

Management as Evolutionary Epistemology: A Machian Genetic Critical Perspective as Basis for a Second Order Science

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The paper sketches an argument how an evolutionary ('genetic') epistemological model of actors' perspectives can be used to develop an enlightened approach to management of complex systems, such as organizations, along Popper's dictum 'The future is open'. This enlightened approach uses ideas from the history and philosophy of science and links into the program of second order science as discussed from different point of views by the authors in the 2008 volume of Constructivist Foundations and specifically for this conference by Lissack among others. Based on Mach, it takes a metaphysically critical, neutral monist approach that complements and may integrate other perspectives on second order science.

The development of concepts in management follows similar patterns as the historical development of scientific concepts. In line with Oeser, Management is based on heuristic information processing and condensation into action based on actors' perspectives organized in multiple layers of information processing. These filter information and perspectives and may lead to flawed interpretations and errors ranging from minor mistakes to large scale failures, if adopted uncritically for wide-ranging decisions. One major issue in management is thus to decide on a 'model of the world' and to identify misinterpreted signals to be able to adapt the model. These risks can be easily 'blended out' through the filters of company culture, reporting procedures and variables reported in MIS.

Management takes place via actors' heuristics, involving organizational procedures, management information and reporting systems, which lead to - sometimes flawed - interpretations and subsequent errors ranging from minor mistakes to large scale failures. While the epistemological issue is often defined as that we cannot know the future, we can know it enough to construct a vision and build models of what may (likely) happen. However, the bigger risk here is that the mental model of managers is partially wrong and the associated 'politics' of arguing for and against specific models lead to painful choices which are 'discovered' only in the future.

Thus it is necessary to identify early on indicators for deviations from the 'imagined world' and to adapt models and assumptions (,hypotheses') as quickly and as fluidly as possible. Mach's genetic epistemological view based on a 'fluent' gestalt concept is helpful in this.

To describe the challenge and develop hints on how to deal with such situations, I employ physicist-psychologist-philosopher Ernst Mach's genetic perspective on the evolution of knowledge in the history of science. According to Mach, knowledge develops based on the adaptation of thoughts to observed facts and to each other. Scientists' statements on the nature of reality need to be based on observations, which require an analysis of the 'psychological worldview' in and from which observations are identified, measured, analyzed and interpreted. The thought system, the worldview of scientists influences observations, interpretations of observed facts and identification of causality in models of reality. In turn, observations lead to adaptations of the thought structure of scientists as much as to a selection of observations that are deemed legitimate to support or refute a hypothesis.

This process often uses analogical reasoning to what is already known, which serves as basis for the further 'agglomeration' of thought structures. This type of reasoning is already used by managers, as it allows for quick decisions. It also poses the risk of making wrong decisions based on scarce information, if the underlying basis in an originally empirical, epistemological approach is not considered. The development of the worldview of managers and the psychology of epistemology and perception thus take center stage for the development of 'enlightend' approaches to humane management of members of organizations and information processing in organizations.