Incorporating Neurobiological Constraints Can Rationalize Human Choice Behavior

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Over the course of the last decade neuroeconomists have gathered a tremendous amount of information about the structure of neural representations. We now know how quantities are represented in the brain and what the relative costs of different forms of representation are. Neoclassical economists have spent nearly a century building theories of choice that are fundamentally theories about representation, but these utility-based theories have turned out to be incompletely predictive of human behavior. Our most recent studies indicate that one key failure of neoclassical economic theory was its failure to incorporate the costs of computation and representation into its core theoretical framework. Our theoretical and experimental work suggests that once these costs are specified (in a minimally restrictive but quite complete way) much of the hoped-for predictive power of neoclassical economics can be recovered.