REVIEW ARTICLES

ECONOMIC PSYCHOLOGY*

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* Review article of **Economic Psychology: Intersections in Theory and Application**, by Alan J. MacFayden and Heather W. MacFayden, eds (North-Holland, Amsterdam, 1986), pp. viii + 698, $US92.50.

It would be difficult to overstate the potential relevance of the recent burgeoning of interest in the integration of psychology and economics for issues with which this journal is concerned. Technological change has major human dimensions, such as the flexibility of people called upon to implement it or who are displaced by it and the ability of decision-makers to cope with novelty and assemble new views of the world to fill gaps created by the destruction of past expectations. Innovation requires the mental resources of imagination and creativity as well as computer systems, laboratories and so on. Successful decision-making by households, firms and government bodies depends upon the means by which decision-makers seek to cope with complexity as they go about the business of trying to identify problems in need of solutions, draw up agendas of possibly worthwhile options, choose and then come to terms with what follows, whether it is an occasion for frustration or an event conducive to euphoria: here, an appreciation of underlying motivations, methods of perception, expectation-formation and learning may be of immense use to the information economist. Effective communication may be impossible without well-developed interpersonal skills — including an appreciation of how others think — no matter how sophisticated is the technological equipment at one's disposal. Finally, it must be noted that resources devoted to science policy may be wasted very easily if one has little appreciation of the origins of feelings of well-being in the community or, in the context of improving overseas trade performance, the kinds of attitudes and buying rules that people employ when choosing between domestic and imported products.

The volume under review is edited by a couple from the University of Calgary who are, respectively, an economist and an educational psychologist — a feature which in itself lends credence to the idea that a marriage of the two disciplines is a workable proposition. Although they prefer the working heading of the adjective-noun relationship 'economic psychology', their message is of the scope for symbiosis. For example, in a juxtaposed pair of chapters, economists Lester Taylor and

Tibor Scitovsky suggest how one might look at changes in well-being in relation to changes in the individual's state of arousal. Later on, and with a far stronger empirical perspective, non-economists raise related themes: Shlomit Levy's chapter (on psycho-economic well-being in Israel) notes how limitations in using changes in Gross Domestic Product as a guide to welfare are implied by the psychologist's view that satisfaction depends not only upon the objective level of consumption but also on the discrepancy between it and one's expectations; David Dooley and Ralph Catalano present a very carefully considered review of literature that so far does not enable psychologists to claim conclusively that economic variables generate psychological problems.

Although the book is not as strongly oriented towards this journal's areas of concern as one might hope, it will handsomely repay serious study as a sourcebook of recent work that is potentially adaptable to these contexts. Those who feel attracted to the field due to its scope for laboratory work should not miss the excellent contribution, before the MacFaydens' final brief summing up, by James C. Cox and R. Mark Isaac on the intersection between experimental economics and experimental psychology. This includes some case studies of classic contributions and a discussion of methodological issues, including the strategic disadvantages of devoting time to such work. As Cox and Isaac (p. 660) note:

> The experimental economist at times feels that he is caught in an inescapable paradox. If he reports data which are inconsistent with the received theory, there will be the objection that there must be something wrong with the experiments (that is to say, the experiments must have left out an important assumption, because the assumptions logically imply the "correct" result). On the other hand if he reports data which are consistent with the received theory, the reaction might be along the lines that the research is uninteresting because the results were "obvious and expected".

The editors have done a good job in trying to ensure that economists and psychologists who are unfamiliar with each others' fields will not find themselves out of their depths. They have also provided introductory summaries of each chapter which bridge from one contribution to the next in a manner that helps bring a feeling of unity to the collection without in any way playing down the sheer diversity of ideas and methods that psychologists employ (Heather MacFayden's own piece on 'Motivational Constructs in Psychology' is strongly recommended for the clarity with which it compares and constrasts a huge range of contributions). To a limited extent, the length of the book reflects some duplication between chapters, but such duplication has the merit of making it easier, if one wishes, to sample individual chapters without making extensive use of the index.

For those already familiar with the broad literature of economic psychology, the book may provide occasion for a yawn or two, given the tendency of some of the papers to review what is now well-trodden territory: for example, Zur Shapira goes over the findings of empirical

work by behavioural decision theorists such as Kahneman, Slovic and Tversky[1] that call into question the expected utility model of decision-making under risk and which probably rank as the ones which must give most pause for thought to preachers of the neoclassical methodology of positive economics. Other papers give some of the authors of earlier book-length contributions (including Alhadeff,[2] Allison,[3] Lutz and Lux,[4] and Scitovsky[5]) the chance to summarise their main lines of thinking. These characteristics ensure that the book should be particularly useful for the fledgling economic psychologist or for someone, like myself, who has already worked in the field but who has concentrated on applying ideas from one kind of psychology.

Having tried to give a taste of the general flavour of the book, I will concentrate the rest of my comments on those of the twenty-one chapters which either relate to information or technology themes or which particularly interested or incensed me.

In terms of title wording, the piece most obviously of direct interest to readers of this journal is a highly technical chapter by Ronald A. Heiner, on 'The Economics of Information when Decisions are Imperfect'. Heiner seeks to differ both with conventional choice theory, which presumes optimization, and with many of the critics of it, who have argued on informational grounds that optimization is impossible. His work is likely to seem much more novel to conventional economists than to those familiar with the work of Herbert Simon,[6] and its methodology may also be more appealing to the former group, particularly since his discussion always seems to proceed as if an 'outside observer' is able to identify optimal decisions which the agents themselves may be failing to take. Heiner claims that neither view analyses the possibility that decision-makers may make imperfect use of the information to which they have ready access: he is suggesting that even non-optimizers are normally portrayed as choosing only to use as much information as they can handle perfectly. Decision-makers, like statisticians, risk making two kinds of errors: type 1, where they fail to select the correct action in response to the appropriate messages; type 2, where they may choose actions in response to the wrong information. Heiner wishes most to stress that in his model, unlike most previous work, errors come from within the decision-makers; they do not have to be laid at the door of transactions costs, search costs or problems of asymmetric access to information.

Heiner argues that there are three main reasons why choosers may find themselves unable to make perfect use of pertinent information: first, no matter how simply messages are encoded, there will come a point when the finite channel capacity of the decision-maker starts to produce errors due to receiving more messages than can be handled; second, complex situations, such as gradually changing environments, may be better described in terms of compound messages created from simpler components, but improving the quality of the description makes it harder to interpret; third, the ability of choosers to handle information

may be a function of how closely it seems to relate to their past experience, in other words, how 'local' it is.

All this means that decision-makers face a difficult trade-off: should they go for more detailed information and risk being unable to make good use of it, or should they stick with a smaller amount of information that they can handle with greater reliability? Heiner tries to prove that it will always pay choosers to use more information than they can handle with perfect reliability. (It should be noted that his proof depends upon their errors beginning 'smoothly': his theoretical world is very much the neoclassical economist's world of smooth functions, not the world where an extra piece of information can suddenly produce confusion.) Indeed, he predicts that more competent decision-makers will benefit from trying to make use of more information than their less competent fellows, even though this involves them in using a larger fraction of it imperfectly.

Some interesting applications of this theme are offered by Heiner towards the end of his paper. One of them concerns arguments about the use of simple decision rules versus discretionary management in monetary policy: the case against discretionary policies has usually been made in terms of the unavailability of full and reliable information, whereas, for Heiner, the appeal of using simple rules arises from the increased scope for errors that would arise in attempts to construct very detailed models of the economy. Another application concerns information structures for organizations that have been divided into divisions upon which different environmental disturbances are prone to impact. Is it better for the organization as a whole if each division acts independently, or is it better to try to achieve some coordination of policies, to take account of possible spillover relationships? Heiner's perspective, unlike recent work in team theory, suggests that there will come a point when the size of an organization warrants decomposed policy-making. As in team theory, he assumes the separate divisions are working towards the same goal; his work is therefore to be contrasted with the kind of strategic case for decentralization offered by Kay[7] (following Williamson[8]), who not only discusses the significance of potential information overload for organizational design but also stresses the trade-offs between the pursuit of organizational synergy and the risks of subgoal pursuit if different interest groups are not segemented into rival profit centres.

While Heiner's paper may encourage conventional economists to rethink their information assumptions, two earlier papers in the volume, by Alhadeff and by Allison, seem more likely to encourage complacency in the profession. Both of these papers involve applications of Skinnerian operant conditioning/reinforcement notions in the context of consumer behaviour, and they demonstrate a broad similarity between the psychologists' conflict model (centred on positively reinforcing consequences of choice versus aversive consequences) and the neoclassical choice model (centred on benefits versus costs). Positivistic

neoclassical economists with an aversion to asking consumers about the reasons for their choices may be expected to derive reinforcement if they adopt the feature that distinguishes the behaviourist approach from their usual models of utility maximization. The behaviourist's conflict model makes no mention of preferences as shaping behaviour, for it sees willingness to buy as something which can be modelled purely from repeated experimental observations of behaviour in the face of alternative mixes of positively reinforcing and aversive consequences: behaviour is to be treated as if it is determined by what happens in the decision-maker's environment when particular actions are taken.

The awful jargon of Alhadeff's mainly theoretical paper contrasts with the all-too-explicit discussions provided by Allison of practical experiments involving animals. These are used as means for inferring demand functions for such subjects: for example, the more lever presses rats are required to make per food pellet they receive, the fewer the food pellets they choose to eat. Allison coolly provides his readers with citations of studies involving, among other victims, alcoholic rats, rats that receive reinforcement in the form of injections of morphine or brief trains of electrical stimulation via an implanted electrode, and rhesus monkeys whose reinforcement for pressing a lever comes in the form of cocaine or pentobarbital. I hope that Allison's chapter helps win more converts to the Animal Liberation cause and raises questions about the allocation of funds in scientific research. Moral considerations aside, it is hard to see what use any version of this behaviourist methodology could be for situations where one needs to assess likely behaviour in the face of new technologies and products but where test-marketing exercises cannot be carried out.

A more general worry I have about behaviourism's attempts at objectivity is that people who think differently may construe a given stimulus in very different ways. For example, I once heard the business historian, Professor Peter Payne, recall the following case of unexpected interpretations of an advertisement: executives of the Raleigh Cycle Company thought the purchase of their cycles in early post-war India would be stimulated by posters showing owners of Raleigh cycles successfully pedalling away from pursuing tigers; they were surprised to discover at great cost that the Indian public saw their message not as implying positive reinforcement follows the purchase of a Raleigh cycle, but that Raleigh owners are likely to be chased by tigers!

Those who are worried about going all the way in the alternative direction of subjectivist economic psychology may welcome the chapter on 'Economic Behaviour and Social Learning' by Maital, Maital and Pollak in this volume; for social learning theory sees choices (the chapter takes the case of attitudes to present consumption versus future consumption) as resulting from interactions between the environment, cognition (including the decision-maker's view of his/her own ability to cope with prospective situations) and behaviour (including the behaviour of others, which may be imitated).

My personal favourite from the collection is the chapter by Kenneth Lux and Mark Lutz in which they present a case for building a humanistic approach to economics, with the work of Abraham Maslow[9] as its key source. Maslow depicts people as trying to satisfy a hierarcy of needs, willing only to make marginal substitutions within particular need categories (between different ways of obtaining adequate nutrition, but not between, say, food and hobby expenditure if this would conflict with basic physiological needs).[10] Only once a person's 'deficit' needs (biological, material and social) have been satisfied will that person be expected to set about satisfying his or her 'growth' need for self-actualisation, for transforming his or her self into that which he or she yearns to be.

Lux and Lutz argue that, in modelling people whose lives have reached such a stage, the conventional assumption of maximization subject to a budget constraint is inappropriate: such people are better modelled as 'restrained maximizers' — 'restrained by [their] innermost personal values, articulated by [their] higher-order moral preferences' (p. 396). In other words, only when we don't have to worry about how we are going to meet our basic needs do we start maintaining our moral and personal integrity by following our inner consciences as we deal with conflicts of interest.

Interesting institutional implications for promoting technological progress and the growth of knowledge follow from the humanistic perspective. Professional dedication may be something that it is better not to try to purchase directly if extra cash is not seen as compensating for persisting feelings of insecurity. Thus academic tenure can be seen as an institution to safeguard the heroic quest for truth and attenuate tendencies towards opportunistic research which would exist in a 'publish or perish' environment that offered the lure of higher pecuniary rewards; similarly, lifetime employment arrangements in large Japanese firms promote their workers' feelings of loyalty, discourage them from shirking in the face of light supervision and encourage them to welcome new work regimes even when these upset established practices. More generally, the humanistic approach makes one partial to participative management to encourage commitment, in contrast to the conventional 'stick and carrot' approach.

These suggestions are brought all the more sharply into focus by the next chapter of the book, 'Economic Man vs. Existential Man' by Robert W. Wright. Though the concept of existential man comes from the theologist Paul Tillich,[11] the overlap with Maslow's work is obvious. What is significant for the subject areas of this journal is that the existential view holds that 'technology has contributed to a situation in which [rational, lusting, self-interested] economic man is not just a heuristic device within an intellectual discipline striving for scientific authenticity but he has also become a norm within the western social arrangement' (p. 436). For example, increasing specialization leads society to become divided into isolated segments — as in reductionist

theories of economic man — but society is saved from disintegration by the electronic media which promotes conformity, giving the illusion that this is synonymous with community by creating mass markets for new fashion goods which become symbols of cohesion. From a theological start, Wright's chapter thus moved into Marxian and Weberian sociology — an unexpected turn in a book supposedly on economic psychology but, as a follow-on from arguments for a humanistic view, it made for stimulating and provocative reading. I am glad the editors included it, though I expect it will go down far better with Galbraithians than with technocrats.

To conclude: the sheer scale of this book, and the diversity of the material it covers, is likely to ensure that many economists who read it are left feeling somewhat exhausted and puzzled, wondering how integrationists amongst their number are going to cope with the fragmented nature of psychology. I suspect that the same feeling will not hit readers who are psychologists, for the clear message is given that economics is dominated by the neoclassical school's 'rational economic man'. Psychologists, used to living with multiple models, are more likely to be puzzled by the neoclassical hegemony itself. Economists should take heart from the ability of psychologists normally to be quite well informed on a number of perspectives of relevance to their chosen fields of interest; and they should be prepared to move much more in the direction of a 'horses for courses' philosophy of methodological pluralism. Of course, the worries that economists might have about the wisdom of doing this look anything but trivial in the light of Heiner's remarks about the trade-off between the quantity of information one uses in choice and the reliability with which one processes it; in the end, the boundaries of academic disciplines will be set by cognitive limits, no matter how keen researchers are to engage in the heroic pursuit of knowledge and how free they are of institutional barriers and emotional hang-ups about changing direction.

NOTES AND REFERENCES

1. D. Kahneman, P. Slovic and A. Tversky, *Judgement Under Uncertainty: Heuristics and Biases,* Cambridge University Press, Cambridge, 1982.
2. D. Alhadeff, *Microeconomics and Human Behavior,* University of California Press, Berkeley, CA, 1982.
3. J. Allison, *Behavioral Economics,* Praeger, New York, 1983.
4. M.A. Lutz and K. Lux, *The Challenge of Humanistic Economics,* Benjamin/Cummings, Menlo Park, CA, 1979.
5. T. Scitovsky, *The Joyless Economy,* Oxford University Press, New York, 1976.
6. For example, H.A. Simon, *The Sciences of the Artificial,* M.I.T. Press, Cambridge, MA, 1969.

7. N.M. Kay, *The Emergent Firm: Knowledge, Ignorance and Surprise in Economic Organization,* Macmillan, London, 1984.
8. O.E. Williamson, *Markets and Hierarchies: Analysis and Antitrust Implications,* Free Press, New York, 1975.
9. A. Maslow, *Motivation and Personality,* (2nd edition), Harper & Row, New York, 1970.
10. Lux and Lutz do not note that, even within a given needs category, substitution may be limited if decision-makers choose to rank product characteristics in hierarchical terms in order to get around the informational complexity of choice between multi-dimensional goods. Products that are 'not good enough' on the most important dimension may be excluded from consideration in respect of the second, and so on, until only one is left. For detailed discussions of the literature in this area of economic psychology, see P.E. Earl, *Lifestyle Economics: Consumer Behaviour in a Turbulent World,* Wheatsheaf Books, Brighton, 1986.
11. P. Tillich, *Systematic Theology I,* University of Chicago Press, Chicago, 1951.