Chapter XI

Epistemetrics:
The Metrics of Knowledge

Epistemetrics: What We Measure

This chapter introduces the nation of “epistemetrics,” the metrics of knowledge. This is a conceptual space which consists of the measurement of the attributes of knowledge, including its origins, processes, flow, and the assessment of its value to users. Epistemetrics is a subfield of the study of knowledge and knowledge systems. It is coined here as the encompassing definition of the measurement of the phenomenon of knowledge.

Epistemetrics contains three complementary topics or sections: (1) what we measure, (2) how we measure, and (3) why we measure. The frame of reference of the concept and its three elements listed above distinguish it from the conception of epistemetrics described by Nicholas Rescher (2005). His conception of epistemetrics is derived from his prolific work in the philosophy of knowledge (Rescher, 2003). The key to Rescher’s definition and scope of
Epistemetrics is his focus on the role for the methods used to link scientific conjectures with experiential data. Rescher’s definition of epistemetrics is not about measurement and metrics—unlike the notion of epistemetrics which I employ in this book as the “metrics of knowledge.”

Rescher’s book explores the limits of knowledge. He discusses scientometrics as the main component of his version of epistemetrics. The use of Rescher’s approach is philosophy of science and epistemology. This is fundamentally different from the notion of epistemetrics I am proposing in this book. The metrics of knowledge is a notion particularly focused on measuring what is human knowledge, how it progresses, and what value is derived from its generation and usage. This conception of epistemetrics is, of course, much broader than any one notion hitherto proposed by Rescher or others (e.g., Kuk, 2006; Ackerman, 2004; Rescher, 1989; McElroy, 2002).

**Units and Levels of Measurement**

The measurement (metrics) of human knowledge may occur at different levels of abstraction and conceptualization. This is similar to the biological classification scheme of the levels of the subcellular, cellular, and molecular level of biological tissue.

The first measurable unit of knowledge is the clustering of sensorial inputs. This basic unit is the perceptible distortion of sensorial inputs where intervals are perceptible and significant so that they form a measurable entity which is then “known” to the knower and constitutes the fundamental unit of knowledge.

KANEs (Knowledge bAsic uNits of E$xistence$) are the next level of abstraction and measurement of knowledge. They are similar to the cellular form of life, namely, the smallest unit of living matter which is able to function independently—the basic unit of life.

As in biology, the mind congregates units of knowledge to form higher-order constructs which create unique representations of the environment of the knower—hence generating knowledge about the world of the knower—what it looks like and how it operates. Different configurations, clustering, or combinations of the basic units of knowledge create different perspectives of the same phenomenon in the environment. The same knower may have different perspectives of the same reality over time, and different individuals may have simultaneously different knowledge of the same environment.
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