

explain the historical convergence one observes in output levels and wage rates across countries. In his analysis, Williamson gives substantial attention to the degree to which convergence was driven by trade and factor flows between countries. He provides compelling evidence that the world economy exhibited periods of convergence in precisely those periods when immigration, for example, was freest. An important feature of this discussion is its implications for econometric practice for growth studies. Williamson illustrates how the tendency of most researchers to employ post-World War II data in cross-country regressions can miss important empirical evidence, such as the role of changing immigration policies in influencing convergence in the late 19th and early 20th centuries. In this respect, Williamson's discussion (and of course his research in this area) is a breath of fresh air relative to the current practice of repeated data mining of the Heston-Summers international data set.

While each section has important implications for econometric practice, taken as a whole the book reflects the type of gap between theory and empirics from which the growth literature generally suffers. (To be fair, one can hardly be expected to find otherwise in an endeavor which combines separate papers by the authors.) As described in Durlauf and Quah (2000, *The New Empirics of Economic Growth, Handbook of Macroeconomics*, Volume 1a. Eds.: John B. Taylor and Michael Woodford. Amsterdam: North-Holland) and Durlauf (forthcoming, "Economic Growth and Econometric Practice: A Skeptical Perspective," in *Macroeconomics and the Real World*. Eds.: R. Backhouse and A. Salanti. Oxford: Oxford University Press), the new growth literature reflects a remarkable lack of integration of theoretical and empirical analyses. Specifically, formal empirical papers rarely consider the nonlinearities and heterogeneities which drive the new growth theories, while theoretical work has been relatively little influenced by the patterns in cross country growth patterns which econometric analyses have documented. As powerful as the theoretical and empirical sections of this book are, how much stronger would they be if they were inte-

grated into a common framework? For example, while Aghion establishes a number of implications of capital market imperfections for growth/inequality relations, it is unclear how to distinguish his particular causal explanation from the many other growth/inequality theories which have been developed, nor is it obvious how one would conclude that observed growth/inequality patterns are explained by one of his theories, as opposed to a consequence of the simultaneous determination of growth and inequality by something outside the theory. At some level, these concerns plague all empirical work using observational data, but they seem particularly serious in the case of growth, where one causal explanation typically has little implication on the validity of another; see Durlauf (forthcoming) for further discussion.

That being said, *Growth, Inequality and Globalization*, is an impressive achievement and an enjoyable read, one that deserves the attention of any economist interested in the modern theory of growth.

STEVEN N. DURLAUF

*University of Wisconsin at Madison*

*Handbook of Utility Theory*. Volume 1. *Principles*. Edited By Salvador Barberà, Peter J. Hammond, and Christian Seidl. Dordrecht: Boston and London: Kluwer Academic, 1998. Pp. vii, 684. \$199.95. ISBN 0-7923-8174-2.

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Utility is one of the building blocks in economics. Early mentions are by Gabriel Cramer (1728) and Daniel Bernoulli (1738), "Specimen Theoriae Novae de Mensura Sortis," *Commentarii Academiae Scientiarum Imperialis Petropolitanae* 5, pp. 175-92. The first full-blown discussion may have been provided by Jeremy Bentham (1789), *The Principles of Morals and Legislation*, at the Clarendon Press, Oxford. Bentham envisioned a central role for utility in the social sciences. Utility became firmly related to observable choice after the ordinal revolution at the beginning of this century, with positive results from revealed preference, expected utility, and other theories. During the last decades, choice anomalies, primarily uncovered by psychologists, have led to doubts and new insights.

The editors of the *Handbook of Utility Theory* have gathered an enthusiastic group of authors to discuss utility from different perspectives. The book aims at specialists and concentrates on theoretical and mathematical developments. The first chapter, by Ghanshyam Mehta, shows when numerical utility can be derived from preferences, describing early contributions of Samuel Eilenberg, Gerard Debreu, and others. Utility is taken general without restrictions or additional structure imposed (other than continuity), hence, this chapter is an appropriate introduction. The second chapter by Charles Blackorby, Daniel Primont, and Robert Russell discusses separability of preference. Additive decomposability, Strotz' two-stage budgeting, duality, and other applications are described.

Peter Streufert wrote Chapter 3 on recursive utility and dynamic programming. He assumes an infinite time horizon so as to study stationarity. Biconvergence and other tools are used to derive convergence toward solutions to Bellman's equation. Martin Browning's Chapter 4 presents duality, from both a formal and an informal perspective, as a guideline for obtaining the most suitable description of preferences.

Chapters 5 and 6 are by Peter Hammond. Hammond is generally credited for his justification of the Bayesian approach through "consequentialistic" principles for dynamic decisions. Whereas most chapters in this handbook survey some area of utility theory, summarizing the most important developments, Hammond provides a very detailed and elaborated account of his important work on consequentialism, developed mostly at the end of the 1980s.

Chapter 7, by Peter Fishburn, gives an impeccable survey of the classical results on stochastic utility, where preferences are not deterministic but are subject to some randomness. The stochastic approach to utility has recently been revived because it is indispensable for advanced statistical tests of preference and utility. A recent paper with new references is David Buschena and David Zilberman (2000), "Generalized Expected Utility, Heteroscedastic Error, and Path Dependence in Risky Choice," *Journal of Risk and Uncertainty* 20, pp. 67–88. Maurice Salles

gives, in Chapter 8, a somewhat informal exposition of fuzzy preferences. Fuzzy numbers are, like probabilities, numbers ranging between 0 and 1, but their calculations and combinations are different, and so are their interpretations. Hence, Chapter 8 provides an interesting contrast with Chapter 7.

Lexicographic utility is surveyed by Juan Martínez-Legaz in Chapter 9, delivering a useful update of the survey by Peter Fishburn (1974), "Lexicographic Orders, Utilities and Decision Rules: A Survey," *Management Science* 20, pp. 1442–71. Chapter 10, by Philippe Mongin and Claude d'Aspremont, is on ethical aspects of utility. It is less technical and more elaborate than most other chapters and the text is well written. Most of the chapter concentrates on welfare applications (Harsanyi, Rawls, etc.). This chapter is naturally followed by Chapter 11, by Michael Ahlheim, which is completely devoted to welfare theory. It considers comparative statics, quantity constraints, and intertemporal aspects, and has some comments on public goods, uncertainty, and aggregation.

Hersh Shefrin wrote Chapter 12 on utility functions that change over time and thus may lead to dynamic inconsistencies. In the discussion of classical works by Strotz, Pollak, and others, he not only surveys the subtle issues of what they did but adds many of his own original insights. This holds in particular in Section 12 on prospect theory, with a proposal for formalizing mental accounts and a variable status quo (Formula 12.2), adopting a new decomposition in Formula 12.1. I wish to emphasize that, contrary to Shefrin's suggestion, Kahneman and Tversky's prospect theory does not suggest that dynamic consistency is more responsible for violations of independence than any of the other dynamic decision principles.

Chapter 13 by James Joyce and Allen Gibbard is on causal decision theory. Decision theory is essentially based on counterfactual reasoning which requires a separate logic with instrumental implications. The statement "I receive  $a$  when I do  $b$ " should be nontrivial also if it is certain that I will not do  $b$ . The chapter conveniently makes ideas, mostly studied by philosophers, accessible to economists and other decision theorists.

This book contains an interesting collection of formal works on utility theory. Some parts could have benefited from abbreviation and further polishing but the enthusiasm of its contributors is inspiring.

PETER P. WAKKER

*Tilburg University, The Netherlands*

*Strong Feelings: Emotion, Addiction and Human Behavior.* By Jon Elster. Jean Nicod Lectures. A Bradford Book. Cambridge and London: MIT Press, 1999. Pp. xii, 252. \$25.00; ISBN 0-262-05056-0. JEL 99-1186

Jon Elster has made a considerable reputation out of devising coherent, reasonable explanations for behaviors and social phenomena that appear to be inexplicable in terms of the rational choice model. Although he addresses many disciplines, his commitment to methodological individualism and the seriousness with which he takes rational choice theory has ensured that his work is usually well received by economists. Emotions and addictive cravings—the subject of this book—nevertheless pose a major puzzle for rational choice theorists. While they resemble other visceral states in that they involve “strong feelings” that can short-circuit or distort the rationality of choice, they are distinguishable from, say pain or thirst, in that they can also be shaped by culture and choice.

Elster’s exploration of how these phenomena affect and are affected by culture and choice is based on a careful conceptual and causal analysis of the core properties of the emotions (Ch. 2), addiction (Ch. 3), culture (Ch. 4), and choice (Ch. 5). He draws from various sources with the most important being fiction and the writings of moralists, in the case of emotions, and clinical studies and experiments, in the case of addiction. Some interesting propositions emerge, although he typically hedges them by acknowledging counter-examples, complex causal links, and the limits of current knowledge.

Emotions, it would seem, are predominantly triggered by beliefs rather than perception while with addictive cravings “it is the other way around” (p. 197). They can, however, both “cloud” and “distort” rationality in similar ways. This is because they in-

volve an intensity of physiological arousal and hedonic valence that can preclude “long trains of thought” (p. 198). Moreover, they can induce a disregard of alternatives to the action tendencies produced by the beliefs that trigger particular emotions or the cravings produced by the release of dopamine in synaptic cleft of the brain. The possibility that emotions can occasionally enhance judgment by enabling individuals to avoid procrastination is acknowledged by Elster. However, he regards addictive cravings as generally causing individuals to act against their own interest due to weakness of will, hyperbolic discounting, cue-dependence, or the motivated formation of beliefs that excuse or justify their harmful effects. Emotions, too, motivate individuals to seek justifications for the behaviors they induce. Along with cravings they “are among the most powerful sources of denial, deception and rationalization” (p. 200) so that their effect on behavior, particularly where they conflict with interest, is better explained in terms of cognitive dissonance theory than a cost-benefit analysis that treats psychic and material factors as being commensurable.

Culture, nevertheless, functions to keep rationalizations within the bounds set by the norms, values, and beliefs shared by the groups individuals belong to. It also enhances the ambivalence they experience when their behavior crosses these boundaries. Elster basically holds that while social norms appear to be universally sustained by the emotion of shame triggered by the contempt of others, the behavior targeted by these norms (including addictive behavior) does vary across groups. Furthermore not all cultures have the conceptual repertoire to recognize or justify certain emotions or addictions so that they can become the targets of their social norms. He suggests that “cultural variations in attitudes toward emotions and cravings may have their source in the different valuations of self-control” (p. 202). But can individuals choose to control their emotions or cravings?

Elster takes the view that we do not choose emotions because their occurrence is “basically unbidden” (p. 149). The onset of cravings in response to environmental cues may be similarly unbidden for those individuals