THE FINANCIAL CRISIS: CYBERNETICS CAN EXPLAIN WHAT HAPPENED AND HOW WE NEED TO CHANGE OUR THINKING

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Why the financial crisis happened is explained and a remedy to prevent a recurrence is proposed. The paper shows how several factors combined to transform an ordinary credit cycle into a "super bubble." Financial innovations, which were initially thought to decrease risk, actually increased risk. Why the financial crisis happened is described using circular causal diagrams, based on accounts by journalists. Then the economics literature on financial crises is examined. The academic literature on financial crises uses linear causality. Having presented two ways of describing financial crises, the paper then considers four underlying models in science – linear causality, circular causality, self-organization and reflexivity. The current acceptability of these four models is considered. Linear causality and self-organization encounter no logical difficulties. Circular causality violates the fallacy of circular reasoning. Reflexivity violates three informal fallacies, a fallacy of thought (circular reasoning), a fallacy of emotion (ad hominem statements), and a fallacy of language (descriptions operating on two levels). The paper concludes by suggesting that economists, and other social scientists, need to change their thinking in three ways. First, accept the uncertainties that arise when one constructs arguments that violate the informal fallacies. Second, expand the philosophy of science by including the observer within the domain of science. Third, adopt a model of economic systems in which the observer is also a participant and participants are also observers. This change goes well beyond behavioral economics. Reflexivity in social systems is quite compatible with recent developments in cybernetics and with an expanded view of the philosophy of science.