The Road to Rationalization: A History of "Where the Empirical Lives" (Or Has Lived) in Consumer Choice Theory

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Outline of the Argument in the Paper:

This paper is about the history of consumer choice theory. The theory originated in the neoclassical/marginalist revolution of the 1870s which, unlike classical economics, focused primarily on demand and individual utility maximization. The concept of utility it employed originated in utilitarianism and was subjective, cardinal, and hedonistic (based on individual feelings of pleasure and pain). The details of various versions of this early theory varied among different contributors – William Stanley Jevons, Leon Walras, and Carl Menger, and others – but the broad theoretical framework provided a foundation for the science of individual and market behavior, as well as the normative science of welfare economics.

By the first quarter of the twentieth century this hedonism-based theory had come to be widely criticized. Primarily in response to these criticisms, the theory was substantially revised during the ordinal revolution of the 1930s and 1940s. The concept of subjective utility maximization was retained, but several features of the earlier theory were changed. Cardinal utility was abandoned in favor of purely ordinal – better or worse – rankings, utility lost its connection to individual hedonistic feelings, marginal utility was de-emphasized (since diminishing marginal utility is a cardinal concept), and interpersonal utility comparisons were rejected as a basis for welfare economics. Although the early neoclassicals had recognized that the agent's constraints had an impact on choice behavior, there was no consensus about exactly how to build this into the utility-maximizing framework; with the ordinal revolution the linear budget constraint became a standard feature of consumer choice theory. Helped along by key papers such as Hicks and Allen (1934) and Slutsky (1915), foundational contributions like Pareto (1971), and influential texts such as Hicks (1939) and Samuelson (1947), by the middle of the twentieth century ordinal utility theory had become *the* economic theory of individual consumer choice. I will call this theoretical framework *ordinal utility theory* (hereafter OUT); and while this way of modeling, teaching, and thinking about, consumer choice is still with us, it came to be challenged by another framework during the latter half of the twentieth century.

The third approach to consumer choice theory was introduced by Paul Samuelson in 1938, and came to be called *revealed preference theory* (hereafter RPT). Although there are several versions of RPT, all share the same core idea of grounding choice theory in a type of *consistency*: basically that if an individual chooses A when B is available (A is revealed preferred to B), then B would only be chosen if A were not available. As we will see below, the question of the exact relationship between RPT and OUT remains contested, so at this point I will simply note how it is currently depicted in advanced textbooks. Mas-Colell, Whinston, and Green (1995) explain it in the following way:

> There are two distinct approaches to modeling individual choice behavior. The first, … treats the decision maker's tastes, as summarized in her *preference relation*, as the primitive characteristic of the individual. … The second approach, … treats the individual's choice behavior as the primitive feature and proceeds by making assumptions directly concerning this behavior. A central assumption in this approach, the *weak axiom of revealed preference,* imposes an element of consistency on choice behavior, in a sense paralleling the rationality assumptions of the preference-based approach. This choice-based approach has several attractive features. … It … makes assumptions about objects that are directly observable (choice behavior) rather than about things that are not (preferences). (Mas-Colell, Whinston, and Green, 1995, p. 5)

This brief sketch was offered as background to the topic of this paper: the empirical content of consumer choice theory. The connection is that each of these changes – from early neoclassical, to OUT, and on to RPT – was initiated in part in order to make consumer choice theory more empirical or observational. Hedonistic utility involves the consciousness of the agent and is not directly observable, and this fact raised questions about the empirical foundations of early neoclassical theory. Ordinal utility remained in the mind of the agent, but the economists of the ordinal revolution argued that ordinal preferences were more observational and gave OUT much better empirical grounding than the earlier theory. And this trajectory continued with RPT, which was originally intended to move consumer choice theory entirely away from subjective mental states like preference and utility. But despite the perception of improvements in empirical foundations driving theory change, those advocating and using different versions of choice theory never achieved any consensus about exactly what the empirical content was for any of these theoretical approaches.

The goal of this paper is to historically document this ambiguity regarding the empirical content of consumer choice theory. In particular, the paper will examine how theoretical terms like utility and preference were thought to connect to the relevant empirical evidence. I call this the problem of "where the empirical lives" in consumer choice theory and I will argue that it has lived in many different places: not only between the main approaches, but also within different versions of each of them. Although all three moves were motivated by the desire to improve the empirical content of the theory, the answer to the question of where the empirical lives was persistently less stable than the structural features and theoretical axioms that had ostensibly changed because of the improvement in the empirical foundations.

In an effort to keep the project manageable, the paper will focus exclusively on consumer choice under conditions of certainty and parametric prices. Although adaptations of this core framework to risk, probability and expected utility; intertemporal choice and discounting; strategic choice; expectations; and other topics; have played an important role in the development of modern economics, they add layers of complexity that are not necessary here. Similarly, there will be almost no discussion of welfare economics; such normative issues certainly influenced the history of consumer choice theory, but the focus here will be choice theory as an attempt to describe, predict, or explain the behavior of individual consumers. Finally, even though there has been a significant amount of important work on *economic models* in the history and philosophy of economics in recent years, I will treat the terms "model" and "theory" roughly as substitutes since that is how they were generally used by the economists discussed here; there was a general tendency to think of a theory as more general/abstract and a model as a more specific/concrete, but that was not always the case, and even when it was, the distinction does not seem to do any heavy-lifting with respect to the issues of concern here.

The sections of the paper are as follows: