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THEORIES OF DECISION-MAKING IN ECONOMICS AND BEHAVIOURAL SCIENCE

BY

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Recent years have seen important new explorations along the boundaries between economics and psychology. For the economist, the immediate question about these developments is whether they include new advances in psychology that can fruitfully be applied to economics. But the psychologist will also raise the converse question—whether there are developments in economic theory and observation that have implications for the central core of psychology. If economics is able to find verifiable and verified generalisations about human economic behaviour, then these generalisations must have a place in the more general theories of human behaviour to which psychology and sociology aspire. Influence will run both ways.2

I. HOW MUCH PSYCHOLOGY DOES ECONOMICS NEED?

How have psychology and economics gotten along with little relation in the past? The explanation rests on an understanding of the goals towards which economics, viewed as a science and a discipline, has usually aimed.

Broadly speaking, economics can be defined as the science that describes and predicts the behaviour of several kinds of economic man—notably the consumer and the entrepreneur. While perhaps literally correct, this definition does not reflect the principal focus in the literature of economics. We usually classify work in economics along two dimensions: (a) whether it is concerned with industries and the whole economy (macroeconomics) or with individual economic actors (microeconomics); and (b) whether it strives to describe and explain economic behaviour (descriptive economics), or to guide decisions either at the level of public policy (normative

1 The author is Professor of Administration at the Carnegie Institute of Technology. This paper draws heavily upon earlier investigations with his colleagues in the Graduate School of Industrial Administration, carried out in library, field and laboratory, under several grants from the Ford Foundation for research on organisations. He is especially indebted to Julian Feldman, whose wide-ranging exploration of the so-called binary choice experiment [25] has provided an insightful set of examples of alternative approaches to a specific problem of choice. For bibliographical references see pp. 26-28.

2 The influence of economics upon recent work in the psychology of higher mental processes is well illustrated by Bruner, Goodnow and Austin [14, Ch. 3 and 4]. In this work, game theory is used to throw light on the processes of concept formation.

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macroeconomics) or at the level of the individual consumer or businessman (normative microeconomics).

The profession and literature of economics have been largely preoccupied with normative macroeconomics. Although descriptive macroeconomics provides the scientific base for policy prescription, research emphases have been determined in large part by relevance to policy (e.g., business cycle theory). Normative microeconomics, carried forward under such labels as "management science," "engineering economics" and "operations research," is now a flourishing area of work having an uneasy and ill-defined relations with the profession of economics, traditionally defined. Much of the work is being done by mathematicians, statisticians, engineers and physical scientists (although many mathematical economists have also been active in it).¹

This new area, like the old, is normative in orientation. Economists have been relatively uninterested in descriptive microeconomics—understanding the behaviour of individual economic agents—except as this is necessary to provide a foundation for macroeconomics. The normative microeconomist "obviously" doesn't need a theory of human behaviour: he wants to know how people ought to behave, not how they do behave. On the other hand, the macroeconomist's lack of concern with individual behaviour stems from different considerations. First, he assumes that the economic actor is rational, and hence he makes strong predictions about human behaviour without performing the hard work of observing people. Second, he often assumes competition, which carries with it the implication that only the rational survive. Thus, the classical economic theory of markets with perfect competition and rational agents is deductive theory that requires almost no contact with empirical data once its assumptions are accepted.²

Undoubtedly there is an area of human behaviour that fits these assumptions to a reasonable approximation, where the classical theory with its assumptions of rationality is a powerful and useful tool. Without denying the existence of this area, or its importance, I may observe that it fails to include some of the central problems of conflict and dynamics with which economics has become more and more concerned. A metaphor will help to show the reason for this failure.

Suppose we were pouring some viscous liquid—molasses—into a bowl of very irregular shape. What would we need in order to make a theory of the form the molasses would take in the bowl? How much would we have to know about the properties of molasses to predict its behaviour under

¹ The models of rational decision-making employed in operations research are surveyed in Churchman, Ackoff and Arnoff [16]; Bowman and Fetter [11]; and Vazsonyi [69].
² As an example of what passes for empirical "evidence" in this literature, I cite pp. 22–23 of Friedman's Essays in Positive Economics [27], which will amaze anyone brought up in the empirical tradition of psychology and sociology, although it has apparently excited little adverse comment among economists.