Three Concepts for Fostering Discipline Development

By Maury Seldin October 18, 2009

This essay focuses on three concepts, each of which is complex. The first is what we think we know and how we know it. The second is adjusting for the differences between what we see and reality based on understanding the difference between discursive and presentational forms. The third is an application of the first two concepts to a social science phenomenon rather than physical objects through the application of emerging disciplines.

Although this essay is developed in the context of the philosophy interest group at ASPEC, and as a segue to the forthcoming seminar on strategic decision making at ASPEC (which I lead), it is also developed as a blog entry to ***Maury's General Blog*** and to later be used as a blog entry to ***Maury's Seminar Blog***. The essay is linked for the web, but is attached for the philosophy participants.

The Kantian Perspective

As to the first concept, consider what Bryan Magee says in his chapter on *The Discovery of Kant* "The attempt leads him [Kant] into the most radical reconstruction of the theory of knowledge that anyone has ever carried out. At the end of it he pronounces that the whole nature of the world *as we experience it* is dependent on the nature of our apparatus for experiencing , with the inevitable consequence that things as they appear to us are not the same as the thing as they are in themselves." [*Confessions of a Philosopher,* page 143.]

This is a variation of a combination of the opening sentences of the first two paragraphs of Kant's, *Critique of Pure Reason*: "That all our knowledge begins with experience there can be no doubt…But although all our knowledge begins with experience, it does not follow that it arises from experience." I quoted that in an essay published as an insert in *News from ASI,* "Roots of Modern Disciplines," as a pivotal point in the development of contemporary disciplines. Spring 2003: Roots of Modern Discipline by Maury Seldin . The opening discussion on the philosophical foundations is footnoted here.[1]

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[1] The combination of the opening sentences of the first two paragraphs of Kant's, *Critique of Pure Reason* is a pivotal point in the development of contemporary disciplines. It is retrospective in indicating the emergence the modern approach to research in that our Western heritage of philosophical roots is built upon the *a priori* reasoning of the ancient Greek philosophers, especially Plato and Aristotle. ¶ The part that did not arise from experience was, in the words of Steven Jay Kline [*Conceptual Foundations for Multidisciplinary Thinking,* p.195] summarized as follows: "These Greek ideas exalted rational thought, logic, and the life of the mind. For the most part, however, the ancient Greek thinkers did not use empirical evidence; they relied on thought and discussion, not only as the sources for knowledge, but also as the means of verification." ¶ In the beginning of the Enlightenment era there was a unity of all knowledge outside the theological knowledge that provided the "sacred canopy" [see Peter Berger's 1969 book referred to on page 194]. Kline identifies this unity of knowledge as a single body in the ensuing paragraph. "Ancient Greek thought about the physical world had been summarized by Aristotle, and his writing was taken as an authoritative source regarding natural phenomena by many European scholars in the period during and following the Renaissance. The use of Aristotle as a source of "the truth" about the physical world was similar to the away the Scriptures had served during the Middle Ages. This view led to what was called "natural philosophy," which was taken to include all the scholarly knowledge that lay outside the theological knowledge. For several centuries, natural philosophy was seen as largely a single body of knowledge. ¶ Kant blended the *a priori* with the empirical that turned out to be the foundation for the highest quality of knowledge, empirically verifiable results. The methodology, which is of great rigor, turns out to be the altar at which modern day academics worship.

The Kantian view, as discussed by Magee, includes the following. “All the ways we have of perceiving objects – sight, sound, touch, taste, smell, - are such as cannot exist independently of sensory and nervous systems; and all the ways of thinking about objects are precisely that, namely ways of thinking, and can no more take place without brains than seeing can take place without eyes… Science, in other words, consisted entirely of immediate observation plus logic, and these were two processes which, if carefully executed, yielded the highest level of certainty that there could be.” [Pages 141-2.]

Magee continues the discussion noting that Kant drew from Hume’s contribution; “Hume taught him that causal connection is something whose existence is not only unobservable but impossible to derive logically from anything that is observable. .” [Page 142.] Magee goes on to develop the idea that “**Therefore observation and logical derivation cannot be the only bases for reliable knowledge**. [Emphasis added.] [Page 143.] All of this leads to the last sentence of my opening quotation of Magee, “At the end of it he [Kant] pronounces that the whole nature of the world *as we experience it* is dependent on the nature of our apparatus for experiencing , with the inevitable consequence that things as they appear to us are not the same as the thing as they are in themselves.”

The rest of the chapter expounds on these aspects of epistemology. The segue to the next concept discussed here, however, is a quote from page 146 of the chapter, “Kant left us with three as against two components of possible knowledge about this world: empirical observation, logical derivation, and the forms in which all these are mediated by our mental and sensory apparatus.”

The Langerian Perspective

Susanne K. Langer, in her book *Philosophy in a New Key: A Study in the Symbolism of Reason, Rite, and Art,* sheds a good deal of light on the “mediation by our mental and sensory apparatus.” Here we are focusing on her chapter titled “Discursive and Presentational Forms.” At the beginning of the chapter she discusses how one might believe that Greenland is larger than Australia when looking at a Mercator projection because by appearance one *finds* it larger. However, if one understands the nature of the Mercator projection one could by blending the observation and logic get a closer approximation to reality.

One could apply the laws of reasoning through the use of the measurements of math and that may be thought of as discursive thought. Such thought uses sequences as in languages, and especially in mathematics. By way of contrast there is a presentational form in which a totality is presented as in visual forms, “They do not present their constituents successively, but simultaneously, so that relations determining a visual structure are grasped in one act of vision.” [Page 93.]

Langer goes on to explain that the complexity of the presentational form permits simultaneous handling of constituents that have a complexity too great for a discursive form, and concludes that “A language-bound theory of the mind, therefore, rules it out of the domain of understanding and the sphere of knowledge.” [Page 93.] She discusses this in the context of symbolism and devotes some successive chapters to developing the concepts as applied to language, ritual, myth, and music.

In addition to the use of symbolism as a presentational form representing a complexity not describable by a discursive approach Langer discusses the challenges of knowability. From discursive methodologies what one can know is limited by what one can ask, but sometimes the language is an expression of feeling rather than of reason. But, as our discussion has inferred, understanding may be enhance through presentational forms even though perception may not be an accurate representation of reality. The issues may be thought of as dealing with the gaps in knowledge.

The relevance of this is that what appears to the policy makers as the nature of markets is so far removed from reality that the results in the form of the current Great Recession could have been avoided. And, this leads us to the third concept; the one concerned with the development of knowledge for application by decision makers with power over public policy.

The Seldinian Perspective

My perspective is that Langer's presentational form is a special case of emergence as in complexity theory.[2] The concept of emergence is that the interaction of constituent parts may give rise to

[2] This is discussed in my comments to the philosophy interest group the previous week. The following provides that item: [on the web just provide a link, both items are to be added to the section Subprime Crisis Seminar on Improving Strategic Decisions] "**Some Comments on the Bryan Magee Chapter 'What Can Be Shown but Not Said"** by Maury Seldin on October 9, 2009: Emergence came to mind when Magee, in referring to Langer's "presentational form" in contrast to her "discursive form," wrote "Because it is – indeed it must be, and can only be - perceived as a unity and apprehended as a whole…" [Page 108.] He writes that this *presentational form* has a variety of properties "…in a different way the discursive structure can be said to have the same properties." The idea is that the whole takes on something other than the parts, "…a *Gestault* – an organic whole..."

It also brings to mind my comments on emergence when we discussed Dennett's Sweet *Dreams*, Chapter 1, (two years ago). Here is an excerpt: "The human brain is an incredibly complex organ of the human body. As such it is useful to consider the idea of harnessing complexity in order to understand the operation of the organ. Consider the following quote: 'Complexity often results in features, called **emergent** properties, which are properties of the system that the separate parts do not have. For example, no single neuron has consciousness, but the human brain does have consciousness as an emergent property.' [See Axelrod, Robert and Cohen, Michael D. *Harnessing Complexity: Organizational Implications of a Scientific Frontier,* New York: The Free Press, 1999. Page 15.] ¶ I found the Axelrod book to be a hard read, but it is useful because it relates to the interactions that I have been dealing with in the Seminar on Strategic Decisions (the last session of which will be at 11 AM on the same day we will discuss the chapter, April 10). Page 62 of the Axelrod book discusses that "…events of interest within the system arise from the interactions of its agents with each other and with artifacts." ¶ An easier read is the Johnson book, *Emergence: The Connected Lives of Ants, Brains, Cities, and Software* [Johnson, Steven. *Emergence: The Connected Lives of Ants, Brains, Cities, and Software.* New York: Touchstone, 2004.]. On page 103, Johnson writes, "The body learns without consciousness, and so do cities, because learning is not just about being *aware* of information; it's also about storing information and knowing where to find it. It's about being able to recognize and respond to changing patterns…" Earlier on the same page he provides an example of the body's immune system learning responses to invading viruses. The later discussion of ants (page 115) provides an analogy to the brain…"

The relevance of this to the Magee chapter is that Magee says that "The presentational form of a philosophical argument is something exhibited by the argument as a whole and not something stated in any, or for that matter, all, of its sentences." [Page 109.] A practical application of this relates to a better understanding of our current Great Recession, especially how the inadequacy of public policy let it happen.

properties not present within the constituent parts; thus the resultant has a character different from the constituent parts. Consider the following two paragraphs from the Seminar Blog's [***Maury's Seminar Blog***] lead essay, The Great Recession: Vision Problems of the of the Experts , "Emergence is a concept helpful in viewing the system. Steven Johnson in his book *Emergence: The Connected Lives of Ants, Brains, Cities, and Software* writes that emergence is a self organization, a bottom-up system. As complex adaptive systems, "…agents residing on one scale start producing behavior that lies one scale above them: ants create colonies; urbanites create neighborhoods…The movement from low level rules to higher-level sophistication is what we call emergence." ¶ The economy in a free society is a complex adaptive system. Michael Shermer writes in his book, *The Mind of the Market: How Biology and Psychology Shape Our Economic Lives,* "Evolution and economics are not just analogous to one another; they are actually two different examples of a larger phenomenon called complex adaptive systems, in which individual elements, parts, organisms, or people interact, process information, and adapt their behavior to changing conditions…they contain self-driving feedback loops…"

This Seldinian perspective of markets is being developed in a monograph in progress. As discussed in the draft in progress, all of this leads to the intent to advance the state of the art in order to improve

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Here is an excerpt from a colleague of mine relating to my web based seminar which is part of *Maury Seldin on Strategy Matters* [

, http://www.hoyt.org/decision_making.phtml , a variation of the ASPEC seminar to be continued this season] : "I was reading an article in a doctor's office about a conversation between Larry Summers and Joseph Stiglitz both on the Princeton faculty, concerning Paul Volcker who was up for tenure. Stiglitz asked Summers 'Larry, is this guy really smart?'. Summers started to recap Volcker 's research, etc.; Stiglitz said, "I mean is he smart like us?' Meaning can he theorize and think in the abstract on a higher plane. I believe that melding of the disciplines will require abstraction on a higher level. Some of us will never get it."

Magee writes in the sentence following the one just quoted, "There is little I can do to tell you what it is, except to repeat it ['The presentational form of a philosophical argument is something exhibited by the argument as a whole and not something stated in any, or for that matter, all, of its sentences.']. You have to "see" it for yourself, and if you do not see it there is not much I can do to point it out to you."

Although Langer is referring to art, we can extend the concept to science, being a devotee of Wilson's *consilience.* It is this extension that we will be talking about when my seminar at ASPEC resumes. In the meantime, the Magee discussion of *Tractatus* and logical positivism makes the point that languages and other symbols have their limitations. The important issues go to the roots of values. The discussion continues with the limitations of science. As Wittgenstein is quoted, "… the problems of life remain completely untouched.

What is missing is that the forecasts of outcomes can be improved by better science, but we can discuss that when we get to Popper.

public policy. This is best done in the context of an emerging branch of economics called *complexity economics,* an application of an emerging discipline, *complexity science,* to economics. Although this is done in the context of *complexity economics*, the focus is on application of principles underlying biological analogies useful in developing public policy, especially with regard to achievement of the nation's goal of a decent home and suitable living environment for every American family and the dependence on capital markets. The label of *bio-economic public policy* is used for this application of consilience.

The bio-economic public policy on housing and related matters, as a subset of complexity economics, recognizes the invisible hand as an emergent property of the interactions of buyers and sellers of housing. In the jargon of network science, the players in the housing markets are nodes and the communications are the links. These links communicate power of the participants and the market is the emergent result of these interactions. The market contains properties not present at the lower level of activity. Public policy would do well in improving its forecasts of outcomes if it understood this perspective of the system.

While understanding the first two concepts of this essay leads one to conclude that the reality of the market is likely to be different from our perceptions of it, it is still useful because some perceptions are closer to reality than others. Thus, the development of the discipline, while utilizing the reason of the discursive form, and the holistic vision of a biological system as a presentational form as best as can be envisioned, moves to the third leg of the stool, what we are able to mediate "by our mental and sensory apparatus."

With that perspective we can adopt any number of strategies to deal with the uncertainties that still exist because of the limitations of science. But, there will be satisfaction in knowing that we have applied the emerging disciplines and helped in their development and application. Fostering that process is the thrust of my section of the Hoyt website, http://hoyt.org/ , *Maury Seldin on Strategy Matters,* http://hoyt.org/decision_making.phtml