

Policy Challenges, Ideologies, and the Evolution of Behavioural Economics

Peter E. Earl

School of Economics, University of Queensland, St Lucia, QLD 4072, Australia

p.earl@uq.edu.au

Abstract

This chapter explores the relationship between behavioural economics and economic policy via five case studies that cover a wide range of policy areas and behavioural insights. First, it considers Katona's work on the macroeconomic significance of shifting consumer confidence and its significance for Keynesian demand-management policies. Second, it considers the rise and fall of the behavioural theory of the firm and *X*-efficiency theory and their relationship with Japanese management systems and neoliberal/managerialist policies of microeconomic reform. Thirdly, it examines behavioural approaches to non-price competition in relation to problems of deindustrialisation in the UK from the 1970s onwards. Fourthly, it considers the 'heuristics and biases' underpinnings of the libertarian-paternalist 'nudge' approach to economic policy and contrasts the nudge philosophy with more education-based 'boost' approaches to enhancing consumer wellbeing. Finally, it considers the potential role of behavioural insights in relation to contemporary environmental challenges.

Keywords: behavioural economics, consumer confidence, libertarian paternalism, managerialism, non-price competition, *X*-efficiency

Introduction

Behavioural economists base their analysis on what is known about how people behave, rather than on axioms chosen for their analytical convenience. The knowledge that they use comes primarily from psychology, experiments, interviews and questionnaires, with introspection and anecdotes playing serious roles for raising questions about the adequacy of conventional economic thinking. Aspects of the behavioural approach date back to Marshall and even to Adam Smith, but it became more noticeable in the 1930s with Keynes's psychologically inspired view of how asset markets function under uncertainty, and with the publication of the first findings of the Oxford Economists Research Group (OERG) via the launch of *Oxford Economics Papers* in 1938. The OERG's work cast doubt on the responsiveness of firms to changes in interest rates (Meade and Andrews, 1938) and suggested that firms set their prices in a take-it-or-leave-it way by adding a mark-up to their costs rather than by equating marginal costs and revenues (Hall and Hitch, 1939). These contributions added weight to the case for using fiscal policy rather than monetary policy to manage aggregate demand and implied that inflation might be explained in terms of changes in costs, as firms would normally tend to respond to increases in demand by raising their output. However, the 'behavioural economics' term only came into use after the end of World War II, so the focus of this chapter is on the intersection between behavioural economics and policy after 1945.

To understand this intersection, it is useful to be aware of the distinction that Sent (2004) has drawn between 'Old' and 'New' behavioural economics. 'Old behavioural economics' (OBE) refers to contributions made prior to 1980, and in a similar vein since then, that have sought to rebuild economics in a way that incorporates ideas from psychology and organizational research and is not anchored to established economic methods. OBE is epitomized by the contributions that earned Herbert Simon the 1978 Nobel Memorial Prize in

Economic Sciences, where the notion of ‘satisficing’ replaces the conventional focus on optimization. ‘New behavioural economics’ (NBE) refers to contributions from around 1980 onwards that seek to make sense of evidence at odds with predictions from conventional economics in terms of ‘bias-inducing heuristics’ that real humans seem prone to use as a means of coping with everyday decision-making challenges. This approach is epitomized by the work that led to the award of Nobel Memorial Prizes to Daniel Kahneman (in 2002) and Richard Thaler (in 2017).

The chapter covers five policy-related areas. The first three are areas addressed in OBE that have practical significance but have been given little attention within NBE. The first case study focuses on the work of George Katona on consumer sentiment and its significance for macroeconomic policymakers. The second case study examines the intersection between the behavioural theory of the firm and the contrasting views taken in Japan and by Western neoliberal politicians about how organizational efficiency can be improved and how rates of national productivity growth can be increased. The third case study shows how ideas from the behavioural theory of the firm were deployed, in conjunction with related thinking in marketing and psychology, to understand how ‘non-price factors’ could create problems for policymakers. The fourth case study then shifts focus to NBE, where the policy philosophy of Thaler and his followers has attracted the interest of politicians despite being criticized for ‘pathologizing’ consumers (Mehta, 2013). The fifth and final case study considers the potential role of behavioural insights for policymaking aimed at addressing contemporary environmental challenges such as the existential threat posed by global warming.

Consumer Sentiment and Macroeconomic Management

Uncertainty makes optimizing decisions about saving to fund future consumption inherently problematic. Consequently, in his *General Theory*, Keynes (1936) offered what was essentially a rule-/habit-based view of saving behaviour whereby people accumulate savings from their unspent income at a rate determined by their 'propensity to consume'. He also presumed that the marginal propensity to consume was a decreasing function of income. In the early post-war period, two lines of psychology-based thinking augmented Keynes's view of the consumption function. One was Duesenberry's (1949) 'relative income hypothesis' which drew on social psychology and focused on how consumers' concerns about their social standing could affect their saving behaviour: he envisaged that consumption would display a ratchet effect when income fell, for people would cut back on saving (and, if necessary, draw down their savings) rather than face the socially ignominy of being seen to fall behind in terms of status. This section focuses on the other psychological perspective, which came from George Katona (1951, 1960), of the University of Michigan's Survey Research Center. It questioned the short-run stability of the propensity to spend.

Katona recognized that, in a modern affluent society, much consumption is discretionary and can therefore be readily postponed. For example, expensive foreign holidays and restaurant meals are not essential right now and can readily be substituted with something cheaper if one 'needs' a break or a meal but is reluctant to run down one's financial assets. Likewise, consumers enjoy discretion about when they replace their cars, for they mostly replace them to get more recent models rather than because their vehicles are now only fit for a wrecking yard. It might therefore seem that aggregate consumption spending is driven by the social pressures that Duesenberry emphasized, and/or by the power of advertising, as Galbraith (1958) argued. However, Katona argued that such pressures to spend could be overwhelmed or augmented by shifts in consumer sentiment. If consumers

became nervous about their prospects, their discretionary spending could suddenly dry up even if their incomes had not fallen and/or they had not run out of opportunities to make credit-financed purchases. A telling example was the 1957–1958 downturn in the USA, which was hard to explain in terms of conventional economic variables and seemed to have more to do with Cold War concerns resurfacing after the USSR demonstrated its technological capabilities by launching its first Sputnik ahead of the USA's first satellite. Conversely, discretionary spending could take off due to non-economic events (even, say, the international success of a national sporting team) that resulted in people feeling good about their prospects. The survey-based index of consumer sentiment that Katona and his colleagues pioneered provided a way of studying the relationship between consumer confidence and spending, with Katona and Strumpel (1976) later showing how, in the mid-1970s US downturn, a fall in consumer sentiment was associated with a fall in spending on consumer durables that preceded the downturn in business investment.

Katona's contribution can be viewed as akin to applying Keynes's (1936, pp. 161–2) view of the significance of 'animal spirits', as a driver of business investment under fundamental uncertainty, to household discretionary spending. It adds weight to Keynes's views about the need for governments to be willing to run fiscal deficits to restore aggregate demand, rather than to pursue austerity policies, if the economy is experiencing a major downturn in activity and tax revenue has decreased. However, Katona's view of consumption poses a problem for those Keynesians who (mistakenly, in the analysis of Keynes's thinking offered by Hutchison, 1977) interpret Keynes as implying that macroeconomic policy could aim to keep 'fine tuning' economies to hold them close to full employment yet free of inflationary pressures. If consumer sentiment is prone to instability that is not always well related to changes in key macroeconomic indicators, there is great scope for policymakers to be surprised by sudden downturns in consumer sentiment and for excess aggregate demand to

emerge due to unexpectedly buoyant consumer sentiment in the event of a macroeconomic stimulus.

Although the University of Michigan's Index of Consumer Sentiment led to the construction of many similar indices, it continues to be compiled (see www.sca.isr.umich.edu/). However, even though indices of consumer sentiment are reported in primetime TV news, the idea that aggregate consumer spending is driven by confidence has barely penetrated academic macroeconomics: it clashes with mainstream approaches that treat macroeconomics as the aggregation of outcomes of micro-level 'rational' choices.

Organizational Efficiency and Productivity

The best-known pre-1980 behavioural contributions were made by Herbert Simon, Richard Cyert and James March, whose research team at what became Carnegie-Mellon University (CMU) focused mainly on the internal operations of firms and other organizations (see Simon, 1947, 1959; March and Simon, 1958; Cyert and March, 1963). Simon's early contributions were much inspired by Chester Barnard's (1938) book *The Functions of the Executive*, which emphasized that leadership skills are crucial for organizational performance as executive authority is granted by workers rather than being guaranteed by the executive's title. Simon assigned a key role to the 'docility' of workers in allowing firms to run smoothly in the direction that managers wish to take them. He saw this as a key issue since employment contracts often lack detail on the outputs that workers are expected to produce for a given weekly salary (Simon, 1951). Output thus has a large discretionary element, with the incentive to perform well coming via scope for enhancing one's promotion prospects by being seen to perform well. The salary-recipient's situation is thus very different from, say, that of fruit-pickers who are paid per kilo of fruit that they pick, or sales staff whose income is mainly from commissions: in the latter cases, the incentive to perform well comes via the

immediate reward of performance-based pay. Simon also challenged the notion that decision-making entails finding optimal solutions; instead, he argued that, because of uncertainty and complexity, people can at best achieve 'bounded rationality' and must 'satisfice', i.e., they get through life by trying to meet aspiration levels that in the long run they adjust to align with their attainments. In the short run, however, aspirations are sticky and actual or expected failures to meet them prompt them to search (initially locally) until they find something that seems likely to serve as a satisfactory means to meeting the goals to which they aspire.

Cyert and March's behavioural theory of the firm takes these themes further by seeing firms as coalitions of stakeholders who benefit from their association with the firm but who have conflicting interests. Hence, although organizational goals may be set by boards and senior managers and may help with coordination and in shaping expectations regarding acceptable performance levels, what really interests the stakeholders are whether they will be able to meet their personal 'subgoals' regarding what they can extract from the organization. However, none of them knows for sure how far they can push their luck when bargaining for a better deal. As a result, in good times, with aspirations lagging attainments, 'organizational slack' develops, with some stakeholders enjoying returns greater than the minimum they view as acceptable given the alternatives available to them. When the going gets tougher, those who see their returns falling below their transfer earnings may be willing to risk experimenting by demanding concessions from others rather than simply moving elsewhere. If they succeed in restoring their prospective returns to satisfactory levels, organizational slack is thereby reduced. Clearly, an important consideration in determining how pushy to be is what one's opportunities appear to be in the external environment. For example, if managers see their counterparts in other organizations enjoying increasingly lucrative remuneration packages, they may be more inclined to risk things backfiring if they try to extract more from their existing organizations without improving their performance.

Cyert and March argue that the complexity of problems that must be addressed in firms results in rule-based decision-making and failures to work out all the trade-offs that decision options entail. Resource allocation tends to reflect departmental interests rather than organizational goals, and goals are attended to sequentially depending on what currently seems the most urgent issue to address (This idea has also been applied to the behaviour of policymakers: see Mosley, 1976, 1984; Drakopoulos, 2004). The failure to consider the collateral implications of the steps taken to meet whichever goal is being focused upon makes organizations prone to appear to ‘go round in circles’ as they give sequential attention to goals. The CMU team saw organizations as cautious, reactive entities who managers engage in ‘uncertainty avoidance’, often by attempting to achieve a ‘negotiated environment’ (for example, by lobbying governments for support and protection). Uncertainty about the returns to many activities (notably to marketing and research and development) results in budgets set via established rules playing key resource allocation roles and becoming focal points for attention during intra-organizational bargaining.

The CMU team’s work was complemented by more explicitly policy-related contributions of Harvey Leibenstein (1966, 1976, 1989) focused on what he called ‘X-inefficiency’. This term essentially refers to what most non-economists would mean if they said that an organization was operating inefficiently, namely that its productivity levels were below those that ought to have been possible given the resources at its disposal. Such a view of efficiency clashes with the conventional economist’s presumption that firms maximize their profits, so economists normally view inefficiency in terms of deadweight losses of consumer surplus that result from relative prices being distorted by market imperfections.

Leibenstein argued that economists often underestimated the welfare losses associated with monopolies or protectionist trade policies because they assumed that observed cost levels of firms were the lowest that were possible. He contended that, especially where firms

enjoyed monopoly advantages or were shielded by tariffs and/or quotas, they were likely to be operating with higher costs than they might have achieved in the face of stronger competition. Managers are not always aware of current best-practice production methods, and they cannot monitor everything that their subordinates do. Those that report to them may therefore be enjoying a quiet life, taking advantage of the vagueness of their employment contracts while mindful that those who set out to perform conspicuously well risk being ostracized for breaking social norms regarding reasonable performance levels. The same argument applies at any level in an organization with multiple layers of management, so even CEOs and board members might be able to find ways for the firm to do better, to the benefit of shareholders and customers, if they were more motivated to do so.

However, as Loasby (1976) has pointed out, Leibenstein failed to give attention to the benefits of the vagueness in employment contracts: though fuzzy contracts facilitate subgoal pursuit, they are cheap to design, and they provide flexibility when surprises occur. Loasby also notes (as does Martin, 1978) that Leibenstein underplays the distributional issues that a reduction in *X*-inefficiency may entail: many consumers are workers, too, and benefits in terms of cheaper products may come at the cost of long-term unemployment or a more exhausting, more stressful life at work. Reductions in *X*-inefficiency may benefit some, harm others and leave yet others neither better nor worse off once things have settled down, and the adjustment costs may also be significant.

In sum, the behavioural approach to the firm views productivity as depending not merely on the quality of equipment and the capabilities of employees but also on the motivation of employees to concentrate on producing output and discovering better production methods. Rather than viewing productivity growth merely as a matter of buying better equipment and hiring more capable workers, the behavioural perspective implies that

there is also potential to achieve it via three types of policy interventions (see also Cyert and George, 1969).

First, there is the 'stick' approach. This entails toughening up the competitive conditions that decision-makers face, thereby forcing them to perform better in some areas to continue to be able to meet their aspirations. The stick approach is evident in neoliberal/conservative/'managerialist' policies that entail:

- market deregulation (e.g., allowing new entry and reducing the amount of bureaucratic 'red tape' that entrants have to deal with).
- removing protectionist trade policies and public sector monopolies (often in conjunction with the corporatization and subsequent privatization of the former monopoly entities).
- opening input sourcing to bids from external suppliers (not just for services that have traditionally been performed in-house but also in filling vacant job slots externally rather than relying on internal labour markets).
- rehiring staff on fixed term contracts with detailed KPIs (key performance indicators), and measures aimed at breaking the bargaining power of labour unions.

From the behavioural standpoint, these kinds of measures can also be viewed as conducive to increasing productivity and reducing real labour costs by increasing worker docility, especially in conjunction with the tightening up of eligibility requirements for unemployment benefits and reductions in the real value of these benefits: fears about being unemployed for long periods would concentrate the minds of workers on being more cooperative with their bosses.

An alternative ‘stick’ approach, that goes against the neoliberal mindset, is to use regulations to promote search activity. Indeed, even if regulatory policies are introduced to serve ends other than productivity growth, they may still impact on the latter. An example of this is evident in Loasby’s (1967) study of industrial location policies in the UK: firms that were prevented from expanding unless they did so in depressed areas were sometimes surprised to discover much cheaper ways of operating when they put their minds to dealing with the restrictions that the policies entailed.

The second way of promoting productivity growth is the ‘carrot’ approach that involves providing performance-based rewards to motivate employees to perform more with a view to organizational goals rather than their personal subgoals. This has been central to neoliberal/conservative government policy platforms, too, typically in the highly regressive form of cuts in taxes on profits and reforms to personal tax systems that not only reduce marginal rates of income tax but also favour performance-based executive remuneration packages built around stock options. But less regressive systems for aligning employee interests with long-run corporate goals focused on rapid technological change and productivity growth can also be designed. Large firms in Japan devised precisely such a system during the period in which the behavioural theory of the firm was being worked out. It entailed an inclusive system of company-based unions, seniority-based pay, lifetime employment, allowing line workers to participate in decision-making, and paying everyone significant annual bonuses based on the firm’s performance (see Adams and Kobayashi, 1969; Dore, 1973; Gao, 1998).

The third approach complements Barnard’s (1938) emphasis on the leadership role of executives in creating dynamic organizations. It entails using what we might call ‘coaching’ methods, akin to those used in sport, to promote a ‘We can do better’ mentality via education and exhortation that uses examples and benchmarking studies of the success of others whose

ambitions and strategies might be emulated. This approach has appealed to social democrats and others who place less faith than neoliberals in ‘free’ markets. At the government level, it is evident in the creation of government departments that focus on identifying areas where performance could be improved, bringing them to the attention of relevant parties and trying to coordinate the setting of more ambitious industry-wide targets. Examples include some of the activities of the Ministry of International Trade and Investment in Japan over many decades and the role of the National Economic Development Office in the UK (cf. the start of the next case study in this chapter). However, the earliest instance is probably the use of agricultural extension schemes, whose history long predates the behavioural theory of the firm. Where firms or entire economies are facing major problems, the role of ‘coaching’ may be extended to include leadership activities aimed at generating hope, to deter an exodus of key personnel whose loss would hamper potential for recovery (Wallis, Dollery and Crase, 2009).

Although the examples above align with implications that might be drawn from the work of Simon, Cyert and March, and Leibenstein, there is little evidence to suggest that these policies were inspired by their work. The Japanese management systems were created in parallel with the work at CMU and, according to Gao (1998, pp. 97–8), this was in the context of encouragement from ministerial technocrats whose inspiration (and, sometimes, doctoral training) came from Schumpeter. (In academic economics, the OBE and Schumpeterian literatures on firms and industrial evolution were eventually merged in the seminal ‘neo-Schumpeterian’ work of Nelson and Winter, 1982, but this synthesis remains outside the mainstream.) In the West, behavioural perspectives on the firm were certainly taught in the 1970s and early 1980s in university courses on industrial economics (cf. the textbooks by Pickering, 1974, especially chapter 6, and Hay and Morris, 1979, especially pp. 67–70, 248–251). However, the inspiration for the policies introduced after the electoral

successes of Margaret Thatcher and Ronald Reagan seems to have been ideas drawn from Adam Smith, Friedrich Hayek and Milton Friedman about the power of competition for enhancing social welfare in a world of self-interested individuals.

Interest in the behavioural analysis of organizations largely petered out in academic economics while neoliberal ‘reforms’ were being implemented (the exception was in evolutionary economics, within Nelson and Winter’s neo-Schumpeterian synthesis). This occurred despite Herbert Simon being awarded the 1978 Nobel Memorial Prize in Economic Sciences for his work on decision-making in organizations, and despite organizational economics becoming a hot research area in the 1980s and 1990s. In essence what happened was that rather than adopting Simon’s satisficing perspective, mainstream economists developed their own analysis of organizations. They accepted that stakeholders differ in their interests and that this can affect organizational performance, but their focus became one of designing optimal incentive structures for self-serving optimizing agents, to ensure that the latter best served the principals that hired them. Examples of this ‘agency theory’ approach influencing policymakers are easier to find, as with the Harvard PhD-based book by Murray Horn (1995), published while he was Secretary to the New Zealand Treasury. Agency theory was essentially static, for it lost sight of the role of problem-driven search in generating knowledge of better ways of doing things. Decades passed before attempts were made to infuse agency theory with insights from behavioural economics (see, for example, Kaufman and Englander, 2011; Pepper and Gore 2015).

Non-Price Competition and Non-Compensatory Decision-Making

In the late 1970s, as the UK manufacturing sector was increasingly struggling against competition from Germany and Japan, and as neoliberal ideas were gaining political traction, the UK’s National Economic Development Office (NEDO) published a provocative report on

research undertaken by a team led by its Economics Director, David Stout (1977). The report argued that the widespread focus on achieving productivity improvements – and hence cost and price reductions relative to overseas rivals – as the solution to the UK’s economic malaise was coming at the expense of neglect of the significance of ‘non-price factors’ in shaping trade in manufactured products. Successful attempts to improve efficiency might increase cost competitiveness without solving the balance of trade problem insofar as the problem with UK exports commonly was not that they were too expensive but that the products themselves were deficient.

At that time, the best-known economic analysis of consumer behaviour that focused on the characteristics of products was the model that Lancaster (1966) had developed. However, Lancaster’s model was built around a utility function that assumed consumers have decreasing marginal rates of substitution between characteristics. With relative prices determining how much a budget could buy in terms of characteristics if spent on one product rather than another, or combinations thereof, the model implied that cheaper domestically-manufactured products would enable buyers to get a better ‘bang for their bucks’. Hence, so long as British workers were prepared to tolerate slower real wages growth than their counterparts in countries whose firms offered products that excelled in non-price terms, a lower exchange rate and productivity improvements would enable the UK to pay its bills by following the maxim that ‘If you can’t sell good goods, sell cheap goods’ (Posner, 1978, p. 51). This line of argument was not conducive to the 1979 Thatcher government taking up NEDO’s concern about the significance of non-price factors, or subsequent suggestions that product design needed to be taken much more seriously (Schott, 1984), and that British firms needed to develop a much stronger marketing orientation and focus on finding out what buyers wanted rather than simply offering the products that engineers devised (Doyle, 1985).

From the Lancaster/Posner standpoint, the only way that non-price shortcomings can trump any price reduction is where the cost of *using* the product exceeds the combined capital and operating costs of its technically superior alternatives: in such a situation, no one will have a use for the product even if they are given it for free. This exception has had practical significance in the shift to digital technologies, such as with the switch from analogue Strowger and TXE4 telephone exchange technologies to the digital System X technology from the late 1970s, and the switch from film-based photography to digital imaging as digital camera costs tumbled in the early 2000s. But the NEDO research can be read as implicitly suggesting that there can be other situations in which policies intended to facilitate relative price adjustments by achieving lower costs would fail, even if they resulted in substantial productivity improvements. To understand what these ‘other situations’ might be, it helped if one reflected on consumer behaviour mindful of the behavioural theory of the firm.

Like hedonic pricing models that seek to predict prices as an additive function of product characteristics, Lancaster’s model abstracted from the cognitive challenges entailed in trading off the non-price characteristics and prices of rival products to arrive at overall scores by which they can be ranked. This could be especially important in situations where many rival products were available and these products differed significantly in terms of many characteristic dimensions. There was an obvious lesson to take from Simon’s satisficing analysis and Cyert and March’s view of firms as setting aspirations for multiple goals that they pursued sequentially: it might be wise to think of decisions about which product to buy as being made in a satisficing way that involves a hierarchical filtering process in which products are successively eliminated if they fail to meet any of the buyer’s targets. From this standpoint, the product that survives the biggest number of these aspirational tests, in order of priority, is the one that gets purchased. Search continues if the would-be buyer rules that none of the options has survived enough of the tests. If two or more products tie, a further rule is

needed to complete the process. This rule might indeed be price-based – such as ‘if there is a tie, choose the cheapest of the products that have tied’ (which ignores cheaper products that have already been rejected on non-price grounds) – but it might not be. For example, a car buyer might instead choose the product whose range of colour options includes the most appealing paintwork, having already deemed all the tied contenders to be ‘cheap enough’. This is rather like making the final choice based on the presence of what marketers nowadays call a ‘USP’, i.e., a unique selling point (or unique selling proposition), that had not been on the priority list but which appeals to the buyer when drawn to his or her attention (cf. Trout, 2008, chapter 3).

This view of how consumers deliberate when they suffer from bounded rationality was branded as ‘characteristic filtering’ in Earl (1983) and then used in Earl (1984, pp. 195–7) as a basis for discussing the NEDO findings. It allows a single substandard area of performance to be a ‘deal-breaker’, regardless of how well a product performs in higher-priority tests (so long as it passes them) and regardless of how well it would have performed in lower-priority tests from which it is excluded. In terms of conventional economic thinking, it entails irrational intolerance and ignores relevant information, yet it is economical in its demands on the decision-maker’s computational and short-term memory capacities. It provides a plausible means towards understanding the UK car industry’s loss of market share in the late 1970s insofar as UK-built cars were viewed as, say, too unreliable (especially if reliability had a high priority) or inadequately equipped with ‘standard’ features compared with Japanese vehicles that may have been only just adequate in areas such as space utilization, ride and handling but ‘ticked more boxes’ in terms of interior ‘bells and whistles’. Similarly, the collapse of the UK toy industry in the early 1980s might plausibly be explained in part by non-price shortcomings that resulted from UK toy designers not appreciating what children were expecting products to offer. For example, most children may have had rather

low aspirations regarding how accurately scale-model cars represented their full-size counterparts; instead, their main concern may have been with how the models performed in school playgrounds. If so, Meccano's decision not to license the 'hot wheels' technology (Brown, 1993, p. 599) to make its Dinky Toy models roll faster, and for longer distances, would have been a big mistake, even though this technology made model cars look less realistic.

If potential buyers are rejecting products because of their non-price shortcomings, the implication for suppliers is simple: they need to bring the quality of their products up to the standards that the buyers set; cutting prices will not change the behaviour of these buyers. If non-price factors are causing balance of trade problems, tariffs or currency depreciations may only be effective if they result in imported rival products becoming viewed as 'too expensive', leading consumers to forego some of their non-price aspirations if they are to purchase products that come into their budget ranges. More effective policies may entail the use of quotas and bureaucratic hurdles for importers, or the imposition of local design rules that local products can already meet but which imported rivals will only be able to meet after their manufacturers have incurred significant costs. But the significance of deal-breaker elements in decision-making has wider ramifications for policymakers, as in the following four examples (see also Brooks, 1988).

First, deal-breaker elements may make it impossible to form effective political coalitions or resolve industrial relations problems. Secondly, such elements may arise on both sides of the labour market: for example, if jobs are considered 'too dangerous', 'too remotely located', etc., offering more pay may not increase the rate of applications from applicants who have the specific skills that are required. Thirdly, consider the difficulty of undertaking cost-benefit analysis on new infrastructure projects if those whose properties would have to be demolished to make way for them say, without attempting to extort more compensation,

that they ‘would not move for the world’ because they believe that ‘money can’t buy’ an acceptable alternative to the life they have built for themselves at their current location. Finally, note that deal-breaker rules may be manifestations of personal operating principles that embody normative views of the world that have policy significance, as with the behaviour of those who were generating externalities for the wider population and sometimes even had to give up their jobs, because they refused, on principle, to be vaccinated against the COVID-19 virus.

The ‘characteristic filtering’ view of choice complemented a neglected view of consumer behaviour proposed by Ironmonger (originally in 1961, but not published until 1972) to make sense of observed changes in patterns of consumer behaviour after the introduction of new commodities. His analysis had some features in common with Lancaster’s work but viewed consumer choices as based on a hierarchically ordered set of satiable wants. It was not inspired by Simon’s thinking and instead can be viewed as having formalized a long-standing hierarchical view of choice, shifting that view’s focus to product quality and what makes consumers switch to new products. (For surveys of hierarchical perspectives on choice and the place of hierarchical perspectives in the history of economic thought, see Drakopoulos, 1994, and Drakopoulos and Karayianis, 2004.) However, Ironmonger had not explored the significance of his analysis for international trade policy and focused mainly on changing patterns of demand for generic categories of products rather than on the demand for the different within-genre varieties that manufacturers offered.

It is important to note that the ‘characteristic filtering’ perspective owed much to Simon-inspired thinking in marketing (notably Bettman, 1979) that focused on the information-processing heuristics that buyers use. Within the latter literature, on what are labelled ‘non-compensatory’ decision rules, it is acknowledged that there are several other ways by which buyers can end up operating in an intolerant manner. One is to use a

‘conjunctive’ approach, which entails rejecting any product that does not match up to a complete set of requirements. This approach might function as a shortlisting technique, with a Lancaster-style trade-off then being applied to the more computationally manageable set of options that ‘tick all the boxes’ but differ in how they over-achieve, whereas characteristic filtering obviously provides a way of dealing with cases where nothing is adequate in conjunctive terms. The marketing perspective also admits the possibility of buyers taking a ‘disjunctive’ approach, i.e., being obsessed with finding the best performer in terms of a single characteristic, regardless of how it performs in other areas. If this produces a tie, the buyer may switch to a ‘lexicographic’ heuristic that works in hierarchically, like characteristic filtering, but does not entail the use of performance targets. Instead, it operates like a stack of disjunctive tests, with the buyer taking options that tie as best on the top-priority test on to the characteristic with the second-highest priority, and on to the third-highest priority, etc., if there is another tie between any of the options that had tied in terms of higher-priority characteristics. (The ‘lexicographic’ notion is commonly mentioned briefly in microeconomics to illustrate alternative, questionable preferences in the good space: the consumer is portrayed as looking for the bundle that contains the biggest quantity of the first-priority good regardless of whatever else is in the bundle; if there is a tie, bundles are ranked according to which dominates in terms of the second-priority good, and so on. See, for example, Deaton and Muellbauer, 1980, p. 27; Malinvaud, 1972, p. 20.)

Characteristic filtering is easy to confuse with the notion of ‘elimination by aspects’ (EBA) explored by Tversky (1972). EBA works in a filtering way, too, but the decision-maker is viewed as assigning weights to characteristics based on their importance, with these weights determining the *probabilities* of characteristics coming to mind first, second, third, and so on, in the filtering process. In other words, the decision-maker choosing via EBA does not apply decision criteria based on a hierarchical ordering of requirements, and the choice

process may be highly path-dependent, with the outcome depending on what triggers the order in which characteristics come to mind.

However, despite the long-standing interest of some economics and marketing scholars in hierarchical/non-compensatory ways of taking decisions, mainstream economists remain impervious to such thinking, maintaining their core principle that ‘everyone has their price’. It seems as though they are not merely unaware of research by leading marketing scholars that finds strong evidence of non-compensatory decision-making, especially when people are under cognitive pressure (the classic study is Payne, Bettman and Johnson, 1993); it also seems that their habits of thought are so ingrained they fail to notice widespread evidence in everyday life that can be taken to imply that the substitution principle is a gross over-generalization – evidence such as people referring to ‘box-ticking’ ways of choosing, products that they rejected due to having ‘too much’ or ‘not enough’ of particular features, claiming that they simply ‘do not like’ some products, making principles-based choices (such as ‘becoming a vegetarian’), or seeming to experience satiation in some areas and then shifting their focus to commodities with different kinds of characteristics regardless of changes in relative prices.

Nudging Decision-Makers and Boosting Decision-Making Capabilities

As Thaler (2015) has recounted, the origins of his remarkably successful version of behavioural economics came via a fortuitous chain of events that began in the mid-1970s with his interest in how people make decisions about high-risk job opportunities. He thereby came across research on risk-taking that had been conducted by Kahneman and Tversky and their colleagues via lab-based experiments focused mainly on hypothetical lottery choices (see Tversky and Kahneman, 1974; Kahneman, Slovic and Tversky, eds, 1982). They had found that people assess risks and choose in ways that differed systematically from the

dominant subjective expected utility (SEU) model: it appeared that people dealt with the cognitive challenges of taking decisions by using a large set of heuristics that ‘biased’ their behaviour away from what SEU theory asserted a ‘rational’ decision-maker should do – rather, we might say, in the way that a vehicle with poor wheel alignment will pull to one side. The heuristics in question included using gain/loss reference points rather than comparing overall values (and assigning losses roughly twice the score, in disutility, that they would assign, in utility, to a similarly sized gain), factoring sunk costs into their choices, allowing evaluations to be unduly affected by initial anchor points and how options were framed, generalizing from very limited knowledge, and overweighting low probability outcomes while underweighting high probability outcomes. Systematic incompetence in the handling of statistics was widespread (e.g., in handling compound probabilities). Kahneman and Tversky’s (1979) prospect theory incorporated many of these behavioural regularities and thereby posited an *S*-shaped utility function that is steeper for losses than for gains and whose inflexion point is at the reference point used in dividing gains from losses.

Thaler realized that the prospect theory utility function had many interesting applications for risk-free choices. His research programme (outlined in Thaler, 2015) explored these applications and focused on exposing other aspects of everyday life that were anomalous in terms of conventional economic thinking and which could be explained as resulting from the use of specific heuristics. The only notable point of intersection between his work and research of the kind considered in the previous two sections of this chapter was that he saw people as using heuristic methods in choosing due to the cognitive challenges they faced. The Simon-inspired contributions to behavioural economics focus on heuristics in terms of the sets of decision rules that people experiment with on a personal basis and/or share socially – operating rules whose impacts range from those that are highly effective (as in Gigerenzer *et al.*, 1999) through to needless underachievement. By contrast, Thaler-style

behavioural economics focuses on heuristics that are inherited dysfunctional aspects of human nature – hence Mehta’s (2013) accusation that the approach ‘pathologizes’ consumers. Moreover, the dysfunctionality of the heuristics that are studied is relative to what a ‘fully rational’ economic agent is expected to do, rather than in terms of, say, attainment levels that can readily be achieved amid the pressures and constraints of the decision environment. But Thaler’s methodology has proved fertile, and its findings have been both engaging and hard for mainstream economists to ignore. As a result, courses on this kind of behavioural economics have been incorporate with great success into university curricula.

Growing insight into the predictable effects of these aspects of human nature did not lead Thaler to advocate policies that sought to use regulatory interventions to protect people from their decision-making shortcomings; rather, he started to design policies that exploited human shortcomings in ways that would improve welfare. Most notably, Thaler and Benartzi (2004) devised the ‘Save More Tomorrow’ plan for increasing retirement savings. Instead of requiring Americans to lock up a percentage of their income in a retirement saving fund (in the way that, say, Australians have been required to do), the plan took account of default bias by offering workers plans that they were enrolled in by default, so that they had to make the (small) effort of ticking the opt-out box if they did not wish to participate. The likelihood of opting out due to loss aversion was countered by subtracting savings from increases in income rather than from the level of income being received at the time the decision to accept the default or opt-out had to be made. It was simple, left Americans to make their choices, and it worked.

Around the same time, with his lawyer colleague, Cass Sunstein, Thaler came up with the term ‘libertarian paternalism’ to describe this approach to policy, which they framed in a popularizing way in their book *Nudge* (Thaler and Sunstein, 2008) as entailing designing ‘choice architecture’ to prompt – but not require – behaviour that would be welfare-

enhancing. The thinking here was that whenever a choice is presented to decision-makers, it must be framed somehow, so it should be framed in a way that the policymaker has reason to believe will be beneficial to the target group rather than prone to result in them making needlessly poor choices.

Thaler and Sunstein accept that nudge-style policies warrant ethical scrutiny given that such policies are designed to shape behaviour without the underlying strategy being explained. They envisaged that this could be part of a pilot phase of using randomized control trials to test whether planned nudges are effective. The subjects who had been in the nudge treatment groups would be informed about what had been going on and asked how they felt about it in the light of how they ended up behaving. One could also inform subjects in control groups that they had been part of an experiment, explain how those in the nudge group tended to behave differently, and ask the control subjects how they would have felt to have been nudged. Insofar as the dominant view of participants in the experimental trial is that being nudged in the manner in question is not a problem and produced benefits, then the policy would be said to have passed the subjects' 'as judged by themselves' ethical test and be suitable to implement as intended. All this sounds fine in principle, but we might, like Sugden (2018), be concerned that governments will fail to follow this procedure in practice, especially where they stand to benefit from changing their constituents' behaviour. This was precisely the situation in the first nudge-based policy designed by the UK's Behavioural Insights Team, which sought to increase the submission rate of personal income tax returns via a letter that played upon the social conformity heuristic by informing the recipients that they were in a small minority who were running late with their tax returns (see Thaler, 2015).

Although nudges may (as with the late tax letter) be very cost-effective means for producing some of the behaviour changes that policymakers seek, there is a risk that focusing on them will divert attention from potential payoffs to investing in enabling people to make

better decisions. For example, if people are by nature prone to be very inept when gathering data and attempting to draw inferences from data, we might be wise to consider training them in statistics as part of the school curriculum and supply them with data (or knowledge about how they may easily find relevant data) that a statistician would see as providing a basis for drawing reliable inferences to inform their choices (see further Gigerenzer, 2015). Likewise, if we can discover what Gigerenzer *et al.*, (1999) call ‘fast and frugal’ heuristics for taking decisions in particular contexts, we might be able to build policies around informing people about these heuristics. In other words, instead of taking human shortcomings as given by nature, we may be able to help people by, in effect, providing them with new apps to add to the repertoires of rules and heuristics that comprise their personal operating systems for coping with life. Instead of covertly seeking to manipulate people in a paternalistic manner, we may openly seek to ‘boost’ their decision-making capabilities (see further, Grüne-Yanoff and Hertwig, 2016).

Countering Environmentally Destructive Lifestyles

The four preceding sections all yield behavioural insights that are relevant for policymakers who are wrestling with contemporary environmental challenges. Some of these insights come from a single area. For example, the behavioural approach to the firm implies that, in the absence of regulatory policies, firms that can meet their aspirations via their existing techniques and products may delay making environmentally helpful changes that would lead them to discover ways to increase their productivity and profitability (cf. the ‘Porter hypothesis’: see Porter and van der Linde, 1995a, 1995b; Ambec *et al.*, 2013). In other cases, diverse behavioural insights can be used together when designing and sequencing sets of policy measures.

Consider the uptake of battery electric vehicles (BEVs). Range anxiety and ambitious range aspirations may be major non-compensatory impediment to consumers switching to BEVs even if they have the funds to do so. If so, it is better for governments to invest in battery-charging infrastructure rather than to provide subsidies to such consumers. Governments should expect discontinuities in the BEV uptake trajectory as popular range targets (say, 400km/charge) are met by vehicles that are deemed cheap enough. Thaler's (1985) insights regarding 'mental accounting' may be applicable, too, in relation to managing views about how expensive electric vehicles are, as people may tend to keep the purchase and running costs of their cars in separate mental compartments. A \$70,000 BEV could thus seem unacceptably expensive to those who are used to spending \$45,000 on a car and \$100 per week on fuel. However, such thinking might not be an impediment to BEV adoption if the product can be sold on a 'battery not included' basis for \$45,000 and the battery leased separately for less than \$100 per week. However, we should recognize, via Katona, that consumers will hold back from making investments in expensive environmentally friendly durables if they lack confidence about their financial situations and whether it is wise to invest in such products now rather than waiting for technological improvements. Yet there is the risk that strong consumer sentiment will merely fuel spending that increases environmental footprints if policymakers do not devise effective ways to ensure that consumers keep in mind the environmental consequences of their lifestyles.

There is considerable scope for policies designed to do the latter by triggering emotions such as fear, anxiety, and guilt (for example, in parents whose environmental choices will affect their children's lives). However, although marketing has long taken account of the psychology of emotions, most behavioural economics have been slow to give attention to emotions (despite suggestions in Earl, 1983). Meanwhile, marketing-savvy politicians (such as the Australian Prime Minister, Scott Morrison in the 2019 federal

election) have been able to cultivate support by using fear appeals based on the losses that voters will incur in a transition to more sustainable living. Seen from the standpoint of Thaler-style behavioural economics, such conservative ruses are likely to get traction via both loss aversion and present bias (i.e., gross overweighting of immediate benefits and costs due to people tending to discount in a quasi-hyperbolic manner rather than exponentially).

There is plenty of scope, too, for using nudges and boosts to reduce human environmental impacts. Indeed, some public utilities worked out how to do this before *Nudge* was published: for example, during the 2007 Queensland drought, the water supply utility in Brisbane did not use the regressive strategy of raising prices to conserve water; instead, it successfully nudged and coached customers to be more careful with their water use. Water bills were designed to show customers whether they were exceeding socially normal rates of usage, as well as indicating that ‘please explain’ letters would be sent to those whose usage rates seemed unreasonable; informative leaflets on ways of reducing demand were also sent with bills.

However, there is the risk that in the face of complexity, policymakers and the general population will anchor their views of the environmental challenge on reducing carbon emissions and avoiding water shortages, and thereby lose sight of many of the lifestyle changes that are necessary if life on Earth is to become sustainable while inequality is reduced as per capita incomes are increased in developing countries. Consumers in affluent nations will need to learn how to enjoy life by taking more leisure and consuming less. ‘Happiness economics’, an area of behavioural economics not considered in this chapter, has a vital role to play here on the way to appropriate policymaking, as does an enhanced understanding of how people form their aspirations and how their views of acceptable behaviour evolve (see further Earl, 2022, chapter 13).

Conclusion

Some readers may be surprised by how much of this chapter has been devoted to areas of behavioural economics that have not achieved the widespread currency among both policymakers and academic economists that has been achieved by the kind of behavioural economics that Thaler fostered from 1980 onwards. If so, they should consider whether they are implicitly assuming that the market for economic knowledge functions efficiently rather than being distorted by the operating heuristics that economists employ to cope with the impossibility of reading everything that economists have written. These heuristics result in contributions remaining unknown because they are not picked up by search rules or get dismissed if they conflict with core axioms and operating rules. The non-fashionable behavioural perspectives covered here (and others that a longer work would also have covered) have not been rejected empirically and they can be useful for policymakers. But they will continue to have limited impact if those who practise the currently fashionable approach to behavioural economics do not incorporate them in an integrative approach to behavioural economics (as is offered in Earl, 2022) and instead concentrate on identifying and explaining behaviour that is at odds with what a ‘fully rational’ agent would supposedly do. If they gave up anchoring their research to that reference point and sought also to understand effective ways of behaving in the real world in terms of rules and heuristics, they would have a wider range of areas in which they could offer behavioural insights to policymakers.

References

Adams, T. F. N., & Kobayashi, N. (1969). *The World of Japanese Business*. London: Ward Lock.

- Ambec, S., Cohen, M. A., Elgie, S., & Lanoie, P. (2013). The Porter hypothesis at 20: Can environmental regulation enhance innovation and competitiveness? *Review of Environmental Economics and Policy*, 7(1), 2–22.
- Barnard, C. I. (1938). *The Functions of the Executive*. Cambridge, MA: Harvard University Press.
- Bettman, J. R. (1979). *An Information Processing Theory of Consumer Choice*. Reading, MA: Addison–Wesley.
- Brooks, M. A. (1988). Toward a behavioral analysis of public economics. In P. E. Earl (ed.), *Psychological Economics: Development, Tensions, Prospects* (pp. 169–188). Boston, MA: Kluwer Academic Publishers.
- Brown, K. D. (1993). The collapse of the British toy industry, 1979–1984. *Economic History Review, New Series*, 46(3), 592–606.
- Cyert, R. M., & George, K. D. (1969). Competition, growth and efficiency. *Economic Journal*, 79(313), 23–41.
- Cyert, R. M., & March, J. G. (1963). *A Behavioral Theory of the Firm*. Englewood Cliffs, NJ: Prentice-Hall.
- Deaton, A., and Muellbauer, J. (1980). *Economics and Consumer Behaviour*, Cambridge: Cambridge University Press.
- Dore, R. P. (1973). *British Factory, Japanese Factory: The Origins of National Diversity in Industrial Relations*. Berkeley and Los Angeles, CA: University of California Press.
- Doyle, P. (1985). Marketing and the competitive performance of British industry: Areas for research. *Journal of Marketing Management*, 1(1–2), 87–98.
- Drakopoulos, S. A. (1994). Hierarchical choice in economics. *Journal of Economic Surveys*, 8(2), 133–153.
- Drakopoulos, S. A. (2004). Satisficing and sequential targets in economic policy: A politico-

- economic approach. *Contributions to Political Economy*, 23(1), 49–64.
- Drakopoulos, S. A., & Karayiannis, A. D. (2004). The historical development of hierarchical behaviour in economic thought. *Journal of the History of Economic Thought*, 26(3), 363–378.
- Duesenberry, J. S. (1949). *Income, Saving and the Theory of Consumer Behavior*. Cambridge, MA: Harvard University Press.
- Earl, P. E. (1983). *The Economic Imagination: Towards a Behavioural Analysis of Choice*. Brighton: Wheatsheaf.
- Earl, P. E. (1984). *The Corporate Imagination: How Big Companies Make Mistakes*. Brighton: Wheatsheaf.
- Earl, P. E. (2022). *Principles of Behavioral Economics: Bringing Together Old, New and Evolutionary Approaches*. Cambridge: Cambridge University Press.
- Galbraith, J. K. (1958). *The Affluent Society*. London: Hamish Hamilton.
- Gao, B. (1998). Efficiency, culture, and politics: The transformation of Japanese management 1946–66. In M. Callon (ed.), *The Laws of the Markets* (pp. 84–115). Oxford: Blackwell/The Sociological Review.
- Gigerenzer, G. (2015). On the supposed evidence for libertarian paternalism. *Review of Philosophy and Psychology*, 6(3), 361–383.
- Gigerenzer, G., Todd, P. M., & the ABC Research Group (1999). *Simple Heuristics that Make Us Smart*. New York: Oxford University Press.
- Grüne-Yanoff, T., & Hertwig, R. (2016). Nudge versus Boost: How coherence are policy and theory? *Minds and Machines*, 26(1–2), 149–183.
- Hall, R. L., & Hitch, C. J. (1939). Price theory and business behaviour. *Oxford Economic Papers*, 2(May), 12–45.

- Hay, D. A., & Morris, D. J. (1979). *Industrial Economics: Theory and Evidence*. Oxford: Oxford University Press.
- Horn, M. (1995). *The Political Economy of Public Administration: Institutional Choice in the Public Sector*. Cambridge: Cambridge University Press.
- Hutchison, T. W. (1977). *Keynes Versus the Keynesians ...?: An Essay in the Thinking of J. M. Keynes and the Accuracy of its Interpretation by his Followers*. London: Institute of Economic Affairs.
- Ironmonger, D. S. (1961). New Commodities and Quality Change in the Theory and Measurement of Consumer Behaviour. PhD Thesis, University of Cambridge.
- Ironmonger, D. S. (1972). *New Commodities and Consumer Behaviour*. University of Cambridge, Department of Applied Economics Monographs, No. 20. Cambridge: Cambridge University Press.
- Kahneman, D., Slovic, P., & Tversky, A. (eds.). (1982). *Judgement Under Uncertainty: Heuristics and Biases*. Cambridge: Cambridge University Press.
- Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263–291.
- Katona, G. A. (1951). *Psychological Analysis of Economic Behavior*. New York: McGraw-Hill.
- Katona, G. A. (1960). *The Powerful Consumer: Psychological Studies of the American Economy*. New York: McGraw-Hill.
- Katona, G. A., & Strumpel, B. (1976). Consumer investment versus business investment. *Challenge*, 18(6), 12–16.
- Kaufman, A., & Englander, E. (2011). Behavioral economics, federalism, and the triumph of stakeholder theory. *Journal of Business Ethics*, 102(3), 421–438.
- Keynes, J. M. (1936). *The General Theory of Employment, Interest and Money*. London:

Macmillan.

Lancaster, K. J. (1966). A new approach to consumer theory. *Journal of Political Economy*, 75(2), 132–157.

Leibenstein, H. (1966). Allocative efficiency vs. "X-efficiency". *American Economic Review*, 56(3, June), 392–414.

Leibenstein, H. (1976). *Beyond Economic Man: A New Foundation for Economics*.

Cambridge, MA: Harvard University Press.

Leibenstein, H. (1989). *The Collected Essays of Harvey Leibenstein, Volume 2: X-Efficiency and Microeconomic Theory (edited by K. Button)*. Aldershot: Edward Elgar.

Loasby, B. J. (1967). Making location policy work. *Lloyds Bank Review*, No. 83(January), 34–47.

Loasby, B. J. (1976). Review of *Beyond Economic Man: A New Foundation for Microeconomics*, by Harvey Leibenstein. *Economic Journal*, 86(344), 913–915.

Malinvaud, E. (1972). *Lectures on Microeconomic Theory*. Amsterdam: North-Holland.

March, J. G., & Simon, H. A. (1958). *Organizations*. New York: Wiley.

Martin, J. P. (1978). X-inefficiency, managerial effort and protection. *Economica*, 45(179), 273–286.

Meade, J. E., & Andrews, P. W. S. (1938). Summary of replies to questions on effects of interest rates. *Oxford Economic Papers*, 1 (October), 14–31.

Mehta, J. (2013). The discourse of bounded rationality in academic and policy arenas: Pathologising the errant consumer. *Cambridge Journal of Economics*, 37(6), 1243–1261.

Mosley, P. (1976). Towards a 'satisficing' theory of economic policy. *Economic Journal*, 86(341), 59–72.

Mosley, P. (1984). *The Making of Economic Policy: Theory and Evidence from Britain and*

- the United States since 1945*. Brighton: Wheatsheaf.
- Nelson, R. R., & Winter, S. G. (1982). *An Evolutionary Theory of Economic Change*. Cambridge, MA: Belknap Press of Harvard University Press.
- Payne, J. W., Bettman, J. R., & Johnson, E. J. (1993). *The Adaptive Decision Maker*. Cambridge: Cambridge University Press.
- Pepper, A., & Gore, J. (2015). Behavioral agency theory: New foundations for theorizing about executive compensation. *Journal of Management*, 41(4), 1045–1068.
- Pickering, J. F. (1974). *Industrial Structure and Market Conduct*. London: Martin Robertson.
- Porter, M. E., & van der Linde, C. (1995a). Green and competitive. *Harvard Business Review* (September–October), 120–134.
- Porter, M. E., & van der Linde, C. (1995b). Towards a new conception of the environment-competitiveness relationship. *Journal of Economic Perspectives*, 9(4), 97–118.
- Posner, M. V. (1978). Wages, prices and the exchange rate. In M. J. Artis & A. R. Nobay (eds.), *Contemporary Economic Analysis*. London: Croom Helm.
- Schott, K. (1984). Economic competitiveness and design. *Journal of the Royal Society of Arts*, 132(5338), 648–659.
- Sent, E.-M. (2004). Behavioral economics: How psychology made its (limited) way back into economics. *History of Political Economy*, 36(4), 735–760.
- Simon, H. A. (1947). *Administrative Behavior*. New York: Macmillan (3rd edition 1976, Free Press).
- Simon, H. A. (1951). A formal theory of the employment relationship. *Econometrica*, 19(3), 293–305.
- Simon, H. A. (1959). Theories of decision-making in economics and behavioral science. *American Economic Review*, 49(3), 253–283.
- Stout, D. K. (1977). *International Price Competitiveness, Non-Price Factors and Export*

- Performance*. London: National Economic Development Office.
- Sugden, R. 2018. 'Better off, as judged by themselves: a reply to Cass Sunstein. *International Review of Economics*, 65(1): 9–13.
- Thaler, R. H. (1985). Mental accounting and consumer choice. *Marketing Science*, 4(3), 199–214.
- Thaler, R. H. (2015). *Misbehaving: The Making of Behavioral Economics*. New York: W. W. Norton.
- Thaler, R. H., & Benartzi, S. (2004). Save more tomorrow: Using behavioral economics to increase employee saving. *Journal of Political Economy*, 112(1, pt. 2), S164–S187.
- Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving Decisions about Health, Wealth and Happiness*. New Haven, CT: Yale University Press.
- Trout, J. (2008). *Differentiate or Die: Survival in Our Era of Killer Competition* (2nd edition). Hoboken, NJ: Wiley.
- Tversky, A. (1972). Elimination by aspects: A theory of choice. *Psychological Review*, 79(4), 281–299.
- Tversky, A., & Kahneman, D. (1974). Judgement under uncertainty: Heuristics and biases. *Science, New Series*, 185(4157): 1124–1131.
- Wallis, J., Dollery, B., & Crase, L. (2009). Political economy and organizational leadership: A hope-based theory. *Review of Political Economy*, 21(1), 123–143.