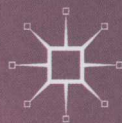


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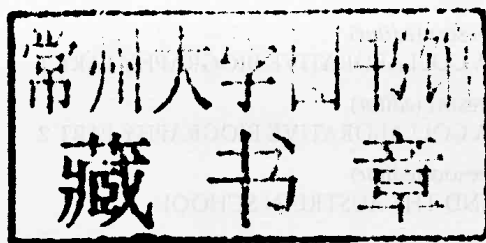
# HAYEK AND BEHAVIORAL ECONOMICS

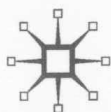
Edited by

*Roger Frantz and Robert Leeson*



# Hayek and Behavioral Economics





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Foreword © Vernon L. Smith 2013

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# Foreword

My connection to Hayek – and his intellectual opponents – goes at least as far back as my undergraduate days. As a senior, I took an economics course and found it very intriguing – you could actually learn something about the economic principles underlying the claims of socialism, capitalism, and other such “-isms.” Curious about advanced economics, I went to the Caltech library, stumbled upon two books: Samuelson’s *Foundations*, and von Mises’ *Human Action*. From the former, it was clear that economics could be done like physics, but from the latter there seemed to be much in the way of reasoning that was not like physics.

I also subscribed to the *Quarterly Journal of Economics*, and one of the first issues (November, 1949) had a paper by Hollis Chenery on Engineering Production Functions. So, economics was also like engineering! I had not a hint then as to how much those first impressions would be changed in my thinking over the decades to follow. But in 1962, my book *Investment and Production* would have a chapter on engineering production functions.

After graduating in engineering I went to the University of Kansas to get an M.A. in economics as a vehicle for allowing me to decide if I wanted to continue in economics. At KU I took classes from Dick Howey: price theory, math economics, imperfect competition – but significantly, a full year course in the Development of Economic Thought. Howey was a surviving member of an endangered species, a History of Economic Thought scholar, but it was from him that I learned what scholarship really meant. To be good at whatever you did, you needed to acquire knowledge of all the supporting structure, tools, and primary sources of inspiration. If you were Howey, that meant knowing mathematics and being fluent in French, German, and Italian. As one who just barely knew English, he much impressed me. His model seemed just right and it generalized to whatever might interest you. With Dick as a mentor, I decided economics was for me, and I continued by pursuing an economics Ph.D. at Harvard beginning in 1952.

At Harvard, I had macroeconomics from Alvin Hansen – the foremost American Keynesian, but he was also very eclectic. You read everything from Foster and Catchings to Hayek, and not only Keynes, his interpreters and critics – Hicks, Samuelson, Metzler (also a student of Howey at

the University of Kansas), Friedman, et al. The Keynesian economics was tempered by the dry wit of Gottfried Haberler, the sarcasm of Wassily Leontief, Guy Orcutt's deeply serious search for the messages hidden in all data, Alexander Gershenkron who lectured on "ven Breetan vas ze voikshop of ze woild," and a coterie of graduate students trying to make sense of it all for their own careers. When Fritz Machlup visited, I wondered how the two polite Austrians – he and Haberler – would determine which one would get through a door first. Schumpeter was no longer alive, but his ghost was lurking in the halls, with Haberler countering any claims that inflation ("ze monster" to Schumpeter), if not too large, was good for the soul and spirit of the economy. In Autumn 1955, I taught Principles of Economics (at Purdue University) and found it a challenge to convey basic microeconomic theory to students. Why/how could any market approximate a competitive equilibrium? I resolved that on the first day of class the following semester, I would try running a market experiment that would give the students an opportunity to experience an actual market, and me the opportunity to observe one in which I knew – but they did not know – what were the alleged driving conditions of supply and demand in that market experiment.

But let me backtrack to 1952. Many generations of Harvard graduate students had been exposed to E. H. Chamberlin's initial graduate course in Monopolistic Competition. On the first day he would set the stage for the semester using a classroom demonstration experiment which showed that competitive price theory was an unrealistic idealization of the real world. He gave half the class buyer reservation values, and the other half seller reservation costs. The value/cost environment was like the treatment of market determination in Bohm-Bawerk's (*Positive Theory of Capital*, 1891, Online Library of Liberty, book III, 203–213) representation of supply and demand in a horse market with multiple buyers and sellers in two-sided competition – perhaps Chamberlin's source of inspiration. I knew Bohm-Bawerk because of Dick Howey's course, but I did not pick up on this similarity until much later. Chamberlin, unlike Bohm-Bawerk's description, had the buyers and sellers circulate, form pairs, and bargain over a bilateral trade; if successful the price was posted on the blackboard; if not successful, each would seek a new trading partner. This continued until the market was closed. The prices in sequence were volatile and failed to support the equilibrium prediction. Chamberlin used this first-day exercise to set the stage for his theory of monopolistic competition. I decided to use the same value/cost setup but changed the institution. Secondly, I decided to repeat the experiment for several trading periods to allow the traders to obtain experience

and to adapt over time, as in Marshall's conception of the dynamics of competition. At Kansas I had been thoroughly versed in Marshall by John Ise who owned all eight editions of *Principles*: the eighth, that he brought to class, was like a huge stack of loose sheets – the binding had been obliterated by use! I had been particularly impressed by Marshall's treatment of price determination in a local corn market (Marshall, *Principles of Economics*, 332–336) where “the price may be tossed hither and thither like a shuttlecock” but will settle pretty close to the (clearing price) by the end of the market.

For the institution, I reasoned that if you were going to show that the competitive model did not work, then you should choose a more competitive trading procedure, so that when the competitive model failed to predict the outcomes you would have a stronger case than had been made by Chamberlin. I went to the Purdue Library and found a book by George Leffler, *The Stock Market* (1951), giving details on the bid/ask double auction used in the stock and commodity exchanges. In January 1956 I carried out my plan. To my amazement the experimental market converged “quickly” to near the predicted equilibrium price and exchange volume, although there were “only” 22 buyers and sellers, none of whom had any information on supply and demand except their own private cost or value. I thought perhaps that it was an accident of symmetry in the buyer and seller surpluses. I shot that idea down with an experiment later using a design in which the seller surplus was much greater than that of the buyers. Thus, I seemed to have stumbled upon an engine for testing ideas inside and outside traditional economic theory.

No one understood the exchange process better than Frederick Hayek, when he said, and here I quote one of my favorites: “*Nobody can communicate to another all that he knows because much of the information he can make use of, he himself will illicit only in the process of making plans for action. As he will not merely make use of given knowledge he discovers what he needs to know in order to make appropriate actions.*” This is precisely what the participants in an experimental market implement so naturally and effectively.

The editors of this volume have produced a book that is a continuation and extension of some of these themes. These chapters represent a fascinating in-depth treatment of the unexpected confluence of two recent developments: how Hayek and experimental economics inform each other on the nature of human behavior and the creation of institutions for human betterment.

Vernon L. Smith  
Nobel Laureate in Economics



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# Introduction

Friedrich Hayek's archival material both informs and restricts our understanding of the seminal contributions of this remarkable polymath. As a young man Hayek produced (in German) a draft of what 30 years later became *The Sensory Order: An Inquiry into the Foundations of Theoretical Psychology* (1952). His contributions to economics were informed by these early interests: indeed, according to Kurt Leube (2003, 14, n5) Hayek explained in a letter to a Swedish neurologist that it was the political atmosphere in Europe after WWI that motivated him to study the social sciences.

Yet scholars are restricted: some apparently pivotal material is yet to be delivered to the Hayek archives. For example, Leube's (2003, 12, n1) insights are apparently informed by numerous tapes "in my possession" of "conversations and interviews with Hayek I, Salzburg, 1971–77." Remarkable conclusions have been drawn: for example, Ludwig Mises and the young Hayek initially favored *Anschluss* with Germany (Leube 2003, 13).

Archival material needs to be embedded in an appropriate context. The Austrian School of Economics emerged (or evolved) from the Classical School of Economics with one strand of the (simultaneous) discovery of the principle of marginal utility associated with the publication of Carl Menger's *Principles of Economics* (1871). Simultaneously, Austrians were excluded from the Second Reich (1871–1918) which emerged from Prussian victories against Austria (1866) and France (1870–1871).

Prussia was predominantly Protestant; the ruling House of Hohenzollern favored the "Lesser Germany" solution to the "German question." Austria was predominantly Catholic; the ruling House of Hapsburg favored the "Greater Germany" solution – in which they were included. There were other complications: the Hapsburg territory included non-Germans (such as Czechs, Magyars, Romanians and Croats).

The Austrian School was born amid these inter-German tensions. Menger's (1883) *Investigations into the Method of the Social Sciences with Special Reference to Economics* attacked the methods of the German Historical School; Gustav Schmoller's unfavorable review initiated the *Methodenstreit* (the battle over method). Schmoller's term "Austrian school" was apparently designed as a slur – reflecting the new excluded status of "backward" Austria compared to "modern" Prussia.

The Nobel Prize for Economic Sciences both reflects and shapes the professional agenda. The Austrian branch of the Neoclassical School (unlike other branches) tends to stress limited knowledge and limited computational ability. Four Nobel Prizes are especially relevant to the both the topics of limited knowledge and limited computational abilities, and to the chapters in this volume: Hayek (1974), Herbert Simon (1978) plus Vernon Smith and Daniel Kahneman (2002).

Simon's Prize was awarded for his "pioneering research into the decision-making process within economic organizations." In his Nobel lecture Simon emphasized that economists were moving into domains "that were thought traditionally to belong to the disciplines of political science, sociology, and psychology." Smith's Prize was awarded for "having established laboratory experiments as a tool in empirical economic analysis, especially in the study of alternative market mechanisms"; Kahneman's "for having integrated insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty."

The chapters that follow are inspired – and informed – by Hayek's contributions to what may become a new paradigm in economics: behavioral economics. Our understanding of the associated interrelationships will presumably become clearer when the "missing" Hayek archives become available for scholarly inspection.

Roger Frantz (Chapter 1) provides an historical context to the chapters that follow by examining the similarities between the use of concepts such as rationality and methodology in Hayek and "first generation" behavioral economists (Simon, George Katona, Harvey Leibenstein, Richard Nelson and Sidney Winter). Also examined are the similarities between Hayek and Vernon Smith (although Smith should be classified as both a first generation and "new" behavioral economist).

Deirdre Nansen McCloskey (Chapter 2) examines the similarities and complementarities between Israel Kirzner and Hayek (for example, Kirzner's concept of alertness and Hayek's concept of non-routine knowledge). According to Hayek, an economist who is only an economist can never be a good economist: McCloskey is not only an economist but also an authority in History, English, and Communication. McCloskey reflects on her own journey from her initial rejection of Kirzner and Hayek to her eventual acceptance and appreciation of both.

Walter E. Block (Chapter 3) argues that categorization is the first basic element of science; if we cannot classify, we cannot even have the beginning of science. It is, therefore, important to classify the views of economists and their philosophies. In some ways Hayek was an Austrian

economist, in other ways, he was not. But Hayek was not a praxeologist. Block expresses this notion in part as a fantasy or made-up conversation between Block and an “eminent Austrian economist.”

Peter Boettke, W. Zachary Caceres, and Adam Martin (Chapter 4) argue that behavioral economics scrutinizes the limitations of individual cognitive abilities. Hayek likewise famously questioned the cognitive abilities of real world actors; for Hayek, market institutions rather than individual agents bear the primary cognitive burden in coordinating economic activity. Vernon Smith’s distinction between ecological and constructivist rationality provides powerful support for the Hayekian position from which it draws its inspiration.

Herbert Gintis (Chapter 5) uses Hayek’s critique of the methodological postulates of the German Historical School to undermine the methodological individualism that underpins modern economic theory – and game theory in particular. Gintis outlines an agenda through which a full Walrasian economy could incorporate this Hayekian critique.

Chiara Chelini and Sonia Riva (Chapter 6) attempt to provide a bridge between Jean Piaget’s epistemological works in psychology and Hayek’s psychological and philosophical theories about knowledge formation and evolution of cognitive structures. They also analyze how these issues have been integrated into cognitive economics. Hayek’s role, they argue, has been widely recognized; however, the importance of *Piagetian* epistemology has not yet been fully appreciated.

Francesco Di Iorio (Chapter 7) focuses on the similarities between Hayek’s *The Sensory Order* and Merleau-Ponty’s *The Structure of Behaviour*. Both books share an original standpoint: they criticize the assumptions of sociological holism on the basis of the idea that the mind is both an interpretative device and a self-organized system. Hayek and Merleau-Ponty are often considered quite distant from each other. However, unlike Merleau-Ponty, Hayek explicitly acknowledges the existence of analogies between his conception of mind and that of the French author. Di Iorio argues that Hayek’s concept of the “primacy of the abstract” is “very similar” to Merleau-Ponty’s idea of “the primacy of perception.”

Taiki Takahashi and Susumu Egashira (Chapter 8) argue that progress in the field of neuroscience is an example of “tool-driven” scientific revolutions which arise in relation to the invention of new instruments (tools) designed to investigate nature and discover new facts that challenge previous concepts. In contrast, “concept-driven” revolutions display a different driving force. The authors focus on the role that Hayek’s *Sensory Order* has played in the concept-driven revolution in cognitive and behavioral neuroscience.

Leslie Marsh (Chapter 9) argues that, for Hayek and Simon, the concept of the mind is constrained in its computational capacity to detect, harvest, and assimilate “data” generated by the infinitely fine-grained and perpetually dynamic characteristic of experience in complex social environments. For Hayek, mind and sociality are co-evolved spontaneous orders, allowing little or no prospect of comprehensive explanation, trapped in a hermeneutically sealed – i.e. inescapably context-bound – eco-system. For Simon, it is the simplicity of mind that is the bottleneck, overwhelmed by the ambient complexity of the environmental. The key insight in both is that “perfect” knowledge is unnecessary, impracticable and indeed irrelevant if one understands the mechanism at work in complex sociality.

Morris Altman (Chapter 10) notes that one of Hayek’s fundamental propositions is that individuals can’t know everything, nor can any one individual know and plan what is in the best interest of another individual: the world is just too complex. Aspects of Hayek’s analytical framework are consistent with Simon’s decision-making framework: individuals do not behave as predicted or proscribed by conventional economic theory. But such non-conventional behavior is arguably the most rational or intelligent approach to decision making. However, the Hayek perspective is contrary to the more dominant approach to behavioral economics advanced by Daniel Kahneman and Amos Tversky, who argue that the non-conventional heuristics that characterize average human behavior are often biased and error-prone, yielding choice and economic inefficiencies.

Stefano Fiori (Chapter 11) argues that, in Hayek’s theory, subjectivism constitutes the methodological basis for the understanding of human behavior and of agents’ interactions which unintentionally engender social orders, while the “explanations of the principle” are invoked in consequence of the practical impossibility of knowing all the events which determine the rise of abstract orders.

Peter E. Earl (Chapter 12) argues that Simon’s view of decision making as a satisficing process has typically been applied in relation to understanding limits to the extent of search that people undertake. In contrast, Earl focuses on the need for the processes of cognition that Hayek sought to understand in *The Sensory Order*, to employ satisficing mechanisms in order for lightning-fast judgments to be made about incoming sets of stimuli. Earl also argues that hierarchical decomposition facilitates the processes by which the mind finds matches between stored sets of neural connections and sets activated by incoming stimuli: by first assessing the context at hand, the mind can rapidly compress

the set of stored patterns within which an acceptable match may be found. The role of context is considered for “old” and “new” behavioral economics.

Salvatore Rizzello and Anna Spada (Chapter 13) analyze the relevance of Hayek’s insights about information and knowledge for economic behavior in the context of the evolution of behavioral economics during the 1950–1960s, and then again during the 1990s.

Gerald R. Steele and Hamid Hosseini (Chapter 14) focus on the nature of complexity within Hayek’s research and behavioral economics in general, discussing concepts such as knowledge, degeneracy, connectionism, social connectivity, and consciousness.

## Note

We are grateful to Hardik Gupta for excellent research assistance.

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# 1

## Frederick Hayek's Behavioral Economics in Historical Context

Roger Frantz

### I Introduction

In history of economic thought and comparative economic systems classes my lectures include Hayek's *Road to Serfdom* and his part in the socialist-planning debate. Hayek gained much renown for his work on the socialist calculation debate, including his book *The Road to Serfdom* (1944). *The book* gained Hayek much notoriety but his belief that the book was too popular (there was a Readers Digest edition) and not rigorous enough led him to pursue something more "scientific" and "rigorous." The result was *The Sensory Order* (1952), an investigation into the relationship of the brain and memory, and the nature of the human mind.

I knew that Hayek was an Austrian Economist and that he had a theory of the business cycle, and that he won a Nobel Prize in 1974 which he shared with Gunnar Myrdal for their work "for their pioneering work in the theory of money and economic fluctuations and for their penetrating analysis of the interdependence of economic, social and institutional phenomena." For years it did not occur to me that an "analysis of the interdependence of economic, social and institutional phenomena" was where much of his behavioral economics was embedded.

All in all, I knew very little about his work. However, he was always a curiosity, someone whose work I had wanted to research but always put off. Then I began re-reading his book *Individualism and Economic Order* for my History of Thought class. On almost every page there were similarities between what he was saying, and that of first generation<sup>1</sup> behavioral economists – Herbert Simon, George Katona, Harvey Leibenstein, Richard Nelson, and Sidney Winter. In many cases Hayek wrote about behavioral economic themes before them. The more of his works I