Chapter 14

ECONOMIZING PRINCIPLE IN ACCOUNTING RESEARCH

Shyam Sunder
Yale School of Managementy

Abstract: Joel S. Demski's work is characterized by the austere discipline of applying the economizing principle to accounting and management phenomena. In natural sciences optimization is used as a structural principle for understanding the organization of the physical universe. As social scientists applied it to our self-conscious selves, economizing acquired a behavioral interpretation, leading to unnecessary and avoidable confusion with the findings of cognitive sciences. Important aspects of aggregate level outcomes of social phenomena are structural. The use of the economizing principle for understanding social phenomena in general, and accounting in particular, has been highly productive, and it is not in conflict with cognitive limitations of human individuals. Demski's work defines the application of this powerful principle to problems of accounting.

Key words: economizing principle, self-selection, employee stock options, integrated financial-tax accounting, audit failures

Joel S. Demski's contributions to accounting are best characterized by use of the simple idea of economizing to build our understanding of accounting. Exploration of the reach and consequences of this idea for the discipline and practice of accounting is a good way to recognize his pioneering contributions.

All great ideas are simple, but not all simple ideas are great. The economizing principle is both simple as well as powerful. Borrowed from physics and biology where it is recognized as optimization principle, into management, economics, and social sciences, this principle serves as a domain of attraction, and the bedrock of our discipline.

1. THE ECONOMIZING PRINCIPLE

When a marble rolls down the side of a bowl and comes to rest at the bottom, physicists know the marble minimizes its potential energy. When a photon leaves the sun and travels to the eye of a fish swimming under water on earth, the physicist knows that the photon bends just sufficiently at the surface of water so its total travel time from the sun to the eye of the fish is minimized. How does the marble decide where to go and where to stop? How does the photon know where to turn and by how much? Why do they, or anything else in the universe, care to minimize or maximize anything? These are not meaningful questions to a physicist. In physics optimization is used as a fundamental organizing principle of nature. Minima or maxima are guides to identify the domain of attraction of physical systems.

Similarly, in Biology:

> At multiple hierarchical levels--brain, ganglion, and individual cell—physical placement of neural components appears consistent with a single, simple goal: minimize cost of connections among the components. The most dramatic instance of this "save wire" organizing principle is reported for adjacencies among ganglia in the nematode nervous system; among about 40,000,000 alternative layout orderings, the actual ganglion placement in fact requires the least total connection length. In addition, evidence supports a component placement optimization hypothesis for positioning of individual neurons in the nematode, and also for positioning of mammalian cortical areas.
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> A basic problem of network optimization theory is, for the connections among a set of components, to determine the spatial layout of the components that minimizes total connection costs. This simple goal seems to account for nervous system anatomy at several organizational levels. It explains "why the brain is in the head" of vertebrates and invertebrates—this placement in fact minimizes total nerve connection lengths to and from the brain. Proceeding to the internal structure of the brain, the working hypothesis of component placement optimization in cerebral cortex is consistent with known interconnections and spatial layout of cat visual and rat olfactory areas. In addition, the hypothesis exactly predicts contiguities among ganglia in the Caenorhabditis elegans nervous system. Finally, this "brain as ultimate VLSI chip" framework also applies to the lowest-level components, to predict grouping of individual neurons of the nematode into ganglion clusters, and even their positioning within ganglia. The observed harmony of component placement and connections in turn raises questions about whether in fact