Insight-2 — Phase 2 — Empirical Heuristic Structure

Chapter 2, Section 1: Mathematical and Scientific Insights Compared — May 24th, 2019

There are two key questions to keep in mind as we explore Lonergan's chapters on empirical heuristic structures:

1. *What are the social and political consequences of relying on the empirical sciences as the primary means of controlling meaning?*
2. *How does Lonergan's intentionality analysis of the hard sciences help us to understand his world view of emergent probability?*

Today's Topic

There's a logical sequence to the first part of Insight, one that starts with the pure articulation of the human mind's potential for the abstract via the work of mathematicians, the control of the development of abstract theories of how things relate to other things through the addition of empirical constraints, and finally the common sense world of human interests and concerns where everything relates to the fact that we are human beings.

Each realm is distinct from each other, having both their own kinds of questions and appropriate methods for answering these questions. *Mathematical investigations* involve the immanent intelligibility of such things as numbers, shapes, systems of logic, etc. Necessity enters the scene, in the sense that if such and such than such and such must be true. *Empirical investigations* start off with questions about the nature of things, but soon turns to the relationship between things irrespective of human concerns and interests. What are sought are universal laws. But these laws are always conditional, never absolute. Common sense inquiries seek proverbs, generalizations such as "A bird in the hand is worth more that two birds in the bushes" that help the individual provide that extra bit of intelligibility to resolve the situation at hand. Always, common sense deals with the particular and the conditional, and hence develops unique world views specific to a people living in a particular place at a particular time.

The failure to distinguish these quite different realms of meaning can have fatal consequences for human beings. Ever since the days of Franz Boas, the early anthropologist that insisted each culture be treated as equal to any other (any ranking or comparison of cultures was considered verboten), any attempt to insist on the application of the norms of one culture to that of another (especially the "superiority" of Western culture) was considered "racist." With the cultural impossibility of controlling meaning, governments turned to the application of the only successful method of progressive and cumulative development: the hard sciences.

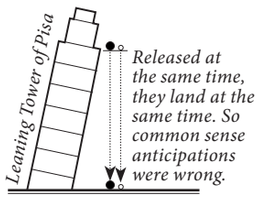
The problem with using the hard sciences as a model for controlling meaning is that the realities of common sense political and intellectual life involves questions of purpose, value, and intentions, all of which are excluded from the scientific effort to understand the universe irrespective of human concerns. As we shall eventually realize, both are needed: common sense to deal with particulars and science to deal with universals. The end results of trying to rely on science to resolve human issues not only destroys the credibility of the sciences as they become highly politicized ("climate change" is a good example, but the same also applies to issues such as abortion, nation states, bureaucratic "deep state" regulators, etc.) but leaves society open to a variety of "unexpected" events as whole areas of human living lie outside scientific investigations (religion being at the top of the list followed close behind by inspired political leadership). Unexpected? Trump.

Lonergan's solution is to use the sciences as an example of what can be achieved if a sound methodology is used but build an entirely different method grounded in the intentional core of all human knowing: the cognitive operations of the human mind. For individuals, we have his *Transcendental Method*; for society, we have its equivalent in the *Functional Specialties*. The work of the *cosmopolis group* is to give from to Lonergan's approach via his notion of Cosmopolis as the antidote to common sense or general bias.

Aristotle: heavy objects fall faster than lighter ones (common sense, something everyone knows).

Galileo: When you drop two objects of different weight, they land at the same time. So, how do falling objects fall, when the only evidence you can reference are measurable aspects of falling?

Thus weight could be ignored. But what else could be measured? There were only two things left: time & distance. So Galileo set out to take these measurements of actually falling objects.



experiment	time	distance
1	3.2 sec	162.4
2	5.1 sec	415.2
3	1.3 sec	27.3 feet
...	...	...

1. All falling objects accelerate at the same rate and
2. the distance a falling object travels is directly proportional to the square of the time it takes to fall.

Galileo

Galileo's experiments with falling objects sets the standards for empirical investigations.

The first point is that Galileo wasn't interested in the purpose or function of falling objects, only in the immanent meaning of falling. This is similar to Lonergan's previous discussion on the immanent meaning of a circle.

The second point is that to understand the immanent meaning of falling objects you have to investigate to the sensate world, an appeal to evidence.

The third point is that any appeal to evidence requires some form of measurement, for unless you can measure something you cannot either replicate the experiment or affirm the reality of your data. Since there is much about human living that cannot be measured, such as any internal conditions that could easily be dismissed as "subjective" not "objective" data, human understanding is truncated.

The fourth point is that what is sought is a function that can relate two or more measurements into a law. This can be the take-off point for an investigation, to postulate a to-be-known law whereby what is known can be brought into the equation.

The fifth point is that any such law cannot be considered definitive, since an infinite number of equations can describe any given data set. But repeated experiments combined with the use of the law in other contexts adds greatly to the probability of being correct. Occam's razor.

The sexth point is that there are two mediators at play. *The first is an energy mediator* that refers to the drive behind the creation of abstract theories, part of Lonergan's "unrestricted desire to know." Some humans, when free from immediate concerns, like to play with ideas; it's an innate drive. The second ***is a control mediator*** that places restrictions one the construction of new theories.

It is this control mediator that, when applied to human concerns that dominate the realm of common sense, causes such social and political havoc. This leads to social and political judgments artifically constrained by an empiricist epistemology.

Such an empiricist methodology fits well with any bureaucratic mentality, for universal rules and regulations are easier to handle rather that particular people living in particular places at particular times.

$$d = \frac{1}{2} gt^2$$

d = distance in feet
t = time in seconds
g = gravitational constant 32.18 ft/s^2

Misc.

1. Theology is a way to give depth to common sense piety in much the same way that one's appreciation of a sunset is enhanced by the knowledge that the sun is stable and the earth is rotating.

2. Steiner, a contemporary linguist, pointed out that language is incredibly powerful in its complexity yet is still bounded. There are three things he says language cannot talk about: higher mathematics, music, and God. Theologians seek to use language to talk about something that cannot be talked about. Yet all is not lost. The very act of doing so affirms the reality of something that cannot be understood through concepts grounded in proportional understanding of human beings. They seek a knowledge of the sacred.

3. Theology breaks boundaries that are not possible for other disciplines. Rarely do other disciplines come face-to-face with the transcendent as a lived reality that gives meaning and purpose to human existence. In a general way, most disciplines lead to horizontal forms of expansion where existing concepts and operations are extended without any radical change taking place. But not the sacred, and not the need for ongoing intellectual, moral, and religious conversion.

Theology doesthis by widening the gap between transcended and transcending being. This gap not only allows for but promotes a shift to a higher perspective through radical changes brought about through conversion. The Divine as terminal value.

4. The central trait of homo sapiens is that we create and manipulate symbols with such skill we transcend that of any other species on earth. This skill allows us not only to create new forms out of the vast field of potentials that surround us but to act upon them to make them a real factor in human affairs.

For example, take the idea of an orchestra. This single idea made manifest through a wide variety of people brings something new into the world that prior to this invention did not exist. This notion enables the coordination of musicians, conductors, back-of-stage personal, and audience into a series of events (concerts) not through the exercise of power to make it so but through mutual self-mediation that separates and yet combines many functions.

Lonergan's Functional Specialties are a case in point, where this singular idea allows for the self-coordination of thousands working in different areas yet for a common cause. So too is the past 14+ years of working to actualize Lonergan's notion of a cosmopolis