instance of the working of some general law - was a natural event. That same mental event, described in its individuality and valued for its deviation from the class to which it belonged, because an object of the idiographic sciences.

Thus it is important for Windelband's project that causality be so analyzed that it can apply to everything, making any object a potential object for nomothetic sciences, while also leaving other aspect of any object as the object for idiographic sciences.

11.4 August

11.4.1 Taking Confucius Seriously (2012-08-31 10:09)

Although well-intended, damage has been done to serious academic thought, and its enterprise of close textual reading, by calls, motivated by a desire for multiculturalism, for the increased use of non-Western thinkers and belief systems in humanities courses and philosophy classes.

Wouldn't it be grand, it is thought, if we had courses which included classical Chinese and Indian philosophers? Surely, that would not only lead to more fertile philosophizing by students, given the intellectual cross-pollination, but it would also encourage more students of Asian heritage to enroll in such classes.

Noble imaginations like these result, however, in disappointing results. The expected outcomes fail to materialize because the multiculturalists who call for such academic programming do not know, understand, or realize what such study, if done properly, would entail. To engage in such study is to encounter sophisticated and complex texts which require analytical parsing by the student.

Perhaps motivated by pithy quotes from Confucius, and short aphoristic excerpts from koans, the multiculturalists envision a lively classroom engagement, in which students delve into riddles and - in the case of Asian and Indian students - find connections with their heritage.

In reality, students will encounter brilliant thought, but it will be encountered only after rigorous compilation of definitions of technical terms, and lots of close reading. Intellectually challenging and philosophically fruitful, yes, it certainly will be, but not an Oprah-like exploration of life's meaning and getting to one's genealogical roots.

Justin Smith, professor of philosophy, expresses it this way:

> There is much talk in academic philosophy about the need to open up the discipline to so-called non-Western traditions and perspectives, both through changes to the curriculum and also within the demographics of philosophy departments themselves. These two aspects are seen as connected: it is thought that greater representation of non-Western philosophy will help to bring about greater diversity among the women and men who make up the philosophical community.

Smith identifies two typical mistakes of multiculturalism. One mistake is the notion that first-person involvement with subject matter must be maximized; a student will, so it is thought, work better and have a better experience, if he identifies with the content being studied; the multiculturalist doesn't believe that a student might be interested in, and motivated to study, that which is culturally other. If you want more Chinese students to enroll, include an overview of Chinese philosophy in one of your classes; if you want more Indian students to enroll, include a survey of Upanishads and Vedas. The multiculturalist is thus actually a chauvinist: he assumes that students of non-Western heritage of xenophobes and nativists, and won't take a class unless you've stocked it with Indian and Chinese philosophers.

The second mistake, also typical of multiculturalism, is the sacrifice of rigor. It is assumed that one can simply "add in" a few token non-Western thoughts into humanities syllabus or a philosophy course. This ignores the meticulous research which creates a respectable academic discipline. It would be a parallel if one said, "science fiction is really popular; throw some quantum mechanics into your Euclidian Geometry course." As Justin Smith puts it:

> When I teach classical Indian philosophy, or advocate teaching it, for example, I often hear in response that doing so provides a service to the university community, and to the student body, insofar as it enhances the diversity of the philosophy curriculum, and makes the curriculum representative of a wider portion of the student body. But what I'm teaching are topics such as 5th-century Indian theories of logical inference, or the concept of qualitative atomism in classical Buddhism: material that is sufficiently obscure that no student, of any background, should be expected at the outset to recognize him or herself in it.

What is true of non-Western thought is equally true of Western thought: one would not expect a student, merely because his last name is Schmidt, to form an emotional connection with the writings of Gottlob Frege; one would not expect a student, simply because his last name is MacGregor, to have an immediate affection for the texts of Thomas Reid.

> The goal of reflecting the diversity of our own society by expanding the curriculum to include non-European traditions has so far been a tremendous failure. And it has failed for at least two reasons. One is that non-Western philosophy is typically represented in philosophy curricula in a merely token way. Western philosophy is always the unmarked category, the standard in relation to which non-Western philosophy provides a useful contrast. Non-Western philosophy is not approached on its own terms, and thus philosophy remains, implicitly and by default, Western. Second, non-Western philosophy, when it does appear in curricula, is treated in a methodologically and philosophically unsound way: it is crudely supposed to be wholly indigenous to the cultures that produce it and to be fundamentally different than Western philosophy in areas like its valuation of reason or its dependence on myth and religion. In this way, non-Western philosophy remains fundamentally "other."

Professor Smith is pointing out that it is absurd to assume that a student whose grandparents came from China will have some innate connection with Confucius, and naturally embrace Confucian views as some explicit expression of what the student already believes by virtue of his heritage. This fallacy is so crude that it constitutes an insult, and this fallacy is delivered by the multiculturalists who wear the badge of sensitivity as their highest honor. In any society, the link between philosophy and culture is often distant and tenuous, if it exists at all. Do we

take Kierkegaard as an expression of Danish culture? Is Spinoza an organic outgrowth of Dutch culture?

In philosophy, more than in any other discipline, one encounters nuanced distinctions maintained with precision. Yet the multiculturalist barges in, assuming that all Chinamen give *a priori* assent to Confucianism, that all Indians are in intellectual harmony with the Upanishads, and that these questions can be treated with broad generalizations about culture, rather than with close textual study earned by carefully crafted documents arising from honed philosophical traditions.

In fact, scholars who have little to do with multicultural trendiness are those most likely to give non-Western philosophers their due. A philosopher whose specialty is Aristotle finds his skills put to good use in studying the *Analects*. A specialist in Schopenhauer and Hegel finds excellent engagement in Sanskrit texts. It is telling that thorough studies of such philosophies are found outside of, and temporally prior to, the multiculturalist takeover.

Outside of philosophy, an example comes from the related discipline of philology: the study of Ge'ez, an ancient form of Ethiopian Amharic, and the study of Nubian dialects, were more widespread among American and European universities a century ago than they are today, despite - or perhaps because of - the rise of multiculturalism. Why? Such academic work requires rigor and analysis: real intellectual work. That's not what the multiculturalists are seeking.

11.5 July

11.5.1 Explanations (2012-07-14 10:52)

One way to understand philosophy is to see philosophy as an enterprise which offers explanations. Philosophers explain things - things like time, space, causation, etc. If that's what philosophy is, then we need to understand the mechanics of explanations - how does one construct an explanation? What makes one explanation better than another?

(To be sure, this is simply one way to characterize philosophy; there are many others.)

If we think about the very first philosopher, we can understand his novel and bold statements as offering an explanation. We are confronted with the world - the phenomena of the five senses, of daily experience. What causes them? From what did they arise? Historian Anthony Esolen writes:

> The first Greeks to call themselves philosophers strove to understand the physical world, to see what prime element underlay clouds and lions and marble and blood. We should not take for granted their bold assumption that such an element could be found, and that the world was intelligible! Thales of Miletus reasoned that such an element must be capable of assuming the three phases of matter: solid, liquid, and gas. Hence he posited that water was somehow the *arche* or foundation or origin of all things, though he knew well that you couldn't squeeze water to make iron or clay. His successor Anaximenes voted for air. Others named earth or fire or some combination of the four so-called elements.

Thales was exploring the discipline we now call cosmology. What is the systematic structure of the universe? Although we may laugh at his notion that water is the foundational element

of the universe, he had rational, if not correct, evidence: it covers 75 % of the earth's surface, humans are approximately 75 % water, it's necessary for all known forms of life; it's found everywhere on planet earth; etc. Not a bad hypothesis. But another Greek philosopher soon found the problem with the explanation offered by Thales, and the with the explanations offered by many of the other pre-Socratic philosophers:

> But there's a logical problem with all explanations of the world that resolve it into such stuff as water or air. To say that the *arche* of the world is water doesn't explain anything, since water itself is one of the things that requires explaining. It is circular reasoning. Nor does it help to stretch the circle as wide as the cosmos. The philosopher Anaximander, therefore, reason that whatever the *arche* is, it cannot be like the things it explains. It must be beyond predication. So he called it *apeiron* or the boundless.

The explanation for the physical world cannot be, according to Anaximander's reasoning, simply one of the ingredients of that world. Later philosophers would use words like 'essence' and 'substance' to try to capture similar ideas. That thing, upon which the physical universe is contingent, cannot be merely one part of the physical universe. It must be something other. Anaximander may get credit for invented that branch of philosophy we now call metaphysics.

11.6   June

11.6.1   Different Paths to Philosophy (2012-06-30 03:11)

Not every philosopher has decided, at some young age, to be a philosopher, and followed this decision by studying philosophy at a university. To the contrary, many philosophers have started their careers in some other field, and shifted to philosophy after making a start in those other disciplines. Examples abound: Hegel and Schelling began as theology students; Tad Schmaltz intended to become a lawyer; Nietzsche was a professor of Greek and Latin classical literature.

In this pattern we find also Karl Jaspers. As a young man beginning his university studies, philosophy from far from his mind. Hans Saner, who worked with Jaspers, writes:

> Shortly before the end of his high school years, the father one day summoned his son. He showed him his books, oriented him about income and property, and said to him, " ... I think that you can assume that you have ten years to study independently and work, before you will need to earn your own living." The high school graduate decided to study law, and then as a lawyer or a businessman to enter "practical life."

In fact, however, Jaspers abandoned the study of law, not for philosophy, but for medicine. His interest in medicine was more than casual: he suffered from diseases which threaten to kill him. He did well, passed his examinations, and began a successful career as a physician. A fellow who studied first law, and then medicine, would hardly seem to be a likely candidate for a philosopher:

Jaspers had never begun the academic study of philosophy under the direction of a teacher. He did indeed occasionally detect the inclination toward it; but he considered himself in his youth to be insufficiently gifted for this. Even choosing philosophy as a profession in a planned way would have seemed to him like a presumption. Philosophy was for him not a subject among subjects, which one could learn; whoever approached it this way continually ran the danger of end up in mere babble. "The path to philosophy does not go via abstract thought," but rather via the recognition of reality: of nature and of humanity. For this reason, Jaspers, even in regard to philosophy, had studied natural sciences and medicine. "It was the path to philosophy which had determined my choice of studies."

It is, then, love of truth which drives the philosopher. Whichever subjects he may study, the underlying urge is the same.

This gaze toward philosophy had emerged during the loneliness of the high school and university years and in face of the awareness of being constantly threatened by illness. What meaning could lie in an existence which was necessarily separated from that of other humans? What meaning did the exertion toward activity have, if no objective result was to be expected because of the probability of an early death? No science answered these questions. "There remained only one path: philosophy must show the truth, the meaning, and the goal of our lives."

His questions about truth and about the meaning of life were motivated by a very personal sense that he was on the verge of meaninglessness.

For this reason, Jaspers began early to read the philosophers: Spinoza, Lucretius, Schopenhauer, Nietzsche; Plotinus, Schelling, Kant, only later (after around 1913) Kierkegaard and Hegel. Above all, the reading of Spinoza brought him into a state in which he could bear, and even often affirm, sickness. "Philosophy is of amazing value. If it did not exist, life would be terrible." This was true not only for reading, but rather above all for thoughts, which arose at that time in his own philosophizing: "I suddenly marvel, that I exist at all. Out of an unknown darkness, the individual human climbs step by step to the consciousness of his existence ... he feels, that in an isolated existence, he has no significance." His existence must, without surrendering his solitude, be open to other people and to God. One "must have the strength to retain these categories, despite the way the pastors have botched them up." But the biggest problems "on which everything seems to depend" are the questions "what death, and what an individuality, mean." The consciousness of the inevitability of death distinguishes humans, and bestows uniqueness upon their actions. One should therefore continually listen to the *memento mori*. Only in the presence of death does one learn to understand: "we are always on the border ...", and only in understanding finality do we become aware: "we must struggle."

The questions which drive Jaspers, then, are about the meaning of life, the meaning of death, and about discovering the truth. Living with an awareness of death brings us closer to discovering the meaning of life, and to discovering truth. Openness brings us closer to these discoveries: relationships to our fellow human being, and our relationship to God will help us to learn the truth. Jaspers is clear: despite the fact that some people who call themselves religious have "botched up" concepts of life, death, and God, we must continue to pursue the

study of these things. Merely because other people have made a mess of spiritual thought is no reason for us to abandon it - we must rather fix it. Jaspers is encouraging philosophers to engage in thought which will clarify our understanding of God, thought which will correct the errors of sloppy thinking by other people in the past.

11.7 April

11.7.1 Society's Right to Exact Your Compliance (2012-04-22 18:35)

Does society have a moral right to make you do something? This is different from the negative case, i.e., society's right to prohibit you from doing something. William F. Buckley explains:

> A society has the right to impose negative restraints; but positive acts of compliance it may exact only extraordinary situations.

A century earlier, John Stuart Mill wrote something similar:

> the sole end for which mankind are warranted, individually or collectively, in interfering with the liberty of action of any of their number, is self-protection. That the only purpose for which power can be rightfully exercised over any member of a civilized community, against his will, is to prevent harm to others. His own good, either physical or moral, is not a sufficient warrant.

These two ethical formulations pose a number of questions. What are the consequences for society if we accept these formulations? Why do those who allegedly accept them disagree among themselves about the practical application?

11.7.2 Plato and Science (2012-04-13 07:38)

One of the more quotable lines from Plato's *Meno* is about the limits of human knowledge. The general topic of the conversation is about virtue. After ruminating about possible definitions of 'virtue', Socrates says that he doesn't know what it is, but that he's going to "examine and seek ... what it may be" or "carry out ... a[n] investigation and inquiry into what it is." The interlocutor challenges him on the possibility of such an investigation:

> How will you look for it, Socrates, when you do not know at all what it is? How will you aim to search for something you do not know at all? If you should meet with it, how will you know that this is the thing that you did not know?

One source of the ambiguity which leads to this paradox is the definition of 'know' as a verb. If there is more than one definition, i.e., if 'know' refers to more than one epistemological action, then one could be said to 'know virtue' and to 'not know virtue' simultaneously. Such homonymic cases are often the foundations for jokes and riddles, such as "what do you call a winter athlete from Warsaw? a ski Pole."

If Socrates claims that he does not understand what constitutes virtue, he says that he does not know virtue. But if he simultaneously can identify an instance of virtue, he can claim to

know virtue. Perhaps I do not know what constitutes my favorite soup at a restaurant - I do not know its ingredients - but I certainly know this soup when I taste it - I can identify it: a possible solution to Meno's paradox.

In a reverse situation, I might not be able to identify a thing, but I might understand its constituents. Imagine that I've never tasted borscht, but I've learned that it's a soup made with beets and sour cream and often served at room temperature. If I were blindfolded and offered a spoonful of it, I would not be able to identify it - I would not "know" it - although I understand its composition - I "know" it.

To place the paradox in a different context, imagine that you are looking for something which does not exist. Serious scientists spent years looking for a sample of Phlogiston. They "knew" what they were looking for, and yet how can one "know" what does not exist? Likewise, I can "know" what a four-headed swan is, inasmuch as I can conceptualize and make to myself a representation of such a creature; but I cannot "know" a four-headed swan in the sense of being able to recognize or identify it, because it doesn't exist.

The same would be true of aether, more properly called 'Luminiferous aether', which occupied earnest physicists as late as the early 1900's, when Einstein wrestled with the concept; he eventually rejected it, along with almost all other physicists, although he sometimes confusingly used the word 'aether' to speak of a space-time matrix.

Additionally, we can note a connection to Ockham: if I can't "know" something, being able to neither identify it or understand its composition, then I cannot fit it into a chain of causes and effects. Being unable to locate it in a causal sequence, I cannot call it necessary, and therefore am not justified in positing its existence.

Although philosophy is not philology, we nonetheless should take care to recall that Plato's *Meno* has been translated for those of us who cannot read Greek. To that end, to be thorough, we include an alternate rendering of the passage:

> But how will you look for something when you don't in the least know what it is? How on earth are you going to set up something you don't know as the object of your search? To put it another way, even if you come right up against it, how will you know that what you have found is the thing you didn't know?

Meno's paradox presents us with richer food for thought than the perhaps more popular but silly aphorisms about "knowing nothing" which Plato sometimes places into the mouth of Socrates.

11.7.3 Ethics in Context (2012-04-12 08:27)

The study of ethics is perhaps unlike other branches of philosophy, inasmuch as it requires some consideration of context. A philosopher who assert an ethical proposition does so in a social, historical, and cultural context; a reader considers that proposition in a context; an ethical situation occurs in a context.

By highlighting this notion of context, we do not automatically place ourselves among those who denial universal moral principles. Even if one acknowledges such eternal ethical truths, it is undeniable that they find applications in concrete situations, and that those situations vary.

In contrast, a timeless metaphysical truth, e.g., an assertion about the relationship between the physical brain and the metaphysical mind, will also find itself applied in various situations,

but the contexts of those situations will not factor significantly into the applications of any universal metaphysical propositions. The mind-body problem is the same for the Frenchman as it is for the Chinaman; the same in 2000 B.C. as it is in 2000 A.D.

Ethical propositions are more affected by context because, although ethics is not psychology, ethics is nonetheless more closely related to psychology than, e.g., metaphysics or symbolic logic. On a meta-level, philosophical considerations, not about ethics, but rather about the way in which ethics is done, are also necessarily contextualized. Perhaps this is what Dietrich Bonhoeffer meant when he wrote:

> Rarely perhaps has any generation shown so little interest as ours does in any kind of theoretical or systematic ethics. The academic question of a system of ethics seems to be of all questions the most superfluous. The reason for this is not to be sought in any supposed ethical indifference on the part of our period. On the contrary it arises from the fact that our period, more than any earlier period in the history of the west, is oppressed by a superabounding reality of concrete ethical problems. It was otherwise when the established orders of life were still so stable as to leave room for no more than minor sins of human weakness, sins which generally remained hidden, and when the criminal was removed as abnormal from the horrified or pitying gaze of society. In those conditions ethics could be an interesting theoretical problem.

Lurking behind Bonhoeffer's prose is a meta-level question: why engage in ethical philosophy? The impetus to ethical philosophy, in contrast to merely concrete moral thought, arises when there are not enough concrete instances of ethical situations to keep the mind occupied. Just as a pilot flying his spacecraft through an asteroid field has little inclination for theoretical physics - being quite occupied with actual mechanics - so the individual fully occupied with actual ethical situations may not be inclined to the analysis of systematic ethics.

> Today there are once more villains and saints, and they are not hidden from the public view. Instead of the uniform greyness of the rainy day we now have the black storm-cloud and the brilliant lightning-flash. The outlines stand out with exaggerated sharpness. Reality lays itself bare. Shakespeare's characters walk in our midst. But the villain and the saint have little or nothing to do with systematic ethical studies. They emerge from primeval depths and by their appearance they tear open the infernal or the divine abyss from which they come and enable us to see for a moment into mysteries of which we had never dreamed. What is worse than doing evil is being evil. It is worse for a liar to tell the truth than of a lover of truth to lie. It is worse when a misanthropist practises brotherly love than when a philanthropist gives way to hatred. Better than truth in the mouth of the liar is the lie. Better than the act of brotherly love on the part of the misanthrope is hatred. One sin, then, is not like another. They do not all have the same weight. There are heavier sins and lighter sins. A falling away is of infinitely greater weight than a falling down. The most shining virtues of him who has fallen away are as black as night in comparison with the darkest lapses of the steadfast.

Just as theoretical conversations about the shape of the earth ended when it was successfully circumnavigated, discussions about good and evil end when both are concretely present. Bonhoeffer's distinction between "doing evil" and "being evil" bears closer examination. Perhaps it can be explained by analogy to the distinction between accident and essence. Yet to mark a human as essentially evil, or essentially good, seems to violate the laws of human nature,

inasmuch as we are enjoined to "call no man good" and yet required to acknowledge the *imagio dei* in each human. Comparing occasional sins to accidental properties seems plausible, for even the most saintly commit sins, and even the most demonic might act corresponding to virtue. But if good and evil are to be essential in a man, then it would seem only in this way, that it would be a changeable essence - an odd turn of phrase, to be sure, because essence is often defined as that which does not change.

Perhaps a better understanding of Bonhoeffer's distinction would be the difference between occasional evil act and being in a mode of evil. As in music, there are accidental notes - a sharp or flat which takes the melody momentarily out of key - and there are modes in which an entire melody may be composed: an occasional transgression contrasted with a systematic pattern of transgression.

A third way to see this distinction between "being good" and "doing good" would be teleological: the isolated transgression may be the result of succumbing temporarily to temptation and to desire; the systematic and overarching pursuit of evil, of bringing harm to others, might correspond to Bonhoeffer's phrase ' being evil.'

In any case, Bonhoeffer, who is not strictly speaking a philosopher at all, yields perhaps a stimulus for comparing various meta-ethical perspectives.

11.8 March

11.8.1 Types of Ethics (2012-03-23 07:32)

Organizing the many different ethical systems produced by philosophers over the ages, some scholars have divided them into two camps: deontological (duty-oriented) and teleological (goal-oriented). The former tells us to do the right thing because it's the right thing; the latter tells us to do what is needed to achieve the right outcome.

Others have added two more categories: "virtue ethics" (in which actions are seen as arising from, manifesting, and giving information about the character of the agent), and "pragmatic ethics" (in which the social context of the action, i.e., the properties of society - its views on, and response to, the act in question).

Given any number of categories, the critical question is then whether, if some of the categories can be shown to be equivalent, that the number could be reduced. Some scholars even suggest that there is only one category: ethical systems.

In any case, we are discussing categories of systems: in each category, there will be many distinct and mutually exclusive systems.

Professor Alfred Freddoso writes that

> Important recent work in ethics signals a healthy shift away from "act-centered" moral theories and toward "character-centered" theories. The medievals, of course, fashioned several subtle and interestingly diverse doctrines of virtue, which could perhaps serve as touchstones for contemporary discussions.

Ethics done in this way identifies and enumerates virtues in the agent. Actions manifest or exemplify those virtues, and so remain secondary while virtues are primary in such an ethical system.

11.8.2   Events and Things (2012-03-23 06:08)

In the natural sciences, or observational sciences, descriptions can be about things or about events. Often we can construct two equivalent descriptions, one thing-centered, and the other event centered. A thing-centered description of magnetism states that a magnet has the power to attract bits of iron in its vicinity. An event-centered description would say that a magnet and a bit of iron moved closer together.

Although such pairs of descriptions may in many cases be equivalent, in other cases, or in other ways, they might not be synonymous. Professor Alfred Freddoso writes:

> Some prominent philosophers of science, dissatisfied with basically empiricist conceptions of natural law and scientific explanation, now argue that natural substances are best thought of as nonfree agents endowed with causal powers and that laws of nature are properly expressed by specifications of those powers rather than by generalizations (whether necessary or not) about events. The medieval Aristotelians, despite the inadequacy of their scientific theories, elaborated just such a philosophical conception of nature. Their writings in this area may prove to be illuminating, as has been clear ever since Peter Geach published his penetrating essay on Aquinas in *Three Philosophers*.

Comparing events to objects, some philosophers have noted that objects can change location, while events cannot. Following Hume, we would think of a magnet as the conjunction of numerous attraction events which occur at different times and places. Following the medievals, we think of a magnet has having the power of attraction, which naturally remains with it when it moves. The medieval view is more intuitive; the burden lies on Hume to show why we would need to override such an intuitive view.

11.8.3   Logic and the University (2012-03-22 11:14)

Although Scholasticism among thinkers like Johannes Scotus Eriugena certainly preceded the formal institution of the university, it is clear that the birth and flourishing of the university in late eleventh century invigorated scholasticism. We can trace the building of intellectual momentum from Charlemagne's educational initiatives to Bologna in 1088. Frederick Copleston writes:

> In 910 the abbey of Cluny was founded; and the monasteries of the Cluniac reform, which was introduced into England by St. Dunstan, contributed to

the emergence of Scholasticism. The university would be the result of merging such monasteries - or at least their intellectual powers - with the cathedral schools in the larger cities and the occasional law school.

> For example, the monk Abbon, who died in 1004, directed a monastic school on the Loire, where, in addition to the study of the Scriptures and the Fathers, attention was given to grammar, logic, and mathematics.

Logic at that time was built around Aristotle (whose logical works were not lost, but rather had been translated into Latin by Boethius around 520 A.D.), commentary on Aritstotle by Boethius, and Porphyry.

A more prominent figure, however, is Gerbert of Aurillac. Born about 938, Gerbert became a monk of the Clunaic reform and studied

what could still be rescued from Spain after the Islamic invasions of 711. Spain would be slow to develop universities until freed from Muslim oppression. Gerbert managed to gain some understanding of the Arabic philosophy. The Scholastics generally were able to absorb and preserve elements of Arabic philosophy after Islam turned on Arab scholars and purged their work from itself. By the end of the Middle Ages, Europe had more of Arabic philosophy than Arabia. In any case, Gerbert

seems to have acquired some knowledge of Arabic science. Later he became direct of the school at Rheims.

The school at Rheims, founded in the late tenth century, belonged to a group of schools centered on the emerging curriculum of the "liberal arts" and a step closer to the concept of the university.

In his period of teaching at Rheims he lectured on logic; but he is more remarkable for his study both of the classical Latin literature then available and of mathematics.

The early roots would bring forth results when both Scholasticism and the concept of the university were more developed. Alfred Freddoso writes

that the most profound thinkers of the late medieval era (e.g., Bonaventure, Aquinas, Scotus, Ockham) viewed logic primarily as a tool, albeit an indispensable one, for dealing with the "big" questions in metaphysics and theology. To illustrate, Aquinas's perceptive discussions of the logic of reduplicative propositions occurs within his treatment of the doctrine of the Incarnation. Again, by the time that Ockham wrote his groundbreaking *Summa Logicae*, he had already employed almost all his distinctive logical insights in one or another metaphysical or theological context.

The sophisticated and nuanced approach to logic found among the late Scholastics continues to challenge philosophers in the twenty-first century:

the medievals managed to raise some deep questions in philosophical logic which have not been faced squarely by contemporary philosophers. For instance, as a recent work by Fred Sommers suggests, the two-name theory of predication may have been done in more by Fregean fiat than by decisive arguments. Again, one suspects that we could learn something from medieval logicians about the ontological issues surrounding the semantics of past- and future-tense sentences or the use of fictive terms (e.g., 'chimera').

From early Scholasticism to later Scholasticism to contemporary twenty-first century philosophical questions about metaphysics, logic has played a continuously central role.

11.8.4 Thomist Concepts (2012-03-08 06:58)

On Wednesday, March 7, 2012, Professor Tad Schaltz lectured at the University of Michigan on notions of cognition and will found in Aquinas. Any deficiencies found in this account of Professor Schmaltz's lecture should be assigned to the note-taker and not to Professor Schmaltz.

Aquinas frames human knowledge between two other types of knowledge: between angelic cognition and the sense-cognition of non-human (sub-human) animals (and perhaps plants). Angels are incorruptible and disembodied intellects; their cognition is not the act of a bodily organ and is therefore unconnected with matter. They have a direct knowledge of immaterial forms, because they are directly illuminated by divine light. They perceive without sense-data. Angelic knowledge of matter or material objects is deduced from their knowledge of forms; Thomist forms contain within themselves enough information that every specific instantiation of them can be deduced from them; they are therefore probably somewhat richer than Plato's forms. Angels do not obtain or receive sense-data; one might therefore ask if they are blind and deaf.

By contrast, the cognition of animals, and of any other category of being which might be considered a corruptible material substantial form, is based exclusively upon sense-data. This sensory cognition is devoid of any knowledge of forms; such creatures are necessary unaware and ignorant of forms, because their cognition is purely the act of bodily organs and nothing else. When the body dies, the form dies. Animalistic cognition knows only materials particulars, of which it forms phantasms (mental images) by collecting sensible species (sense data) through its sensory organs. This is a thoroughly physical process.

The "middle" place to which Aquinas then assigns human cognition is between angelic and animalistic. The human intellect is incorruptible: Platonic, it can exist by itself without a material body. Intellectual activity is not a function of bodily organs. The cognitive power of the soul is, or relates to, the form of the body. The human intellect understands the material world through phantasms; it deduces forms via the material world. Aquinas uses designates as 'intelligible species' those forms which the mind deduces. ('Forms' and 'intelligible species' might be very nearly synonymous in Thomist vocabulary.)

We have seen how Aquinas locates human intellect in a "middle" position between angelic and animalistic cognition. He faces the challenge of showing that he can harmonize his system with both Augustine and Aristotle. The process of divine illumination is central; Augustine locates forms in God, or more precisely in the divine intellect. Augustine says that we know material objects through God's ideas. According to Augustine, God illuminates our minds with forms. By contrast, Aquinas has indicated that the human intellect deduces forms from phantasms informed by sensible species. How then can Aquinas claim to be in harmony with Augustine? Aquinas will claim that his system shows humans to be indirectly illuminated by God. Augustine seems to indicate a more direct illumination, but if Aquinas can explain some manner of indirect illumination, he can then say that he agrees with Augustine that the human intellect receives divine illumination, and downplay the distinction between his indirect illumination and Augustine's direct illumination. In any case, it will be imperative for Aquinas to avoid giving the impression that the human intellect is self-illuminating.

Turning to the issue of the human will, Aquinas is concerned to show that he is in harmony with Aristotle. Aristotle posited the will as a rational appetite which is necessarily directed toward happiness. Aquinas agrees, and one question about the human will is about the nature of the necessity which directs it toward happiness. Such a necessity could be at odds with some notions of freedom. By contrast, Aquinas and Aristotle define 'passion' as a sensory appetite. Aquinas, who is concerned to weld Aristotelian psychology to Christian ethics, posits a second

function of the will: free choice. This activity of free choice is not necessary, and therefore contingent, and is directed toward practical goods. Practical goods are, or are thought to be, means to an end, where the end is happiness. This allows for the human will to be at times misguided, when we freely chose a means, but do not know that these means will fail to achieve the desired end.

The will as rational appetite, which is determined by its object, inasmuch as happiness is necessarily the goal of the will is contrasted with the will as free choice, which is not determined by its object. Even in the former case, Aquinas sees the necessity as uncoerced: happiness necessarily attracts the will, but the will is not forced toward it.

Aquinas raises some murky issues around the question of whether the notion of Providence conflicts with free will. First arises the older question, going back at least to Augustine if not earlier, about the compatibility of our free action with God's foreknowledge. How can God foreknow our free actions prior to creating anything, specifically, prior to creating our wills which will make choices freely? To the extent that God's foreknowledge is based upon His knowledge of our will, it would seem that He designed our wills, and so His foreknowledge comes into tension with the freedom of those wills.

11.9 February

11.9.1 Sartre on Heidegger (2012-02-29 06:47)

Jean-Paul Sartre's voluminous correspondence with his friend Simone de Beauvoir offers us a glimpse both into his intellectual life and into his personal life. Although we do not gain a detailed understanding of his reading of Heidegger in these letters, we do see how central Heidegger was to Sartre's development.

In July of 1939, he wrote to her that he was happy that

> you've finally read Heidegger, it's worth your while and we'll talk about it.

Later the same year, he records his impressions of Paris in its last pre-war late summer. Even Sartre's mundane ruminations on travel are affected by his reading of Heidegger:

> Paris was very strange. Everything was closed, restaurants, theaters, stores, because it's August, and the neighborhoods had lost their individual character. There was only one totality left, Paris itself. A totality which, for me, was already a thing of the past and, as Heidegger says, retained and upheld by nothingness.

His reference to Paris as 'a thing of the past' may be because he's getting ready to leave, or because his sense that soon war will change it. In either case, once he has left (to resume his military service), he writes to Simone de Beauvoir about his fellow officers, even describing one's personality in Heideggerian categories, in a letter dated 6 September 1939. A few weeks later, he explains how he departs from Heidegger in his own thinking:

> All of man's acts, being accomplished by means of the body, are registered finitely on a double infinity - of immensity and minuteness. And from that fact, all consideration of objects as implements brings human reality to the consciousness of its own disregard. For what Heidegger did not see is that the infiniteness of the world surpasses its implementicity in every direction.

He continues:

> If the vast distances to the stars produce a stupor akin to Pascal's terror, that is because it comes from the transcendent infinite of the transcendental consciousness - and, at the same time, the perception of the stars necessarily includes an attempt at their implementation which conflicts with their "out-of-reach" quality. Heidegger didn't see that his world for man - which is indeed immediately and pre-ontologically an implement - is coincidental with man and not wtih the transcendental consciousness, and that it is completely surpassed and disarmed by the world for consciousness, which isn't capable of receiving implementicity, across which implementicity slips without being able to grab hold.

In October of 1939, he writes that

> I'm mulling over a central idea that will finally allow me to eliminate the unconscious, to reconcile Heidegger and Husserl.

Later, he reports that

> I attempted a reconciliation of Heidegger and Husserl. It didn't pan out, but I stuck to it doggedly, and I feel quite woozy after six hours' effort. The whole thing must be done over. There is still this entirely circular idea and I don't know where to pick it up, so I grab at it, and it slips through my fingers like a ball of grease. You'll see, it makes for odd little notebooks.

In November, he complains in a letter that one of his fellow officers didn't understand a Heidegger book which Sartre had lent to him; presumably most of Sartre's fellow officers would have been in that situation, although Sartre seems to think that after weeks of trying, they've begun to understand a bit of Heidegger. These were the long weeks after war had been declared in the autumn of 1939, but before actual fighting began in early 1940. Such officers had lots of time for conversation, but with an ominous or foreboding sense about the future. Sartre notes that

> Human reality is of a particular existential type, as constituted by its existence in the form of value to be realized through its freedom. This is what Heidegger expresses when he says that man is a being of distances.

Even as Heidegger's influence on Sartre makes itself ever more felt, Sartre discovers Kierkegaard's influence on Heidegger. He writes in another letter to Simone de Beauvoir about Kierkegaard's book

> *The Concept of Dread*, in which there are countless things within theologic terms that are obviously a bit forbidding. His influence on Heidegger is undeniable.

In another letter, dated December 1939, Sartre continues, telling her that he's continuing to study

> *The Concept of Dread,* which I'll send or bring back to you, and which you'll read with the greatest of interest, if only to understand Kierkegaard's influence on Heidegger and on Kafka (you know that Kafka feathered his nest through that book).

It becomes clear, through these letters, that 1939 was a pivotal year for Sartre's intellectual development, and that Heidegger influenced him greatly during this time.

12. 2011

12.1 December

12.1.1 Heidegger on Logic (2011-12-16 14:03)

Martin Heidegger's philosophy, if one wishes to be kind, is a most difficult system to under-stand, complicated by his technical terminology, including new words which he coined, e.g., 'thrownness,' which is meant to indicate the human phenomenological experience of being confronted with, or by, the world of sense-data and experience. If one wishes to be less than kind, one may pose the blunt question whether or not Heidegger makes any sense at all, and whether his thoughts and writings are actually rational.

It is then perhaps an odd juxtaposition that we would turn precisely to Heidegger for words about that subdivision of philosophy to which he seems least attached: logic. Yet, as every philosopher must, he busied himself, at least for some fraction of his time, with logic. In his lecture notes for the 1925/1926 academic year, he wrote:

> If we desire a more vital concept of "logic," we have to ask a more penetrating ques-tion: what is the subject matter of the science of logic? In doing so, we leave aside any consideration of logic as one discipline among others - viz., the science of speak-ing and therefore of language - and focus instead on what it is about.

Heidegger here uses the word 'science' in the philosophical sense: in ordinary life, we think of 'science' as biology and chemistry, as geology and astronomy. The philosophical sense is broader, including those, but including also anything which can be made into a systematic body of knowledge, or an academic discipline. Not only is the philosophical sense of the word broader, but it carries a different emphasis: it is not the content of biology or astronomy (frogs and stars, respectively) which interests the philosopher, but rather the systematic arrangement of that content - that it can be categorized according to a taxonomy, or its events analyzed in terms of cause and effect. It was a philosopher, Aristotle, who organized not only a taxonomy for biology, but for political science and other fields as well.

It is in this sense, then, that Heidgger speaks of 'the science of logic' - and here also he is following a philosophical tradition; the very phrase 'science of logic' (*die Wissenschaft der Logik*) has a long and venerable history among philosophers.

Seen historically, Heidegger proposes that logic arose from the study of language (grammar), and the study of language arose from the study of speaking. After sketching his somewhat obscure distinction between 'language' and 'speaking' - the latter being the most literal study of making sounds with the mouth, and the former a somewhat more abstract study of meaning and grammar - he goes on to explain logic as an extrapolation from speaking and language: what the speaking is about, or what the language is about:

> the basic achievement of speech consists in showing or revealing what one is speak-ing about, what one is discussing. Indeed, making vocal sounds was quite secondary to that.

As one abstracts from speech and language to logic, we see that grammar is to language as logic is to thought: and it is in thougt that the content of the "science" at hand will be defined and revealed:

> In such acts of revealing, whatever one is speaking about shows up, becomes perceivable, and, as something perceived, get defined in and by the discussion about it. This revelatory defining of what is experienced and perceived is the very same thing that we generally call "thought" and "reflection".

To speak of a process of 'revealing' is typically Heideggerian, for which he is alternately loved and hated. Heidegger's concept of 'truth' is a notion of uncovering or disclosing, which stands in contrast to a competing concept, truth as corresponding. In a correspondence view of truth, symbols - be they spoken or written, be they mathematic, scientific, or ordinary words - are true if they are arranged in a patterns which corresponds to reality. Heidegger, to the contrary, embraces his own view of truth, that it consists in, not corresponding to reality, but rather revealing or disclosing it. Heidegger goes on:

> In summary: in our primary, natural experience of how human beings live together with each other, we understand speech as the revealing of something by speaking about it, and as a thinking that determines and orders it. Language, speaking, thinking: they coincide as the human way of being. They are the way we reveal and illumine (both for ourselves and for others) the world and our won human existence, so that in this luminosity we gain sight: human insight into ourselves and an outlook on, and a practical insight into, the world. Logic as the science of speaking, studies speech in terms of what it properly is: the revealing of something. The subject matter of logic is speech viewed with regard to its basic meaning, namely, allowing the world, human existence, and things in general to be seen.

The subject matter of logic is not merely speech, but speech viewed viewed with regard to its basic meaning. Grammar, philology, and related disciplines are the study of speech; logic is the study of speech's meaning. Phrased another way, logic is 'deep grammar', while the ordinary study of phonemes and morphemes is 'surface grammar'. Because deep grammar is deep, it needs to be uncovered, discovered, and revealed:

> The fact that existence has and understands and strives for this basic form of revealing implies that, for the most part, much of the world stands in need of 'revelation', of being uncovered and made known. In other words, much of the world and much of human existence is by and large not un-covered. So beings can be drawn out of their not-un-covered-ness, their hiddenness. They can be un-covered or un-hidden. This uncoveredness or unhiddenness of beings is what we call truth.

Following Aristotle (who followed Socrates), Heidegger sees definitions as central to logic:

> Logic investigates speaking - the thinking that defines things - inasmuch as speaking uncovers things. The topic of logic is speech, specifically with regard to truth.

Observational sciences, natural sciences, like chemistry or biology, are also concerned with truth. Likewise, social sciences like sociology or political sciences seek truths. So what makes logic different, or even distinct, from them? Those other sciences seek to identify truths, or to sort out which statements are true and which are false. Logic, according to Heidegger, takes true statements and asks why they are true and how they are true.

Our definition of logic as the science of truth could be misunderstood. One might object that every science deals with truth, that truth is what all scientific knowledge is after. Yes, except that there is a misleading ambiguity here in how the word truth is being used. In a strict sense, no individual science other than logic deals with truth. The natural sciences, on the other hand, deal only and always with the true, i.e., what-is-true; and they do so within the arena of the knowledge of nature. Or outside of the natural sciences, one inquires into what-is-true for human action, or about the true that faith gives.

Logic deals with truths; the concrete individual sciences deal with truths. There are biological truths, spiritual truths, geological truths, ethical truths; but logic deals with truth itself, truth seen as truth, not seen in relation to the content of a particular science. Astronomy gives us truths; faith gives us truths; chemistry gives us truths; morals give us truths; but logic examines truth itself - what it is to be true.

But logic does not ask about the what-is-true in just any sense. Rather, it inquires primarily and properly into the truth of what-is-true. It asks: What makes this or that true thing be true in a given case? and what makes it be this true thing? The only way to make any grounded sense out of the truth of theoretical-scientific knowledge, practical reflection, or religious truth is to get to the foundation that lets us understand what truth means at all. Only from that foundation can we decide which kind of truth is most original, and whether the ideal of truth is to be found in theoretical-scientific truth or practical insight or religious faith. In other words, it is not easily decided which form of the true is primary and most basic. Even in today's philosophy, this question has not yet been settled.

Heidegger indicates that we should seek which form of truth is most 'primary' and 'basic' - this will be a daunting task, for it is not clear which standards will allow us to judge in this case, and it is perhaps a bit too optimistic to assume that philosophers as a community will ever agree to any potential answer.

12.2 September

12.2.1 The Basis of Modern Science (2011-09-18 17:52)

Although we might sometimes think of science and philosophy as two rather different academic subjects, they are in many ways related. We can see this in, for example, some of the words used in a current science textbook (*An Introduction to Physical Science*, a commonly-used college freshman text, 2009, Houghton Mifflin). Early in the introduction, it offers us this quote from the Lutheran pastor and philosopher, Johannes Kepler:

Theory guides, experiment decides.

Kepler, often known today for his discovery that planetary orbits are elliptical and not circular, spent most of his life thinking about theology, having studied at the seminary in Tübingen in Germany.

The textbook goes on to state in its own words that

Based on the assumption that the universe is orderly enough to be understood, a method of observation and rules for reasoning and making predictions have been formulated.

The clear philosophical import of this text is the "assumption" that the universe is rational, that it follows the laws of algebra and geometry, and eventually, the laws of chemistry and physics. The universe, then, has been designed around a set of principles - according, at least, to the current thinking in physics departments at the nation's universities. Further, there are "rules" for reasoning.

The idea that there are rules for reasoning, in physics at least, goes back as far as the theologian Isaac Newton. Outside of physics, in pure mathematics and logic, the idea is even older. This is the foundation of observational and empirical science as we now know it. Isaac Newton, because of his discovery of mathematical truths like the theorems and principles of calculus, and because of his discovery of physical laws like gravitation, spent most of his scholarly effort analyzing, and wrote most of his publications about, the Bible.

We see, from the works of men like Kepler and Newton, that there is a thick tangle where philosophy, mathematics, natural observational sciences, and theology meet. Assumptions about the possibility of phenomena in the universe being subject to mathematical modeling come very near expressing certain aspects or properties of God.

12.3   July

12.3.1   Anaximenes: Is the Universe a Machine? (2011-07-04 10:34)

Philosophers and scientists have long wrestled with notion of a mechanistic universe: it is attractive, to the extent that it reflects both the formalized assumptions and intuitive concepts of physics and chemistry, both of which can be modeled mathematically. On the other hand, it fails to correspond to our ideas of imagination, creativity, and chance. We can see clearly that some aspects of the cosmos are mechanistic - gravitational forces can be calculated and reliably predicted. But is there a decision process which would have allowed us to predict, after Beethoven finished his eighth symphony, which form and content would comprise his ninth symphony?

Anaximenes was perhaps the first to advance a strictly mechanistic cosmology. Even though Thales and Anaximander had rejected mythological "psyche" into their systems of physics, attributing something like a capability for arbitrary decisions to objects. Modern physics would like to tell us that even in a situation like the flipping of a coin, the results are, if not actually calculable, still in principle calculable. Anaximenes would agree. Yale's Professor Brumbaugh writes that Anaximenes

discovered that nature can be explained mechanically. Anaximenes thought that all changes were the result of changes in density brought about by the condensation and rarefaction of one underlying form of matter.

And this, in fact, is not far from current twenty-first century natural observational science. The vast majority of what is around us consists of three rather generic forms: electron, proton, neutron.

> The great virtue of this new idea was that it gave the scientist experiments, models, and clear-cut physical explanations of changes and their causes. This is still our own way of thinking.

If we review the first three philosophers in succession - Thales, Anaximander, and Anaximenes - then we can see their cumulative progress:

> To recognize the magnitude and importance of the Milesian achievement, with its three progressive insights into the materiality, uniformity, and mechanical causality of nature, the modern reader must realize that here we have the ancestors of contemporary physics and astronomy.

These first three philosophers lived in the town of Miletus, and are thus called Milesian; their lifespans overlapped and so they almost certainly knew each other. Anaximenes additionally proposed the notion of rotation as central to the universe, and so it is: planets rotate on their axes, orbit their stars, and a grouped into larger galaxies which also rotate and orbit. This notion of rotation fits well with his primary notion of density:

> Modern astrophysics can trace the life histories of starts in terms of alternate increases and decreases in their density.

And so, Anaximenes has made a persuasive case for a mechanistic universe. Yet the counterexamples remain: artistic creativity among humans, the uncertainty principle in physics, and the question of the origin of the universe. Anaximenes is persuasive, but not conclusive.

12.3.2 Anaximander (2011-07-02 17:05)

It's frustrating to come in second - most Americans know that George Washington was the first president, but far fewer can name the second president; John Glenn was the first American astronaut to orbit the earth, but the name of second American to orbit the earth is not so well known; Charles Lindbergh was the first pilot to fly solo across the Atlantic, but who was the second? Edmund Hillary was the first man to climb Mount Everest, but who was the second?

So it is with Anaximander: Thales was the first philosopher, and many textbooks begin with his name. But less often do philosophy classes dwell on the work of his successor.

Anaximander began where Thales left off: the quest for a grand unified theory, to borrow a phrase from modern physics, or, in older phrasing, cosmology. Yale's Professor Brumbaugh writes:

> Leaping beyond the brilliant yet simple notion that all things are made of the same stuff, Anaximander showed how deep an objective analysis of the real world must penetrate. He made four distinct and significant contributions to human understanding:
>
> 1. He realized that neither water nor, indeed, any such ordinary material could be the fundamental form of matter. He saw the basic stuff as a more sophisticated though somewhat obscure boundless something. This theory was to serve science well for twenty-five centuries.

2. He extended the concept of law from human society to the physical world - a clean break with the older view of a capricious, anarchic nature.

3. He invented the use of models to make complex natural phenomena easier to understand.

4. He deduced, in a rudimentary way, that the earth had changed over the ages.

Quite a list of intellectual accomplishments! His understanding of matter is a direct ancestor of both modern chemistry and modern atomic physics. His understanding of the laws of nature - which amounts to saying that the universe is rationally constructed using algebra and geometry - is the necessary precondition for the development of chemistry and physics. The skill of modeling, which follows from the fact that the universe is assembled using the laws of algebra, is the basis for the understanding of natural processes: they can be mathematically modeled, which allows us to predict where the planet Neptune will be at this time next year, or describe how continental drift has slowed from miles to per to inches per year. A fossil hunter himself, Anaximander reasoned that even the highest mountains must have at one time been covered by water, a massive world-wide flood.

Agreeing with Thales that there must be one common principle underlying all matter, he disagreed with Thales on what it was. Rejecting the first philosopher's hypothesis of water, Anaximander noted that this proto-material must be able to manifest itself in nearly endless qualities and properties we see in different objects:

> If everything real is a matter with definite qualities, it must be possible for this matter to be hot in some cases, cold in others, sometimes wet and sometimes dry. Anaximander thought of qualities as always being contrary pairs. If one identifies matter with one quality of such a pair, as in Thales' "all things are water," how can one explain the existence of the contrary quality? If "to be is to be material," and "matter is water," then it would seem to follow that "to be is to be moist." All right: what happens when things become dry? If the matter they are made of its always wet, drying would destroy the matter of things: they would become immaterial and cease to be. In the same way, matter cannot be identified with any one quality to the exclusion of its opposite. From this, the concept of matter as the boundless, a neutral and indeterminate something, follows. From this reservoir, the opposite qualities "separate out": from the boundless all specific things arise, and to it they return when they cease to be.

Although we don't think of neutrons, protons, and electrons as "boundless", they are in some sense "neutral" and, until they are placed into atoms and molecules, indeterminate. Anaximander was realizing that, in order to express all possible qualities and properties, the basic building blocks of matter would have none of those qualities or properties, and would be capable of being configured in many, perhaps infinitely many, different patterns to yield the different properties we experience in actual bits of matter.

12.3.3 Thales - the First! (2011-07-02 11:15)

It is widely-known, of course, that nearly every book on the history of philosophy lists Thales as the first philosopher. It is even more widely-known that this statement can be contested. Aren't there other people who could claim the title of first philosopher? For example, the author of the book of Ecclesiastes, which probably pre-dates Thales by several centuries?

And yet Thales endures, and clings to his title of "first" philosopher, despite the fact that we have only a few small textual fragments from him, and they reveal a cosmology which is naive and overly-simplistic. He retains his title of "first" for reasons best described in Friedrich Nietzsche's defense of him - and thereby also set the trend for several centuries of pre-Socratic philosophy. As Yale's Professor Brumbaugh writes,

> Thales could, with some right, have claimed the ideas of matter, of physics, of science, and of philosophy as his inventions. However strange this may seem, all of these ideas had to be discovered. And to be discovered, mythology had to be abandoned. To state - as Thales did - that "all things are water" may seem an unpromising beginning for science and philosophy as we know them today; but, against the background of mythology from which it rose, it was revolutionary. The break was not complete; it could not have been. Thales still had no abstract idea of matter, as opposed to an imaginative picture of a fluid sea; the two were mixed together. And his idea of change was still based on a feeling that "all things are full of soul." But he had asked a new kind of question. His question has given distinctive shape to Western thought.

The question posed by Thales, if perhaps tacitly, is the question of cosmology: what is the nature and structure of the universe? what is its origin and design? His answer, if laughably wrong, is understandable in the sense that water is 75 % of the earth's surface, is 75 % of every human being and most other living creatures, is necessary for all forms of life, is the only substance commonly seen in all three states (solid, liquid, gas), and is found everywhere except in the vacuum of deep space between planets.

The rejection of mythology by Thales led to other pre-Socratic philosophers, but perhaps most of all to Xenophanes, who would reject anthropomorphic deities of polytheistic mythologies, and instead move forward to a rational conception of God: invisible, eternal, and monotheistic.

To seek to provide an answer to the question, What are all things?, required tremendous insight and imagination. For the question assumes that everything forms a part of some single world of being, and that all things have some common property. It raises the question of what being is, as opposed to less general questions about what these or those particular being are. And prior to answering the question, Thales had assumed that there is enough system among the infinite variety of things in the world to permit some sort of single answer. This assumption marks the beginning of philosophy.

In Thales, then, we see already the notion of system, the notion that the world is rational and understandable - that the universe is constructed with axioms and principles. This is the foundational assumption of physics and chemistry. Thales has indeed earned his title as "first" philosopher.

12.4   June

12.4.1   Parmenides (2011-06-29 10:56)

Parmenides is pivotal in the history of philosophy - in order to understand Anaxagoras, Empedocles, or Zeno of Elea, one must first understand Parmenides, because those later thinkers were writing in reference to him. Yale's Professor Robert Brumbaugh writes:

Parmenides was greatly influenced by the Pythagoreans. He invented formal logic by applying their mathematical methods of proof to the philosophical problem of the natures of being and not-being. Presenting his argument in the form of an epic poem, he used logic to show that being is unchanging and uncreated. This conclusion denied the possibility of any appearance of variety or change. A corollary to this positive, if mystical, conclusion was that human reason has the power to understand reality.

He is, then, not only foundational for understanding later generations of Greek philosophers, but also many modern philosophers, starting with Descartes: the philosophical admiration for the strength of mathematical reasoning has led a diverse set of people - from Spinoza to Hegel, from Wittgenstein to Quine - to model various branches of philosophy on the patterns of proof and theorem found in mathematics. Parmenides touches on another central point in philosophy: he poses a question about the strength and abilities of human reason. To be sure, he also answers that question - and thereby finds for himself both a number of allies and opponents. It is the question that is the beginning-point for Kant's philosophy: which questions can human reason answer, and which ones can it not answer? Such a question is properly prior to any philosophizing, because before we can try to answer any further philosophical questions, we should first know whether or not those questions can be answered at all, and whether it is human reason, or some other faculty, which might be able to answer them.

Interestingly enough, Parmenides also wrote about astronomy, biology, and other sciences. Yet if his main insight was sound, the many changing things these sciences study could not be real. Vividly aware of change and the individuality in the world they observed about them

later Greek philosophers would try

to find ways to keep Parmenides' logical method but to avoid his mystical conclusion.

It doesn't bother Parmenides that the natural sciences must be, on his terms, dealing with what are illusions. He is content to deal with the parade of images presented by, as, or through sense-data, while realizing that they are merely images, that there is no underlying change behind the image of change, no underlying coming-to-be behind the image of coming-to-be, and no underlying passing-away behind the image of passing-away. Again, one sees here the seeds of Kant and phenomenology: the seeds of the former, inasmuch as the logic of causal relations in the phenomenal world does not apply to, or even entail the existence of, the noumenal world; the seeds of the latter, inasmuch as Parmenides brackets, even if he has already answered, the questions about the existence and natural of the noumenal world. Parmenides (as synopsized by the Brumbaugh) sets up his argument:

Suppose someone assumes that being is divided into many separate beings. Then what is it that separates them and holds them apart? It cannot be being, for then all of the parts would still all be together in one totality, and it not be distinct. On the other hand, if one says things are separated by not-being this leads to absurdity. For not-being, if it is the opposite of being,can only be a void, a kind of pure nothing: if one says that non-being is a separator, he is treating it as being, which by definition it is not. If one says that though it is nothing, it still separates the parts of being, this is the same as saying that "nothing separates being into parts," which in fact is a statement denying that the parts are separated. How can nothing do something positive? The idea is self-contradictory.

Parmenides is both making a specific metaphysical statement here, and also laying down a principle for argumentation in general:

> In explicitly recognizing that noncontradiction is a fundamental property of existence, as well as of thought, Parmenides hit a upon a most important principle. Once it is recognized that only consistent entities can exist, the truth of generalizations can be tested by examining their consistency.

It is worthwhile to sharpen the notion "that noncontradiction is a fundamental property ... of thought." One might more specifically say " ... of rational thought" or " ... of logical thought" or even " ... of significant thought," for a self-contradictory sentence, and the proposition which is represents, cannot signify, i.e., cannot have a referent. The net impact on philosophy

> was to reinforce philosophical formalism by showing that there is a close connection between reality and abstract logical form, and to make philosophers more conscious of the methods by which they arrived at their conclusions.

Future philosophers would appreciate "the value of precise logical form," an impact which places Parmenides into the category of very important philosophers!

12.4.2 Empedocles (2011-06-24 12:55)

Empedocles wrote his philosophy partly in reaction against, and partly in support of, the ideas of Parmenides. Empedocles agreed that the basic nature of the universe was changeless, but he allowed for a changing arrangement of the changeless building blocks of the universe. Thus he is often seen as the first thinker to state the concept of elements, from which we get our modern idea of chemistry. Yale's Professor Brumbaugh writes:

> To account for change, without assuming that "something comes from nothing," he introduced the idea of a plurality of "elements," which mix in different ratios but themselves remain unchanged. However, both the form and content of his poetry suggest that Empedocles was more interested in interpreting the vivid world of our sense than in finding some other reality behind appearance. He had an imagination able to combine the most divergent notions - so much so that many later readers have been unable to appreciate the originality of his work. Those of his ideas that were most philosophically influential were his notion of a plurality of "elements" ...

Brumbaugh goes on to describe one possible way to interpret the murky texts of Empedocles:

> One can deny that there is any deep-hidden reality underlying appearance and argue that truth is to be found in close observation of what we can see or touch or imagine vividly. Someone who takes this standpoint will be less trustful of appeals to to mysterious "realities," to highly abstract arguments, than he will be to more vivid items of experience.

If this is, in fact, what Empedocles thought, then he not only anticipated the modern chemical system of elements, but he may also have anticipated several other philosophical schools: phenomenology, epiphenomenology, and the radical empiricism of Hume and the logical positivism of the Vienna Circle.

12.4.3 Anaxagoras (2011-06-24 12:28)

To understand the work of the Greek philosopher Anaxagoras, it helps to see him against the backdrop of two other philosophers: Zeno of Elea and Parmenides. Parmenides emphasized what he believed to be the unchanging nature of the universe and its basic components: if something exists, it has always existed and always will exist, because nothing can come into being out of nothing - which is to say, something does not emerge from nothing. Because things don't come into being out of nothing, it follows (at least for Parmenides) that things don't cease to exist, either: something cannot disappear into nothing. Parmenides further extrapolated that, because things neither enter nor leave existence, things also do not change in any meaningful way. Finally, he concluded that because things neither change, nor begin to exist, nor cease to exist, then there is essentially only one thing in the universe: what seems to us to be many things is actually a type of cosmic unity.

Zeno of Elea (not to be confused with Zeno of Citium) was a follower of Parmenides, and wanted to support his theories via a set of paradoxes. Zeno wanted to show that if one holds views which contradict the views of Parmenides, then one will wind up believing absurdities. Zeno wanted to show that motion, because it is a type of change, doesn't really exist, despite the testimony of our sense-data: motion entails paradoxical results when one uses rigorous logic in physics. Likewise, the overarching cosmic unity of all being is consistent, but Zeno says that if we assume the existence of many things, we encounter self-contradictory results.

We arrive then at Anaxagoras. Yale's Professor Brumbaugh writes:

> Anaxagoras contributed three new ideas to Greek philosophy. First, he developed the view that matter is a continuum. This is one way to escape Zeno's paradoxes, since it gives both space and time the property of infinite divisibility. Second, he presented a new concept of the mind and its place in the cosmic scheme, maintaining that although all other things mix together, mind remains pure. This was not yet a mind-matter dualism, but it was an important philosophic contribution. Third, Anaxagoras formulated a new way of relating these two dimensions, using mind as the motive power that sets matter in motion.

While Anaxagoras wanted to find solutions to some of Zeno's paradoxes, he did not flatly reject Parmenides.

> Impressed by Parmenides' statement that "nothing can come from nothing," Anaxagoras held that matter changes only through a different mixing of qualities which all things share. There is never a sudden bursting into being of something that was nothing just before. Instead there are changes in intensity of the mingled qualities that flow from one place to another. The qualities themselves, once they have separated out of the primordial state when "all things were together," are conserved, not created or destroyed.

In this way, Anaxagoras tries to preserve Parmenides basic doctrine, while explaining the appearance of change and motion. There is something akin to modern molecular chemistry in the ideas of Anaxagoras, although he would not have thought of it that way: the individual atoms do not essentially change, but they can be recombined into different compounds.

12.4.4 Constructive Skepticism (2011-06-23 12:31)

Descartes seems to simultaneously seek an absolutely certain knowledge and direct a withering doubt at anything which presents itself as certain knowledge: not a contradiction, but a tension to be sure.

Yet Descartes saw his skepticism as constructive rather than destructive: those bits of knowledge which survived it would be certain, and would be the unshakable foundation stones for a new philosophical system. Russell Shorto writes:

> It was necessary for him to prove both the existence of God and the innate goodness of God, for, given the corrosiveness of Cartesian doubt, these were the only assurances we have that the material world really exists. So his work has a theological grounding: not only do the world and science depend on God, but so does Cartesian philosophy.

If chemistry and physics are to bring us any knowledge, Descartes writes, it will be upon this basis: for him, the "divine spark" may be characterized as certainty. One of his followers, Nicolas Malebranche, would refine this theme:

> To talk of Cartesian dualism is somewhat misleading; Descartes actually wrote that the universe consisted of not two but three substances: mind, body (that is, the material world), and God. God is the guarantor that the mind and the world can interact meaningfully - that we can reach truth using the power of reason.

Malebranche doesn't seem to realize that his insight into Cartesian thought has an odd resemblance to Plato's tripartite soul, and Shorto, in summarizing Malebranche's view, doesn't point out the same similarity to Freud's tripartite mind. The central role of God in Cartesian thought translates into the central role of God in modern philosophy:

> It would be wrong to imagine that the Enlightenment was antireligion. Its mainstream thinkers, as well as many if not most of the radicals, were antichurch, not antifaith. Their problem with religion was that it kept individual humans from exercising their own minds and applying their innate reason to understanding the world and their place in it. This criticism applied not only to Catholicism but also to Protestant theology.

Here Shorto relies on the somewhat sloppy shorthand of "Enlightenment" for "modern philosophy" or for "thinkers writing in era immediately after the death of Descartes." The notion of the "Enlightenment" as a distinct historical era, even if we allow for some variations within the monolith, is so ambiguous as to be undefinable. But the point stands: there was an eager engagement in the concept of God, even as there was a violent rejection of institutionalized religion. Spinoza exemplifies this:

> Spinoza insisted that there is such a thing as religious truth, but he also insisted that religious institutions were largely concerned with protecting their own position.

Descartes, who agreed with Aristotle very rarely, might have formulated the matter in terms of an Aristotelian golden mean: a healthy skepticism, even a bitter cynicism, about religious institutions does not entail a rejection of the concept of God. On the contrary, our assumption that the universe behaves in an orderly fashion (the laws of chemistry and physics) implies a theistic view.

12.4.5 Lost in Words (2011-06-15 11:16)

Trained philosophers are constantly confronted with the glaringly illogical writings which characterize both the popular press and contemporary politicians. Example follows example of inconsistency, faulty argumentation, ambiguity, and every other error which logicians teach their students to avoid. A recent example, from the autumn of 2010, is provided by Rand Paul in a newspaper column he wrote. Attempting to establish for his readers his location on the political landscape, he explains for several paragraphs that he is not a "Libertarian," but rather a "Constitutional Conservative" — but never defines either term!

12.5 May

12.5.1 Fichte's Categories (2011-05-20 08:35)

Although it is common, when studying the thought of J.G. Fichte, to consider his philosophical system as reduced version of Kant's system - i.e., that Fichte's system is Kant's system minus the *Ding an sich* - it is also possible to see Fichte's system as an augmented version of the Kantian system: "Kant plus something" instead of "Kant minus something."

This becomes clear if we consider the role of time and space in the Kantian system: they are foundational in the psychology of perception, from them much else is deduced, and upon them much else is based. Time and space hold a prior position in Kantian metaphysics and epistemology, not only in the sense that they are located toward the front of the book (*The Critique of Pure Reason*), but also in the sense that they are the necessary condition for experience, perception, representation, and intuition. Time and space are not "real" in the sense of being noumenal, but rather are the structure or framework of the mind - or at least a part of such structure or framework - the machinery by which we process our sense-data into perceptions.

Bearing in mind, then, the centrality of space and time to the Kantian system, we see that Fichte writes, concerning those who consider ethical systems from a roughly Kantian point of view, that

> I would like very much to know what those who assume a familiar air of superiority whenever they encounter any mention of "intelligible intuition" imagine our consciousness of the ethical law to be like, or how they are able to construct for themselves concepts such as "right," "virtue," and the like - concepts that they certainly to possess. According to them, there are but two *a priori* intuitions: time and space. They undoubtedly construct the [ethical] concepts in question within time, which is the form of inner sense. But they undoubtedly do not consider these concepts to be identical to time itself; they are only a certain way of filling time. With what then do they fill time in this case, and what underlies their construction of these concepts? The only *a priori* intuition that remains for them is space. Consequently, their "right" would have to turn out to be, let us say, square, while their "virtue" would perhaps have to be circular, in the same way that all of the concepts they construct on the basis of sensory intuition - the concept of a tree, for example, or of an animal - are nothing but certain ways of limiting space. But they do not really conceive of right or virtue in this manner. What then is it that underlies their construction of these concepts? If they observe correctly, they will discover that what underlies these concepts is acting as such, i.e., freedom. Both concepts, the concept of right as well

as that of virtue, are for them determinate limitations of acting as such, just as all sensory concepts are for them determinate limitations of space. But how have they arrived at this foundation that underlies their construction of these concepts? One would hope that they have not inferred acting from the dead inertia of matter, nor freedom from the mechanism of nature. They must have obtained this by means of immediate intuition; consequently, in addition to the two intuition they recognize, there must also be a third.

Fichte points out that the quasi-Kantian ethicists cannot find an adequate foundation for moral thought in the two intuitions of time and space. (He seems careful not to attack Kant himself directly, either because he genuinely thinks that Kant is free from the errors of the later Kantians, or because Fichte's respect for Kant is too great, or because a direct attack on Kant would not have been tolerated by Fichte's contemporaries.) If time and space are the starting point for all mental processes, then there could be no moral thought: if there is moral thought, then there must be a third foundational intuition alongside the other two.

So Fichte builds his system on a three-legged stool, a philosophical tripod, and sees this as an advantage over the two-legged foundation which is supposed to support the Kantian system. Kant began his epistemology with the notion that space and time would be the framework, or would generate the framework, which the mind would use to perceive and understand. Fichte adds a third atom to this framework: an ethical intuition. This intuition will deal in some fashion with "action" and "freedom".

Thus constructed, Fichte's ethics will find their roots in the very foundations of his system. If the three feet of his system are time, space, and ethical intuition, then metaphysics and ethics will play the most central role in the system, relegating other types of philosophy to secondary roles, and Copleston will be correct in observing that Fichte has a "tendency ... to reduce religion to morals," inasmuch as ethics are more foundational to the system than God is.

Offering a slightly different explanation of his addition to the Kantian system, Fichte reviews the attempts of Kantians to explain the self in the same manner in which they explain noumenal or phenomenal objects. Fichte objects that, if we treat the self the same way we treat a rock or a tree, we will miss important aspects of the self which make it a subject instead of merely an object.

> If such an existence were ascribed to the self, it would cease to be a self; it would become a thing, and its concept would be abolished. Later, to be sure - not in time, but in order of dependence of thought - even the self, though still remaining, as it must, a self in our sense of the word, will also be credited with existence of this sort; in part with extension and subsistence in space, and in this respect it becomes a determinate body; in part with identity and duration in time, and in this respect it becomes a soul. But it is the business of philosophy to demonstrate and explain genetically how the self comes to thing of itself in this fashion; and so all this belongs, not to what we have to assume, but to what we have to derive. - It comes, then, to this: the self is originally a doing, merely; even if we think of it only as active, we already have an empirical concept of it, and so one that has first to be derived.

We have two arguments here: first, that we cannot create or justify the foundation of ethical concepts without adding a third intuition to the first two, i.e., adding "action" to time and space; second, we cannot explain or sufficiently express the nature of the self, i.e as active agent and knowing subject, without this third leg to the stool.

Fichte attempts - whether he succeeds or not, the reader may judge - to show that an accurate concept of self is impossible without his system:

> The principle of life and consciousness, the ground of its possibility - is admittedly contained in the self; but this gives rise to no genuine life, no empirical existence in time; and any other kind, for us, is absolutely unthinkable. If such a genuine life is to be possible, we need for the purpose another and special sort of check to the self on the part of the not-self.

Fichte sees himself less as contradicting Kant, and more as extracting from Kant's system that which is already hidden or latent within it. Thus he sees that Kant's critical philosophy begins with the exploration of the mechanisms of the mind - e.g., how time and space are parts of the mind, or generated by the mind, and used by the mind to process experiences and sense-data into perceptions and representations. The mind is, then, essentially active; from this, Fichte proceeds to identify "action" as a fundamental or foundational intuition.

12.5.2 The New York Times and Pure Reason (2011-05-03 06:09)

Columnist David Brooks explores the question of why some religions are beneficial, generally bringing help to humanity, and other religions are useless or even damaging to the civilizations on this planet. He notes that

> Many Americans have always admired the style of belief that is spiritual but not doctrinal, pluralistic and not exclusive, which offers tools for serving the greater good but is not marred by intolerant theological judgments.

He captures here a sentiment which characterizes some segment of our society. It seems to offer exactly those benefits one would hope to gain from a religion. But such religions eventually disappoint. What at first appears to promise a chance to harness civilization's energies toward noble purposes turns out to be finally impotent, unable to organize the hoped-for charitable impulses. Or, even worse, it reveals itself to be blinding, rendering its adherents unable to perceive more nuanced moral realities.

> Vague, uplifting, nondoctrinal religiosity doesn't actually last. The religions that grow, succor and motivate people to perform heroic acts of service are usually theologically rigorous, arduous in practice and definite in their convictions about what is True and False.

Brooks refers to the latter set of religions, those which benefit mankind, as those with "rigorous theology":

> Rigorous theology provides believers with a map of reality. These maps may seem dry and schematic — most maps do compared with reality — but they contain the accumulated wisdom of thousands of co-believers who through the centuries have faced similar journeys and trials.

> Rigorous theology allows believers to examine the world intellectually as well as emotionally. Many people want to understand the eternal logic of the universe, using reason and logic to wrestle with concrete assertions and teachings.

> Rigorous theology helps people avoid mindless conformity. Without timeless rules, we all have a tendency to be swept up in the temper of the moment. But tough-minded theologies are countercultural. They insist on principles and practices that provide an antidote to mere fashion.

> Rigorous theology delves into mysteries in ways that are beyond most of us. For example, in her essay, "Creed or Chaos," Dorothy Sayers argues that Christianity's advantage is that it gives value to evil and suffering. Christianity asserts that "perfection is attained through the active and positive effort to wrench real good out of a real evil." This is a complicated thought most of us could not come up with (let alone unpack) outside of a rigorous theological tradition.

There is a slight confusion between religion and theology here: the two words are not synonyms. Overlooking that, Brooks here offers a fourfold definition: a belief which is systematic, rational, supra-contextual, and which approaches mysteries. Systematic beliefs can be codified in texts, which makes them publicly and objectively accessible. Rational beliefs respect the structures of the universe and of the human mind, and assess various explanations in light of these. Such beliefs provide a breakwater against the tides of conformity which sweep through societies on a regular basis. And such beliefs admit that there is possibly a limit to the powers of human reason, which means that being rational is being willing to admit the possibility of mystery.

Although religion is not morality - atheists can be very moral - there is some connection between religion and morality. Brooks notes this connection:

> Rigorous codes of conduct allow people to build their character. Changes in behavior change the mind, so small acts of ritual reinforce networks in the brain. A Mormon denying herself coffee may seem like a silly thing, but regular acts of discipline can lay the foundation for extraordinary acts of self-control when it counts the most.

History will force us eventually to judge the net contributions of various religions. Some will have given benefits to the human race; others will have given misery. Just as no human being is morally pure - we all commit both good and bad actions - so no religion will be found pure. Even the best religions will have committed some evil, and even the worst religions will have given some benefit. No religion is perfectly evil, just as God is perfectly good. To judge a religion, therefore, is not to judge people, nor is it to judge God. We will find, in the end, that just as all humans are equal, not all religions are equal.

12.6 April

12.6.1 Science and Truth (2011-04-25 08:00)

Among modern (as opposed to post-modern) thinkers, the natural or observational sciences are taken as paradigmatic for empirical knowledge. Among those whose thought is formed by the indirect influence of John Locke and David Hume, the input of the five senses, disciplined by the "scientific method," is treated - explicitly or implicitly - as the fount of rational knowledge.

Inasmuch as philosophical influences, when they have decayed into cultural influences, are transmitted in a confused and garbled manner, it follows that many of those most influenced do not even know the names John Locke or David Hume, are unaware of the unresolved tensions

between Lockean empiricism and Cartesian rationalism, and treat the "scientific method" as an undisputed axiom - having never learned that even Isaac Newton, now an icon for the natural sciences, directly contradicted the more common forms the "method" in his famous statement about not making hypotheses. Thus I justify my use of otherwise superfluous quotation marks around the phrase.

Yet it is precisely those icons - which like many icons, are emptied of actual content in the process of being used as an icon - who would most undermine this notion of disciplined *a posteriori* thought being the paradigm for certain knowledge - again, the irony that Cartesian certainty would be found through Lockean methods! - Newton, Boyle, Kepler, Copernicus, Faraday, etc. They were far less certain of themselves and their thoughts than their disciples seem to be.

Or, to bring the matter up to date, as Karl Popper wrote:

> All scientific statements are hypotheses, or guesses, or conjectures, and the vast majority of these conjectures ... have turned out to be false. Our attempts to see and to find the truth are not final, but open to improvement; ... and our knowledge, our doctrine, is conjectural; ... it consists of guesses, of hypotheses, rather than of final and certain truths.

The assumption that modern science is a finalized and certain method to gain knowledge is not universally embraced by those very individuals who are allegedly the source of that assumption. The writings of these founders of modern science clearly state their understanding that the conclusions of observational science were not certainties, and that there were other sources of knowledge in addition to such natural sciences.

12.6.2   A Brief History of Nothing (2011-04-23 18:44)

What do you know about nothing? Philosophers have been writing about nothing in particular for a long time.

Among the pre-Socratics (around 500 B.C.), Leucippus and Parmenides argued about whether a true vacuum was possible. This was an embryonic form of the discussion of nothing.

One of the earliest philosophers to write about nothing was Fridugis (also spelled Fredegis or Fredegisus), who lived in the early 800's. He was a student of the noted philosopher Alcuin, and part of the revival of learning and intellectual life which occurred during the reign of Karl the Great (Charlemagne). He died in 834 A.D.

His major work is entitled "On Nothing and Darkness," which hints already at the notion that as darkness is a lack of light, so nothing is a lack of something. Fridugis recognized that the investigation of nothing is, at least in part, a linguistic investigation. We are led, or misled, by the fact that "nothing" is a noun, and as such, represents a person, place, thing, or idea. So we are compelled to conclude that nothing is something:

> This is the nature of the question: "Is nothing something or not?" If one replies: "It seems to me that nothing exists," the very negation of it which he assumes to be the case forces him to admit that nothing is something in that he says: "It seems to me that nothing exists." This statement is such as if he were to say: "It seems to me that nothing is something." If it seems to be something how can it appear not to exist in some way? Consequently it remains that it seems to be something.

Frigudis proceeds along grammatical lines, establishing that "nothing" is a noun, and therefore - following Aristotle - the name of something, i.e., the word "nothing" names some thing. Taking this as sufficiently demonstrated, Frigudis goes on to ask what type of thing nothing is. It is, he writes, "something great," because, given the fact that the known universe was called forth *ex nihilo* (out of nothing),

> those which are the first and foremost among creatures have been created out of nothing. Therefore, nothing is something great and remarkable, and its magnitude from which so many and such noble things have been produced cannot be grasped.

Nothing, then, according to Frigudis, is the source of everything, and so, in some way, everything must have been contained, even if only in an embryonic state, in nothing. This eerily anticipates remarks written by a thousand years later Hegel.

Between Frigudis and Hegel lived Albert of Saxony in the 1300's. He carried out a rather even-handed exploration of nothing, neither affirming nor denying much, but examining what nothing might imply or entail.

In several different books in the early 1800's, Hegel devotes a number of pages to the topic of nothing:

> Pure being, as it is mere abstraction, is therefore the absolutely negative: which, in a similarly immediate aspect, is just nothing. Hence was derived the second definition of the absolute: the absolute is nothing. In fact this definition is implied in saying that the thing-in-itself is the indeterminate, utterly without form and so without content - or in saying that God is only the supreme Being and nothing more.

(Hegel addresses here the philosophical system of Kant, in which "the thing in itself" is an object before it is processed by cognition of the mind, which is to say before it is placed into time and into space. The thing in itself lacks any of the properties which an object can have only if it is in time and in space - which is to say that the thing in itself is undefined and indeterminate.) Hegel writes that this "pure Being" is

> in its indeterminate immediacy equal only to itself, and yet not differentiated in respect to other, and has no differentiation inside itself, nor towards anything external.

Any determination or content, which would posit any form of distinction or contrast, cannot be found in this "pure Being," because it would no longer be pure. It would no longer be

> maintained in its purity. It is pure indeterminacy and emptiness. - There is nothing to be perceived in it, if one can speak here of perception; or it is only pure empty perception itself.

And so nothing appears as the sole ingredient or content of pure Being!

> Being, indeterminate immediacy, is in fact nothing, and no more nor less than nothing.

Hegel arrives at nothing by examining Being, just as Fridugis arrived at everything by studying nothing.

A century after Hegel, the philosopher Martin Heidegger researched nothing, and found it to be not merely a question in philosophy, but rather one of the central and foundational questions in philosophy, and specifically in that branch of philosophy known as metaphysics. Heidegger notes that modern science unwittingly includes nothing in its self-stated objects of study:

> What is to be investigated is what-is — and nothing else; only what-is — and nothing more; simply and solely what-is — and beyond that, nothing.

Yet the study of nothing requires a different approach than the study of something. Different methods will be required.

> we shall endeavour to enquire into Nothing. What is Nothing? Even the initial approach to this question shows us something out of the ordinary. So questioning, we postulate Nothing as something that somehow or other "is" — as an entity (Seiendes). But it is nothing of the sort. The question as to the what and wherefore of Nothing turns the thing questioned into its opposite. The question deprives itself of its own object.

Heidegger's exploration of nothing is perhaps the high point of such studies. He will explain to us that emotion has a role in informing us about nothing. He contrasts fear and anxiety (*Angst*). Fear has an object: we are afraid of something. But anxiety is when we have a sense of fear about nothing. So it is anxiety, in contrast to fear, which leads us to learn about nothing.

Following Heidegger, Jean-Paul Sartre took up the study of nothing. Contrasting Heidegger's investigation of nothing with Hegel's, Sartre writes:

> Heidegger, while establishing the possibilities of a concrete apprehension of Nothingness, never falls into the error which Hegel made; he does not preserve a being for Non-Being, not even an abstract being. Nothing is not; it nihilates itself.

The reader is advised to study the works of Hegel, Heidegger, and Sartre, from which he can learn much about nothing.

12.6.3 The Limits of Reason (2011-04-21 07:53)

What can the human mind do? What can it not do? These questions have long engaged philosophers. The first question, however, tempts them to make ever-grander claims, while the second calls them to a humility and sobriety which doesn't flatter the collective human ego. Of the many who've dealt with these questions, Immanuel Kant has achieved breakthroughs in assessing the capabilities of human knowledge. It is essential to examine Kant's writings themselves, rather than summaries written by others. Here, we will make do with such second-hand overviews, trusting that you, dear reader, will then explore Kant's texts.

Kant is understood against the historical background in which the two main currents of thought were Cartesian rationalism and Lockean empiricism. The former took mathematics as paradigmatic for a priori knowledge and certainty; the latter was concerned about the process by which

gathering sense-data into perceptions could be formalized into something like the modern observational sciences. In opposition to each other, the philosophers had to then choose either to embrace metaphysical certainty at the cost of reliable knowledge of the perceivable world, or to embrace observational realities at the cost of any other form of reality. Dinesh D'Souza notes, regarding the latter view especially, that empiricists

> may not recognize it, but there is a huge assumption being made here. These men simply presume that their rational, scientific approach gives them full access to external reality.

Which is to say, having sacrificed Cartesian metaphysics for the sake of empirical natural sciences, they may find that they have gotten a bad deal: this scientific method may not yield as much as they had hoped. Isaac Newton, after, warned against framing hypotheses - a foreshadowing perhaps of Kant's more thorough critique. Whether through a naive direct realism, or a more nuanced indirect realism, or even a radical empiricism, a claim is made about the mind's ability to gather information about the world.

> Before Kant, most people simply assumed that our reason and our senses give us access to external reality — the world out there — and that there is only one limit to what human beings can know That limit is reality itself. In this view, still widely held by many in our society, human beings can use the tools of reason and science to continually find out more and more until eventually there is nothing else to discover. The Enlightenment fallacy holds that human reason and science can, in principle, gain access to and eventually comprehend the whole of reality.

Kant's *Critique of Pure Reason* was published in 1781, and urged a humility in making claims about what human reason can discover.

> In fact, he argues, there is a much greater limit to what human beings can know. In other words, human reason raises questions that — such is the nature of our reason — it is incapable of answering. And it is of the highest importance that we turn reason on itself and discover what those limits are. It is foolishly dogmatic to go around asserting claims based on reason without investing what kinds of claims reason is capable of adjudicating. Reason, in order to be reasonable, must investigate its own parameters.

It is human nature to ask questions. We will ask many more questions than our reason can answer. We therefore can create two categories of questions: those answerable by human reason, and those not. If a question cannot be answered by human reason, we might then go on to ask whether it can be answered at all - and if so, how.

> Kant begins with a simple premise: all human knowledge is based on experience. We gain access to reality through our five senses. This sensory input is then processed through our brains and central nervous systems. Think about it: every thought, even the wildest products of our imagination, are exclusively based on things that we have seen, heard, touched, smelled, or tasted. If we imagine and draw creatures from outer space, we can give them four eyes and ten legs, but ultimately we have no way to conceive or portray them except in terms of our human experience. It is an empirical fact that our five senses are our only lenses for perceiving reality.

More accurately, Kant writes that all knowledge begins with experience. Even that knowledge which has no basis in experience (Cartesian a priori mathematical certainties) arises in the course of experience. So we all knowledge begins with experience, but some knowledge is based on experience.

> Now Kant asks a startling question: how do we know that our human perception of reality corresponds to reality itself? Most philosophers before Kant had simply taken for granted that it does, and this belief persists today. So powerful is this "common sense" that many people become impatient, even indignant, when Kant's question is put to them. They act as if the question is a kind of skeptical ploy, like asking people to prove that they really exist. But Kant was no skeptic: he saw himself as providing a refutation of skepticism. He knew, however, that to answer skepticism one has to take the skeptical argument seriously. The way to overcome skepticism is by doing justice to the truth embodied in it. Kant's goal was to erect a dependable edifice for knowledge on the foundation of extreme skepticism.

Like Descartes, Kant finds a constructive use for skepticism. Like Hume, Kant asks if we have any justification for positing whatever ontology we may embrace. Unlike Thomas Reid, Kant denied that common sense provided enough justification.

> Kant's question about the reliability of human perception has been the central preoccupation of Western philosophy since Descartes. How do we know what we claim to know? Locke had famously pointed out that material objects seem to have two kinds of properties, what he called primary properties and secondary properties. Primary properties are in the thing itself, whereas secondary properties are in us. So when we perceive an apple, for example, its mass and shape are part of the apple itself. But Locke ingeniously pointed out that the redness of the apple, its aroma, and its taste are not in the apple. They are in the person who sees and smells and bites into the apple. What this means is that our knowledge of external reality comes to us from two sources: the external object and our internal apparatus of perception. Reality does not come directly to us but is "filtered" through a lens that we ourselves provide.

Kant writes to the effect that the human mind provides a great deal of structure to what we perceive as reality. The structuring process begins with space and time - two products of the mind. What we naively perceive as one object's being "there and then" and another object's being "here and now" is merely our five senses importing information about the world, but rather largely a creation of our mind. Methodically internalizing the notion that time and space are not facts about the world, but tools created by our mind for the purpose of organizing sense-data, will change our assessment of observational natural sciences regarding their ability to give us information about the world.

> Philosopher George Berkeley radicalized this mode of inquiry: "When we do our utmost to conceive the existence of external bodies, we are all the while only contemplating our own ideas." Berkeley's argument was that we have no experience of material objects that exist outside the perceptual apparatus of our mind and senses. Both the primary and the secondary qualities of objects are perceived in this way. We don't experience the ocean, we experience only our image and sound and feel of the ocean. Berkeley famously concluded that we have no warrant for believing in a material reality existing independent of our minds!

Although Berkeley's idealism can be seen as the organic consequence of the epistemology of his era, it would seem to Kant to be perhaps equally unwarranted: positing the existence of physical objects in the world requires justification just as much as positing the lack of their existence.

> Hume completed Berkeley's skeptical argument by applying it to human beings themselves. We have no experience of ourselves other than our sensations and feelings and thoughts. While we know that sensations and feelings and thoughts exist, we have no basis for postulating some "I" behind them that is supposed to be having those reactions.

Hume's radical empiricism, while a direct descendant of Locke's thought, took the matter to this arresting extreme. Berkeley had denied the existence of a material external world; Hume denied the existence of a self or perceiving mind. All that remained, then, was a collection of sensations, corresponding to no objects, and perceived by no subject.

> Kant conceded Berkeley's and Hume's point that it is simply irrational to presume that our experience of reality corresponds to reality itself. There are things in themselves — what Kant called the noumenon — and of them we can know nothing. What we can know is our experience of those things, what Kant called the phenomenon.

At first blush, Kant is saying that not only can we not know what the external world is like, but also that we cannot even know if it exists. He embraces the extremes of Berkeley and Hume, but only as a starting-point: the constructive use of skepticism.

> Our senses place absolute limits on what reality is available to us. Moreover, the reality we apprehend is not reality in itself. It is merely our experience or "take" on reality. Kant's point has been widely misunderstood. Many people think that Kant is making the pedestrian claim that our senses give us an imperfect facsimile or a rough approximation of reality.

Not only would Kant claim that our sense limit what we can know, but also that the structure of the human mind limits knowledge as well. We can, for example, know or imagine only objects in space and time, and only in our particular type of space and time. It is important to understand what Kant is not writing: he is not dealing with, for example, the limitations on eyesight, that we can't see further away, or with more magnification, or beyond the spectrum of visible light. That's not his point - those are mere differences of degree. He is speaking about differences of kind - knowledge which is not only impossible for us to gain, but which is in principle impossible.

> Kant's argument is that we have no basis to assume that our perception of reality ever resembles reality itself. Our experience of things can never penetrate to things as they really are. That reality remains permanently hidden to us. To see the force of Kant's point, ask yourself this question: how can you know that your experience of reality is in any way "like" reality itself? Normally we answer this question by considering the two things separately. I can tell if my daughter's portrait of her teacher looks like her teacher by placing the portrait alongside the person and comparing the two. I establish verisimilitude by the degree to which the copy conforms to the original. Kant points out, however, that we can never compare our experience of reality

to reality itself. All we have is the experience, and that's all we can ever have. We only have the copies, but we never have the originals. Moreover, the copies come to us through the medium of our senses, while the originals exist independently of our means of perceiving them. So we have no basis for inferring that the two are even comparable, and when we presume that our experience corresponds to reality, we are making an unjustified leap. We have absolutely no way to know this.

What we know, then, as the laws of chemistry or physics, are actually psychological laws about the functioning of the mind. Given that I know only my perception of atoms or stars, the laws which I think regulate atoms and stars actually regulate only my perceptions of atoms and stars.

> It is essential, at this point, to recognize that Kant is not diminishing the importance of experience or of the phenomenal world. That world is very important, if only because it is all we have access to. It constitutes the entirety of our human experience and is, consequently, of vital significance for us. It is entirely rational for us to believe in this phenomenal world, and to use science and reason to discover its operating principles. A recognized scientist and mathematician, Kant did not degrade the value of science. But he believed science should be understood as applying to the world of phenomena rather than to the noumenal or "other" world.

We understand that Kant is not denying the existence of an external world - he pointed out that we have no justification for denying its existence - but rather he is demonstrating the inability of reason to know about that world. Kant ultimately disagrees with Berkeley. Nor is he saying that we can know nothing about the external world - he is saying that our reason can know nothing about it. He leaves the door open for other types of knowledge.

> For Kant, the noumenon obviously exists because it gives rise to the phenomena we experience. In other words, our experience is an experience of something. Moreover, Kant contends that there are certain facts about the world—such as morality and free will—that cannot be understood without postulating a noumenal realm. Perhaps the best way to understand this is to see Kant as positing two kinds of reality: the reality that we experience and reality itself. The important thing is not to establish which is more real, but to recognize that human reason operates only in the phenomenal domain of experience. We can know that the noumenal realm exists, but beyond that we can know nothing about it. Human reason can never grasp reality itself.

The warning is worth repeating, however, we have not yet looked directly at the texts written by Kant; we have here quoted from a summary written by Dinesh D'Souza, who teaches at Stanford University. We have, in fact, seen that his summary needs a few small correctives along the way. This is the perpetual problem confronting those who would produce an accessible and popular explanation of a philosopher's works: Kant's text are hundreds of pages long, written with bizarre neologisms and interminable sentences. It is necessary to produce some type of popular summary, because these books will be forever inaccessible to some readers; yet while it is necessary to do so, it is also to some extent impossible.

12.7 March

12.7.1 The Rise of Modern Science (2011-03-25 06:18)

We have learned that the word "modern" can be applied to concepts which may be several centuries old - Descartes founded "modern" philosophy around the year 1600 A.D., give or take a few decades. What we call the "modern" natural sciences are likewise the result of activities a few hundred years ago. We can gain insight, and a few surprises, into the essence of such observational sciences by reviewing their inception.

Thomas Aquinas, publishing around 1250 A.D., wrote that the task of the scholar was

> to manifest the truth that faith professes and reason investigates, setting forth demonstrative and probable arguments, so that the truth may be confirmed.

Aquinas is offering several foundational principles: reason investigates, reason formulates demonstrative arguments, reason formulates arguments from probability, and reason finally confirms truth. Although these principles are necessary for modern science, they are not sufficient. A few more principles are needed.

From Mumbai (Bombay), India, Dinesh D'Souza writes that, as part of the foundation for modern observational sciences, we also need

> the presumption, quite impossible to prove, that the universe is rational. Scientists today take for granted the idea that the universe operates according to laws, and that these laws are comprehensible to the human mind.

These same axiomatic notions are phrased differently by various scientists, but remain effectively the same. Thus James Trefil writes

> that the laws of nature we discover here and now in our laboratories are true everywhere in the universe and have been in force for all time.

Steven Weinberg, who earned the Nobel Prize in physics, writes "that there is order in the universe," because "we have found that the laws, the physical principles, that describe what we learn become simpler and simpler," and "the rules we have discovered become increasingly coherent and universal." Weinberg is saying that the further we proceed with rational investigation of reality, the more we uncover a logical structure in the physical universe:

> There is a simplicity, a beauty, that we are finding in the rules that govern matter that mirrors something that is built into the logical structure of the universe at a very deep level.

The patterns which reason discovers in physics and chemistry are mathematical. Mathematics, as an extension of logic, is at the core of our notion of science. As D'Souza writes:

> The laws that govern the universe seem to be written in the language of mathematics.

Nobel Prize winning physicist Richard Feynman noted that "why nature is mathematical is a mystery," and "the fact that there are rules at all is a kind of miracle." The universe could have been different: it could be irrational and illogical - it could have been so structured that algebra would be of no use whatsoever in any physical or practical endeavor.

The belief "in the fundamental rationality of the cosmos," as D'Souza phrases it, and the "belief that rationality of the universe is mirrored in the rationality of our human minds," are so inculcated into the modern natural science that any hypothesis that calls these principles even partially into question - as we find in some speculations about quantum physics - is regarded as a shocking yet fascinating idea. Those tentative statements about quantum physics cast into high relief the how central the notion of a rational universe is in observational science.

Francis Bacon, author of a translation and commentary on the Psalms, is often cited as the formulator of method for the natural sciences. Inasmuch as empiricism ultimately includes some reference to probability, Bacon echoes the formulation by Aquinas about "demonstrative and probable arguments." In any case, it is worth realizing that the notion of a rationally structured universe is central, not only to the scientific work of Bacon, but also to each of the following:

> Copernicus, Kepler, Brahe, Descartes, Boyle, Newton, Leibniz, Gassendi, Pascal, Mersenne, Cuvier, Harvey, Dalton, Faraday, Herschel, Joule, Lyell, Lavoisier, Priestley, Kelvin, Ohm, Ampere, Steno, Pasteur, Maxwell, Planck, Lemaitre, and Mendel.

The list could be much longer, and by reference include anyone who properly bears the label "scientist." As Einstein formulated it: "God does not play dice with the universe."

12.8   February

12.8.1   The Universe is a Giant Brain! (2011-02-10 19:07)

According to G.W.F. Hegel, the universe and all its contents is a sort of mind: Absolute Truth in the process of self-knowledge. Yes, this is kind of spacey. Whether we call it a brain or a mind is a little murky, because for Hegel, the distinction between mental substance and physical substance gets blurred when we realize that all those physical objects out there are projections of the universal mind - projections which that mind in turn examines, hence the concept of self-knowledge. Inasmuch as we humans, who of course are also projections of that cosmic consciousness, exist in time, that self-knowledge is perceived by us as a process, self-discovery. And so the history of the world is a record of the universal mind examining itself, and in turn revealing itself, ever more clearly. There is something optimistic about Hegel's view of history:

> Philosophical history not only apprehends the principle of a nation from its institutions and destinies and develops the events from that principle, but considers especially the universal World-Spirit, how, in an inner context, through the history of nations in their separate appearances and their destinies, it has passed through the various stages of its formation. It exhibits the Universal Spirit in its accidents so that shape or externality is not developed conformably to its essence. Its higher representation is its shaping in a simple spiritual form.

> (Every nation does not count in world history. Each has its point, its moment, according to its principle. Then, as it seems, it departs for good. Its turn does not come by chance.)

So each nation takes a turn being the center of world history, at a specific moment, when that culture's character and nature plays a crucial role in the process of revealing the world-spirit to itself. Thus, nations like Persia, Greece, Egypt, and Rome had their moments of glory, in a precisely logical order, as each represented a step past the previous one and step toward the next one.

13. 2010

13.1 December

13.1.1 Confucius (2010-12-16 13:08)

Without question, the most famous and influential Chinese philosopher is Confucius, who lived from 551 B.C. to 479 B.C., and shaped social and philosophical thought for several centuries. Typifying non-Western thought, he places less emphasis on logical and mathematical topics and methods; his metaphysical thought is driven more by social and ethical concerns than by rationalist or empiricist considerations. Central in his thought is the Chinese word "Tian" which can be translated variously, but names a Supreme Being in the universe. Jeff Richey writes:

> Consistent throughout Confucius' discourses on Tian is his threefold assumption about this extrahuman, absolute power in the universe: (1) its alignment with moral goodness, (2) its dependence on human agents to actualize its will, and (3) the variable, unpredictable nature of its associations with mortal actors.

It is obvious that this cosmology will have ethical implications:

> While Confucius believes that people live their lives within parameters firmly established by Heaven — which, often, for him means both a purposeful Supreme Being as well as 'nature' and its fixed cycles and patterns — he argues that men are responsible for their actions and especially for their treatment of others. We can do little or nothing to alter our fated span of existence but we determine what we accomplish and what we are remembered for.

Here begin, then, the famous social directives for which Confucius is known. His moral-political propositions are not the inductive products of experience, but rather rationally founded on his ontology, which in turn, however, may possibly be the product of empirical induction. In any case, however, the basis for his ethics is immediately his theodicy, and at most only mediately any *a posteriori* considerations.

13.1.2 Just War Theory - Then and Now (2010-12-14 15:39)

A series of debates in the Middle Ages gave rise to what we call "Just War Theory": an attempt answer the question about when, if ever, a nation is morally justified in engaging in warfare. The debate was between the pacific half of Christianity, which claimed that violence was never permissible, even in defense of self or others, and the moderate half of Christianity, which argued that combat would be morally permissible if it were purely defensive. The debates were not abstract: the pressing politics of the day were shaped by the Islamic invasion of Spain in 711 A.D., of France in 732 A.D., and of southern Italy in the early 800's. (The Crusades, originally envisioned as a defensive counter-attack against the home base of these Muslim armies, would being around 1095 A.D.)

The debates went into great detail about what might or might not be considered ethical conduct in warlike situations. Jonathan Barnes, at Oxford University, writes that

the question of what part the clergy might play in warfare looms large in medieval discussions; but its interest is purely antiquarian and theological.

The details of what a priest in Europe in the middle ages might be allowed to do in the military could easily appear as an irrelevant discussion to the modern reader, at until Alfred Freddoso writes that

the medievals generally argued that clerics are forbidden to bear arms or to kill even in a just war. Given the powerful pacifist tendencies in current Christian thought, it would hardly be shocking if someone were to ask why these medieval arguments might not apply to all Christians, nonclerics as wells as clerics, with the result that Christian pacifism could be viewed as a natural development of just-war theory. The topic is thus far from antiquarian.

It seems that medieval debates about pacifism and just war theory will always be relevant to this world; wars will always bring cause philosophers to pose these questions.

13.1.3 Different Philosophers, Similar Conclusions (2010-12-11 09:48)

Immanuel Kant and Augustine of Hippo were two very different men. Augustine did his writing around 400 A.D.; Kant published his most famous book in 1761. Augustine was a native of Africa's north coast on the Mediterranean Sea; Kant lived in Germany's northern coast on the Baltic Sea. Augustine was born a pagan and became a Christian; Kant was a Christian who became a heterodox theist. Augustine expressed himself in Latin and Greek; Kant wrote in German.

Yet both of them became know for similar philosophical viewpoints. They emphasized the limits of human reason.

It is always a temptation to imagine that any philosophical question can be answered by reason. Rarely does it happen that a philosopher has the humility to write that he has come to the limits of human reason, that it is simply beyond the power of human thought to answer the question at hand.

Those philosophers who succumb to this temptation end up going farther in their conclusion than their logic will actually allow.

Kant and Augustine are among the very few who were cautious and sober enough to draw a limit to the powers which they attribute to the human mind. Their conclusions are perhaps less exciting, less adventurous, and less fun than those philosophical books which venture onto intellectually thinner ice. But their writings seem to have a longer shelf-life than some others.

A few of Kant's immediate followers went beyond the limits he recommended, making daring statements in their philosophies. While they were interesting and popular for a time, these men, e.g., Mr. Fichte and Mr. Schelling, are now less studied.

Augustine and Kant remain philosophical classics, in part because of their moderation: those who walk on thin ice may get the thrills, but those who stand on the more solid ground generally have longer lives.

13.1.4 When the Effect Comes before the Cause? (2010-12-01 08:25)

In everyday life, we generally think of causes existing before their effects. But as along ago as Aristotle, philosophers who thought carefully discerned various definitions of "cause" - including some causes which come after their effects.

Consider: he got his umbrella because it was going to rain. The rain, which had not yet occurred, caused him to fetch his umbrella.

Or again: you are studying so that you will get a good grade at the end of the semester. Getting a good grade (in Aristotle's terminology, a "final cause") at some point in the future causes you to study now.

Other philosophers would argue, however, that it is the current expectation of rain which causes him to get his umbrella, and the current desire for grades which causes you to study. On this reading of the events, then, the causes do not at all lie in the future, but rather in the present.

Here we see yet another counter-intuitive understanding of "cause": a cause which is simultaneous to its effect. Again violating the everyday understanding of causes as temporally prior to their effects, we see here causes which are logically prior but temporally coextensive to their effects. In Aristotle's terms, these are often "material" or "formal" causes.

One of the most central of such cases is the question of what keeps objects in existence, or what keeps the universe in existence. Martin Heidegger wrote that one of the core questions of metaphysics and of philosophy is this: "Why is there something rather than nothing?"

In this sense, then, when we ask, "what is the cause of the universe?" we are asking not about what came before the universe in time, but rather what is sustaining the existence of the universe over time — what prevents the universe from simply disappearing altogether? This question lies on the boundary between physics and philosophy, and

> The English philosopher C.D. Broad once noted that "the nonsense written by philosophers on scientific matters is exceeded only by the nonsense written by scientists on philosophy."

Edward Feser (University of California, Santa Barbara) goes on to point out that, in this matter of writing about the cause of the universe,

> from Aristotle to Aquinas to Leibniz to the present day, most versions of the First Cause argument have not supposed that the universe had a beginning in time.

So it doesn't matter, when we are asking about the cause of the universe in this way, whether or not the universe had a specific beginning point in time or not. Even if the universe were to stretch infinitely back into time, that doesn't change the question about what keeps it in existence. However, if we ask about what Aristotle calls the "efficient cause," the universe's beginning in time, or lack thereof, would make a great deal of difference. The efficient cause would be the last event prior to the effect itself which led inexorably to the effect.

As you can see, keeping track of these various notions of "cause" will be a lot of work. To muddy the waters still further, Feser writes about Aristotle, Aquinas, Leibniz, and others, that

> their claim is rather that even if the universe were infinitely old, it is still the sort of thing that might in principle not have existed at all. That it does exist therefore

requires explanation, and this explanation cannot lie in some other thing that might in principle have failed to exist, since that would just raise the same problem again. Accordingly, the explanation can be found only in something that could not have failed to exist even in principle — something that not only does not have a cause, but couldn't have had one, precisely because (unlike the universe) it couldn't in theory have failed to exist in the first place. In short, any contingent reality, like the universe, must depend upon a necessary being.

Even with four — or more — possible definitions of "cause" floating around, physicists and philosophers tend to agree on at least one principle: nothing can cause itself. But even that relatively obvious conclusion requires some complex argumentation, precisely because of the multiple definitions of causation. It needs to be shown true several times, for each of the several definitions:

> The reason is that the very idea of something causing itself is self-contradictory: If a thing were to cause itself, it would have to exist prior to itself, in which case it would already exist and not need to be caused. ("Prior" need not entail "earlier in time"; the same incoherence arises even if we think of a cause and its effect as simultaneous, and interpret "prior to" as meaning "more fundamental than.")

This skills is necessary for every rational thinker: to be good at distinguishing between what is temporally prior and what is logically prior. If we confuse those two, then we will make ourselves look foolish by means of the nonsense we write.

13.2 November

13.2.1 Where Are You, When You're Not Inside Time? (2010-11-17 08:11)

Different philosophers have assigned different explanations to what it means to be outside of time. Any of these is very difficult to understand, and even more difficult to imagine. In any case, the idea of not being in time is non-intuitive or even counter-intuitive. Immanuel Kant wrote

> It is a common expression, used chiefly in pious language, to speak of a person who is dying as going out of time into eternity.

This statement requires us, in turn, to consider the definition of "eternity" — often conceived as endless time. But this common notion of eternity quickly collapses: if you're leaving time altogether, then you're not in endless time, you're in no time at all.

> This expression would in fact say nothing if eternity is understood here to mean a time proceeding to infinity; for then the person would indeed never get outside time but would always progress only from one time into another. Thus what must be meant is an end of all time along with the person's uninterrupted duration; but this duration (considering its existence as a magnitude) must be meant as a magnitude wholly incomparable with time (*duratio noumenon*), of which we are obviously able to form no concept (except a merely negative one).

Yet another puzzle arises: if the person's existence "endures" the fact that he left time, how do we define "endure" — which is itself a temporal concept? We want to say that the person continues to exist after leaving time - but "continue" is a chronological notion! How can we say that the person still exists, when "still" makes no sense without reference to time?

> Here we have to do (or are playing) merely with ideas created by reason itself, whose objects (if they have any) lie wholly beyond our field of vision; although they are transcendent for speculative cognition, they are not to be taken as empty, but with a practical intent they are made available to us by law-giving reason itself.

Kant reminds us here that in contemplating existence outside of time, we are at the very limit, or perhaps past the limit, of what human reason can grasp. His famous distinction between pure reason and practical reason comes into play here. On the level of pure reason, we can know little or nothing about the process of leaving time, or about exactly what it even means to leave time or be outside of time. On the level of practical reason, however, Kant informs us that we have license to follow the evidence and form hypotheses about this topic, because such working hypotheses are necessary for practical (which Kant often means moral or ethical) decisions.

A slightly different topic is, rather than an individual person leaving time, the notion that time itself ends. Again we are faced with puzzling imaginations of what this might mean. Grappling with this question in an eschatological context, Kant writes that the end of time would mean

> that henceforth there shall be no alteration; for if there were still alteration in the world, then time would also exist, because alteration can take place only in time and is not thinkable without presupposing it.

Outside of time, there can be no change, for example, I cannot stand now and sit then, because there is no "now" and no "then" — presumably, I would always be both standing and sitting. Our difficulty, or inability, to even imagine or conceptually frame such things results, Kant would argue, from the fact that our minds are structured around time, or that time is the structure which our minds use to form concepts. If a man were born blind and had never seen colors, it would be difficult for him to imagine blue or green. Our minds must always structure concepts within the framework of time, and so it is difficult for us to create concepts in any other way, or to create any other kind of concept.

> Now here is represented an end of all things as objects of sense - of which we cannot form any concept at all, because we will inevitably entangle ourselves in contradictions as soon as we try to take a single step beyond the sensible world into the intelligible.

Kant writes that is perhaps for the purposes of practical hypotheses that the concept of eternity (in the sense of an infinite span of time) is used; clearly, being in eternity and being outside of time are two very different things. Eternity is, however, perhaps somewhat easier to imagine, and forms a ready concept which works as well as "being outside of time" for practical purposes. This may be somewhat like our habit of sloppily blurring the distinction between weight and mass in the butcher shop: I might get a pound of pork, or a half kilogram of pork. A rude violation of physics, but for practical purposes an equivalent measure.

13.2.2 **Varieties of Logic** (2010-11-03 08:43)

Logic comes in many varieties. Modern logicians have learned to vary the axioms, the definitions, postulates, etc., to create many different formal systems. The same is true of geometry, as we know that there are many types of non-Euclidean geometry generated in this same way - for geometry simply is logic clothed in multidimensional shapes.

There are more sophisticated and subtle ways of forming new logics. Hieronymous Pardus (often called "Pardo") developed an interesting logic. He came from Spain and did some work in Paris between 1481 and 1502. John Longeway describes Pardo's logic as

> defending a wholistic account of the meaning of propositions rather than building up their meanings out of the independently established meanings of their parts.

Traditionally, we consider a proposition like "the chair has four legs" as having a meaning which is assembled by adding the meanings of individual words like "chair" and "four" and "legs" — but Pardo challenges us to grasp the entire proposition as a unit, as atomic, as simple not complex. Offering, however, a slightly different interpretation of Pardo, Professor Nuchelmans at the University of Leiden put it this way:

> the signification of the whole complex was commonly held to be of a compositional nature and to be determined by the signification of its parts. As Pardo put it, only incomplex expressions have been given conventional meanings in a primary and immediate way; a propositional complex, such as Homo est animal, on the other hand, has been destined to signify its meaning only in a mediate, consequential and secondary manner, since its signification can be derived from the significations of the incomplex parts.

Let's let Pardo speak for himself, then. He wrote:

> For the truth of a proposition in which there is distribution is recognized by means of a conjunctive descent; and that of a proposition in which there is a term suppositing determinately is recognized by means of disjunctive descent; and of a term suppositing merely confusedly, by means of the disjunct or conjunct descent. For what else is it for a term to be distributed, but for it to be taken for its significata conjunctively, and for a term to supposit determinately, but for it to be taken for its significata disjunctively, and for a term to supposit merely confusedly, but for it to be taken for its significata disjunctly or conjunctly? Therefore, to explicate the way of taking the term (acceptionem explicare) is to descend. Thus, if descent is negated, nothing reliable remains for the cognition of the truth of a proposition on the basis of supposition.

These are murky waters: the reader is advised to re-read the above paragraphs several times slowly. In any case, there is sufficient evidence to show that Pardo was a powerful and creative thinker, capable of executing sophisticated and intricate maneuvers in the subtle landscape of systematic logic.

Sadly, this era of technical sophistication in logic and mathematics faded away: Longeway writes:

> I found the excitement at an end when the Renaissance began.

Popular historians have often painted the Renaissance as a time a great intellectual activity. In reality, the natural and mathematical sciences both languished, and philosophy was reduced to trite slogans, during this era. Investigating logical theory during the Renaissance leaves Longeway with the suspicion

> that there is little pioneering work to do. What bothered me was the lack of any real semantic theory in these thinkers. Nuchelmans does what he can by them, but despite every effort at respect, in the end he points out "the general neglect" in Renaissance thought "of those fundamental problems to which late-scholastic philosophers gave pride of place."

Despite the intellectually vacuous Renaissance which constitutes the gap between them, Medieval and modern symbolic logic share a sophisticated subtlety, and have much to say to each other.

13.2.3   Accident and Essence (2010-11-03 07:45)

In philosophy, essence is the attribute or set of attributes that make an object or substance what it fundamentally is, and which it has by necessity, and without which it loses its identity. Essence is contrasted with accident: a property that the object or substance has contingently, without which the substance can still retain its identity. Emile Brehier writes:

> The sharp distinction between essential and accidental attributes make possible a clear statement of the problem of universals. For universals, whose reality was the subject of speculation, are nothing but the genera and species - for example, "animal" and "man" — which are essential attributes of an individual like Socrates.

This notion was first clearly stated by Aristotle, although it was doubtless present earlier, and it was refined to its most precise and modern form during the Middle Ages. Aristotle dealt with this topic in several of his books, including one called *Categories*:

> the *Categories*, the study of attributes, cannot refer to things (since *res non praedicatur*) but only to words as signifiers of things. Hence the solution, imbued with the spirit of Aristotle, of the problem of universals: genus and species exist only by virtue of predicates essential to the individual. "Individuals, species, and genus are one and the same reality (*eadem res*), and universals are not, as is sometimes stated, something different from universals."

By the phrase *res non praedicatur*, we note that things are not predicates, and predicates are not things. If we say that "the car is old," then "old" is a predicate, and therefore there is no thing which is "oldness" - "old" only exists in old things, but it does not exist by itself.

> genus is to species and species is to the individual as matter is to form.

The debates about universals and nominalism become more interesting in special cases, like identity: why am I still me, even though everything about me might change? Also interesting are spiritual cases: how can bread and wine be transformed into body and blood? Such questions are located in a territory which is shared by philosophy and religion. Thinkers who deal with these questions see themselves as both philosophical and religious: Berengar of Tours, for example, agreed

that the Eucharist was a sacrament in the sense in which the word is used by Augustine: a sacred sign that takes us beyond the sensible appearance to an intelligible reality.

The sacraments have been repeatedly analyzed by philosophers, with many different understandings and interpretations of what their true nature is: in any case, they are not merely symbolic in the usual sense. As with physics at the micro and macro levels - subatomic and astro - our intellect with regard to reality

is like our senses in comparison with intelligence or one sense in comparison with another, that is, unable to understand but forced to believe what it does not understand. It would hardly be possible to state in more radical manner the fundamental discontinuity of the mind.

Can we really understand what it means for time to slow down, as general relativity shows? We encounter the limits of human reason in such situations, and our language has developed certain mechanisms for talking about those situations. We risk falling into error if we either take our language in such situations to function as it does in other more normal cases, or if we confuse the ability to talk about these cases with the ability to understand them.

13.2.4   Foundational Principles in Logic (2010-11-03 07:08)

William of Ockham, writing in the early 1300's, developed a grand logical system, part of the Scholastic foundation laid in the Middle Ages for the later development of modern mathematics, physics, and chemistry. Like all logical systems, Ockham begins with a few relatively simple principles.

John Corcoran, at the State University of New York, writes that one of Ockham's starting points is an

nominalistic ontology, a key principle of which is that a general term such as 'animal' denotes not a universal but rather each and every individual of which the term is truly predicable.

By pointing out that Ockham's thought is "nominalistic," we contrast Ockham with, for example, Plato, who thought that universals were independently existing objects. Plato thought that "blue" or "blueness" existed independently of any or all blue objects. Ockham, by contrast, writes that "blue" is merely a property or characteristic of blue objects, and has no being aside from actual blue objects. Ockham has a "lean ontology," meaning that he believes that fewer things exist than Plato, who has a "rich ontology" - "ontology" being the study of what exists and what does not.

Building upon this first principle, Ockham talks about "supposition":

According to Ockham's terminology, a general term supposits for the individuals, if any, of which it is truly predicable.

So, for example, we can correctly substitute "a man" for the proper names John, Robert, and William in any sentences such as: "John eats pizza. Robert rides a bicycle. William reads a book." This fact emphasizes Ockham's nominalistic view that general or universal terms (like "man" or "blue") are linguistic concepts - i.e., it's all about the words - and not metaphysical concepts - i.e., not about actually existing things called "blueness" or "manhood" - and so the essence of the matter is revealed in the substitution in sentences, which keeps the center of the discussion of universals at the linguistic level, not the ontological level.

13.3 October

13.3.1 Space and Time (2010-10-16 10:59)

The border region between philosophy and physics is a fascinating area which has been inhabited and cultivated by a number of brilliant intellects over the centuries. One feature of the field is that nearly everyone who works in it arrives at the conclusion that one cannot adequately consider the nature of space without meditating on time, and conversely, one can't really deal with time unless one also deals with space.

Going all the way back to Zeno of Elea, who lived around 450 B.C., and who arguably began modern physics and modern mathematics, we see the inseparability and interplay of space and time.

As Edmund Husserl wrote:

> I am aware of a world, spread out in space endlessly, and in time becoming and become, without end. I am aware of it, that means, first of all, I discover it immediately, intuitively, I experience it. Through sight, touch, hearing, etc., in the different ways of sensory perception, corporeal things somehow spatially distributed ...

Ignoring Husserl's comment that the world is "without end," we see that space and time are unavoidable issues for philosophy, because they present themselves to us directly and in a manner which is prior to our formation of more complex concepts. Concepts about space and time are indeed themselves very complex, but our experience of them prior to the formation of complex concepts about any topic. Husserl also writes:

> As it is with the world in its ordered being as a spatial present - the aspect I have so far been considering - so likewise is it with the world in respect to its ordered being in the succession of time. This world now present to me, and in every waking "now" obviously so, has its temporal horizon, infinite in both directions, its known and unknown, its intimately alive and its unalive past and future. Moving freely within the moment of experience which brings what is present into my intuitional grasp, I can follow up these connections of the reality which immediately surrounds me. I can shift my standpoint in space and time, look this way and that, turn temporally forwards and backwards; I can provide for myself constantly new and more or less clear and meaningful perceptions and representations, and images also more or less clear, in which I make intuitable to myself whatever can possibly exist really or supposedly in the steadfast order of space and time.

We orient our thinking and perceiving within the framework of time and space, and we understand objects, or our sensations of objects, within that framework. Again, Husserl asserts that time is "infinite in both directions," but that is a separate topic: whether we agree with him on that or not, there are few, if any, conceptions which we can meaningfully form outside of time and space. What it means to be outside of time and space, and if anything is outside of time and space, is difficult to conceive, and disputed by various groups of philosophers. But the centrality of space and time, in both our perceiving and in our reasoning, is indisputable.

13.3.2 What is Knowing? (2010-10-10 15:50)

We know many things, or at least we think we do, and we use the word "know" everyday. But what is knowledge? What does it mean to know?

First, we must sort out the different uses of the word: I know my uncle, and I know that Abraham Lincoln was born in 1809. These are two very different mental states or processes. In philosophy, we are usually concerned with examples of the latter type - what we might call propositional knowledge: knowing that a proposition (a statement or sentence) is true.

One philosophical tradition suggests that knowledge is justified, true belief: it is justified, meaning that we have some reason to embrace it; it is true, because we would not say that one can know a falsehood ("I know that 2 + 2 = 5"); and it is a belief, because one can only know something if one also believes it.

A slightly different spin on knowledge is given by British philosopher A.J. Ayer, who writes

> that the necessary and sufficient conditions for knowing that something is the case are first that what one is said to know be true, secondly that one be sure of it, and thirdly that one should have the right to be sure. This right may be earned in various ways; but even if one could give a complete description of them it would be a mistake to try to build it into the definition of knowledge.

Ayer is indicating that there would be different types of justifications for different types of facts: "I know that my neighbor's car is blue" and "I know that my knee hurts" and "I know that 7 + 5 = 12" represent various types of knowledge. My answer to the question "how do you know?" will not only by different for each of the three, but will be of a different type.

13.4 September

13.4.1 How People Think - Or Don't Think (2010-09-16 08:05)

The word "argument" is used in everyday life to indicate an often passionate or angry disagreement. Friends, coworkers, and families have arguments - often ending in tears, harsh words, slammed doors, or people leaving. In better circumstances, they can end in forgiveness, reconciliation, and mutual respect.

But this word has a different meaning in academic matters: an "argument" is not at all about emotions, but rather about logical reasoning. A philosopher, or a scientist, or a lawyer produces an argument to support a statement. If he believes that the planet Mars once supported life,

he will state his reasons in a calm and neutral manner. If another scholar believes the very opposite, he will produce a different argument, devoid of passion.

The ability to produce arguments, and analyze arguments written by others, is central to philosophy, if not to humanity. Yet this very skill is sadly not so common: C.S. Lewis wrote that it would be naive if one "supposed that argument was the way to keep" a reader from embracing falsehood. Lewis continues:

> That might have been so if he had lived a few centuries earlier. At that time humans still knew pretty well when a thing was proved and when it was not; and if it was proved they really believed it. They still connected thinking with doing and were prepared to alter their way of life as the result of a chain of reasoning.

Instead of logical categories, an average human

> has been accustomed, ever since he was a boy, to having a dozen incompatible philosophies dancing about together inside his head. He doesn't think of doctrines as primarily "true" or "false," but as "academic" or "practical," "outworn" or "contemporary," "conventional" or "ruthless." Jargon, not argument, is

what keeps sloppy or lazy thinkers from truth, from rationality, and from accuracy.