

RESPONSE

# How Hayekian is Sunstein's behavioral economics?

Robert Sugden

School of Economics, University of East Anglia, Norwich NR4 7TJ, UK  
E-mail: [r.sugden@uea.ac.uk](mailto:r.sugden@uea.ac.uk)

(Received 24 February 2021; accepted 24 February 2021; first published online 27 May 2021)

## Abstract

I comment on Sunstein's paper proposing 'Hayekian behavioural economics'. In essence, Sunstein is merely renaming a familiar approach to normative economics, initiated in Sunstein and Thaler's seminal 2003 paper. I argue that this approach cannot fairly be described as in the spirit of Hayek's work. Sunstein's approach is based on a 'constructivist' conception of rationality that Hayek consistently criticized. Although both Hayek and Sunstein address 'knowledge problems', the two problems are fundamentally different. I develop what I claim are truly Hayekian critiques of Sunstein's claim that fuel economy mandates can be more Hayekian than carbon taxes.

**Keywords:** Hayek; Sunstein; Hayekian behavioral economics; welfare economics; division of knowledge

The title that Cass Sunstein has given his paper suggests that he is introducing a new approach to the economic analysis of public policy – *Hayekian behavioural economics*. I will ask whether this really is a new approach, and whether it can fairly be described as in the spirit of Friedrich Hayek's work. My answer to both questions will be 'No'. If 'behavioural economics' is defined (as I think it should be) as the application to economics of theories and methods from empirical psychology, I see no contradiction in the idea of a Hayekian approach to behavioral economics. But that would not be the approach that Sunstein is proposing.

## 'Hayekian' and Sunsteinian behavioral economics

What, according to Sunstein, is Hayekian behavioral economics? In broad outline, it is an approach to normative economic analysis that is 'rooted in both Kantian and utilitarian thinking' [8]. It is addressed to 'planners', 'public officials' or 'regulators' who are designing 'interventions' in the workings of markets. Planners' decisions should be guided by a form of cost–benefit analysis that measures the effects of interventions on individual welfare. In assessing welfare, planners should recognize the many psychological 'biases' – Sunstein specifically mentions 'optimism bias', 'present bias', 'inertia', 'procrastination', 'limited attention', 'myopic loss aversion', 'problems

of self-control', and the effects of 'frames' – that lead individuals to make 'errors'. Cost–benefit analysis should, therefore, be based, not on individuals' revealed preferences, but on 'what consistent, informed, and active choosers, uninfluenced by present bias or limited attention [or, by implication, other behavioural biases], choose' [8]. As a case study of the usefulness of this approach, Sunstein compares two alternative policies to reduce greenhouse gas emissions – carbon taxes and regulations that impose fuel economy standards on new motor vehicles. He argues that a Hayekian cost–benefit analysis might favor imposed standards.

Apart from the name 'Hayekian', all this will be very familiar to readers of *Behavioural Public Policy*. This is exactly the approach that Sunstein has advocated in a long stream of previous publications, beginning with his and Richard Thaler's seminal paper on 'libertarian paternalism' (Sunstein & Thaler, 2003). It is one of a family of broadly similar forms of analysis that are now widely practised and that can usefully be categorized as *behavioural welfare economics* (Infante *et al.*, 2016).

I regard myself as a behavioral economist – an economist who draws on theories and methods from psychology – but I have consistently criticized behavioral welfare economics for its lack of adequate foundations in empirical psychology. My fundamental criticism is that the concepts of 'bias' and 'error' are meaningful only in relation to some standard of 'true', 'correct', or 'latent' preference that is not itself conditional on context-dependent psychological factors such as framing and attention. That actual choices are context-dependent is an established finding of behavioral research, but the hypothesis that individuals have context-independent latent preferences is not. On the contrary, latent preferences play no role in the psychological theories that explain context-dependent choices. If that is right, the idea that such preferences can be retrieved by empirical methods is fundamentally mistaken. So too is Sunstein's suggestion that carrying out a cost–benefit analysis that uses latent preference as a welfare criterion is just a matter of 'running the numbers' [11]. Behavioral welfare economics is implicitly using a psychologically ungrounded model of human action in which a disembodied 'inner rational agent' interacts with the world through an error-inducing psychological 'shell' (Infante *et al.*, 2016).

I have proposed a radically different strategy for reconstructing normative economics in the light of the findings of behavioral science, and in continuity with the classical liberal tradition to which Hayek's work belongs (Sugden, 2004, 2018). In a short footnote, Sunstein acknowledges that my approach 'might be taken to offer a Hayekian approach to behavioural economics', but says that it is 'far less interested in correction of individual error than the approach defended here' [10n6]. (He does not consider the more relevant question of whether *Hayek* would be more interested in the correction of individual error than I am.) I would rather characterize my work as starting from a recognition that the concept of error correction, as used in behavioral welfare economics, is not philosophically coherent. But I do not want to go over those issues again.

In the remainder of this article, I take it as given that 'Hayekian behavioural economics' is a synonym for the version of behavioral welfare economics that Sunstein has been developing since the early 2000s. I will focus on the question of whether this can reasonably be called 'Hayekian' – whether, as Sunstein claims in the final

sentence of his paper, it is ‘in Hayek’s general spirit, and respectful of his most fundamental concerns’ [18].

### What Hayek thought

So, what were Hayek’s most fundamental concerns? In relation to economics, Hayek’s most fundamental concern was surely his advocacy of the spontaneous order of the market in opposition to deliberate planning. Like many present-day economists, Sunstein views Hayek’s paper ‘The use of knowledge in society’ (Hayek, 1945) as a profound analysis of the limitations of economic planning. I agree. For me, it is one of the most significant papers in twentieth-century economics. The key concept in Hayek’s analysis is the *division of knowledge*. In any complex economic system, knowledge is distributed among agents. If wealth is to be created by coordinated action, there has to be some decentralized system for integrating those dispersed items of knowledge. By means of the information and incentives transmitted by prices, competitive markets respond to properties of the world that are not visible from any synoptic viewpoint and can thereby achieve feats of coordination that are beyond the capabilities of any central planning agency.

Sunstein gives a fair description of this aspect of Hayek’s work, but has less to say about another (or better, an overarching) concern of Hayek’s: the nature and limitations of human rationality. Hayek characterizes two contrasting conceptions of rationality that have dominated Western thought since the Enlightenment – *constructivist* and *evolutionary*. For Hayek, René Descartes is a founder of the constructivist tradition, which continues in the Enlightenment writings of eighteenth-century continental Europe, and in Jeremy Bentham’s utilitarianism. The intellectual founders of the evolutionary tradition are the writers of the Scottish Enlightenment, particularly Adam Ferguson, David Hume, and Adam Smith. For constructivists, reason (or Reason) is a universal resource to which all human beings have access; it provides a fixed standard against which social institutions and codes of morality can be judged. When existing values or institutions are found wanting, Reason can tell us how they should be reconstructed. In contrast, writers in the evolutionary tradition emphasize the limits of human reason. Social order is viewed as an unintended consequence of the interplay of individual actions that are governed by natural psychological mechanisms – particularly, mechanisms of self-interest and limited sympathy. Social cooperation depends on individuals’ adherence to rules that have emerged spontaneously from trial-and-error social learning. Because the resulting order is vastly more complicated than its components, even the most intelligent thinkers may not fully understand how it works, let alone predict how it will evolve. In Hayek’s intellectual landscape, evolutionary rationality leads to a recognition of the value of the market; constructivist rationality leads to a misplaced faith in the efficacy of economic planning.

If this account of Hayek’s fundamental concerns is anything like correct, Sunstein has given himself a tough row to hoe. He has told us that Hayekian behavioral economics is rooted in utilitarianism, that it is addressed to planners, and that its central aim is to identify and correct errors in individuals’ decisions. This all sounds like an exercise in constructivist rationality. How is Hayek going to fit into this scheme?

We are told quite a lot about what Hayek has said, and quite a lot about Sunstein's preferred form of behavioral welfare economics, but rather less about how the two parts of the paper are supposed to connect together. One way in which Sunstein seems to be trying to link them is through quotations from Hayek that show that he was not a doctrinaire libertarian in the modern American sense of the term. The epigraph of Sunstein's paper is a passage in which Hayek declares that the state has *some* legitimate economic role – at least that of maintaining an 'intelligently designed' legal framework to prevent fraud and deception. Sunstein asks us to give particular attention to quotations in which Hayek rejects 'wooden insistence' on the principle of *laissez-faire* and accepts the need for laws regulating working hours, public health, and the use of poisonous substances. In another quotation, Hayek accepts the need for publicly funded provision of public goods and for the regulation of activities that generate negative externalities. In yet another, he uses an externality argument to justify public finance for some forms of education. But, what were we supposed to expect? How many serious economists would oppose all laws against fraud, all regulation of working hours, all regulation of externalities, all public provision of public goods, or all public education? Or, to consider the opposite case, how many serious economists would support the total replacement of markets by Bolshevik-style socialist planning? Lenin was an economic theorist as well as a revolutionary leader. In introducing the New Economic Policy in Russia in 1921, he recognized that markets had some useful role in a socialist economy. Does that make Hayek's economics Leninist (or Lenin's economics Hayekian)?

One might reasonably ask how Hayek would distinguish between cases in which regulation is desirable and those in which it would be the start of the slippery slope to totalitarianism that he describes in *The Road to Serfdom* (Hayek, 1944). John Maynard Keynes asked exactly that question in a letter to Hayek shortly after the publication of Hayek's book. After declaring that 'morally and philosophically' he was 'in a deeply moved agreement' with almost everything in it, Keynes wrote:

I come finally to what is really my only serious criticism of the book. You admit here and there that it is a question of knowing where to draw the line [between free enterprise and planning]. You agree that the line has to be drawn somewhere, and that the logical extreme is not possible. But you give us no guidance whatever as to where to draw it. In a sense this is shirking the practical issue. It is true that you and I would probably draw it in different places ...<sup>1</sup>

But what has deeply moved Keynes is not Hayek's acceptance of the need for some regulation of markets; it is the moral and philosophical depth of his ideas about liberty and the spontaneous order of the market. A branch of economics that is to be called 'Hayekian' should surely have some strong connection with those ideas.

Sunstein sometimes tries to make this connection by arguing that assumptions about imperfect information are starting points both for Hayek's analysis of the

<sup>1</sup>Letter to Hayek, June 28, 1944, reprinted in John Maynard Keynes, 'Activities 1940–1946. Shaping the post-war world: Employment and commodities', in Donald Moggridge (ed.), vol. 27 (1980) of *The collected writings of John Maynard Keynes*.

division of knowledge and for behavioral economics. Thus, in the Abstract, Sunstein rightly says that one of Hayek's most important arguments is about the 'epistemic advantages of the price system' and that these advantages arise because the price system incorporates otherwise dispersed information. Sunstein goes on to say that behavioral economics has shown that individual actors in the market often make errors and (by implication) that many of these errors can be attributed to individuals' lack of, or insufficient attention to, true information. Because the regulations proposed by behavioral welfare economists are made in response to this 'knowledge problem', they are 'neo-Hayekian' [8–9].

In support of the suggestion that Hayek's concern with imperfect information is aligned with the utilitarian aspects of behavioral welfare economics, Sunstein cites occasional passages in Hayek's writings and lectures that seem to imply that liberty matters *only* (or, more commonly, *almost only*) because of the division of knowledge. Despite urging us to 'pause over' a passage with the 'liberty matters only because ...' content, Sunstein concedes that Hayek did not really endorse its literal meaning. Still, there can be no doubt that, for Hayek, the problem of the division of knowledge is a fundamental reason for valuing liberty. What is less clear is the nature of the supposed analogy between Hayek's 'knowledge problem' and the agenda of behavioral welfare economics.

The essence of Hayek's knowledge problem is that, for every agent in the economy, there are many matters on which he or she knows *more* than anyone else and that, because much of that knowledge is tacit, there can be no direct mechanism for transferring it to a planner. To put this another way: the individual agent's behavior may be rational in a way that the planner is unable to understand. That is why decentralized procedures are so important in creating economic order, and why the division of knowledge exposes a fundamental limitation of constructivist rationality. As understood by behavioral welfare economists, the knowledge problem is exactly the opposite. The premise is that, in relation to decision problems that are the immediate concern of an individual agent, the agent knows *less* than the planner. Nudging or regulation is needed when the planner cannot transfer her knowledge directly to the agent. Behavioral explanations of why this knowledge cannot be transferred typically impute imperfect rationality (e.g., limited attention or a lack of self-control) to the agent. In other words, the agent's behavior is liable to be irrational in a way that the planner understands but the agent does not.

As viewed by behavioral welfare economics, the knowledge problem can be represented in models in which, as viewed by the modeler, everything is known – including which items of the modeler's knowledge are or are not known to particular agents in the model. This is a standard modeling strategy in the economics of information. But Hayek's knowledge problem is that in a spontaneously ordered market economy, the synoptic viewpoint of the modeler is not accessible to anyone. The difference between these two understandings of the knowledge problem is nicely illustrated when Sunstein discusses a passage in which Hayek argues that individuals' actions are guided by rules of conduct that they have not consciously chosen and may even be unaware of. Sunstein's first response is: 'If there is a Hayekian theory of behavioural biases, it might begin there, and it might also emphasize that individuals might be prone to relying excessively on *local* information' [5, italics in original]. I am not

sure whether Sunstein is saying that a theory of this kind could reasonably be called ‘Hayekian’ (that depends on how one reads ‘might also’), but I *am* sure that it could not be.

Sunstein sometimes bridges gaps in his argument by reminding us that Hayek was writing before economists were aware of the many biases to which human decision makers are subject. Thus, [Hayek] did not anticipate behavioural findings; he did not explore individual biases, such as present bias, optimistic bias, or availability bias. He did not have anything to say about their relevance to institutional design or to the price system.’ [5] And: ‘He did not explore such questions as whether default rules are an appropriate response to inertia or procrastination, whether salient disclosures are essential to overcome limited attention, or whether fuel economy mandates are an appropriate response to present bias and myopic loss aversion.’ [8] The implicit suggestion is that, had Hayek foreseen the evidence base that behavioral welfare economists now have access to, the conclusions he would have drawn from it would have been the same as those actually drawn by behavioral welfare economists. On that hypothesis, it is, of course, true that behavioral welfare economics is Hayekian. But, might not Hayek have favored a less constructivist interpretation of the evidence?

On the face of it, Hayek’s fundamental theoretical commitments would seem to predispose him to favor explanations of the kind developed by Gerd Gigerenzer and his associates, rather than those to which behavioral welfare economists typically appeal. Gigerenzer’s explanations treat human decisions as resulting from the use of *ecologically rational* (or ‘fast and frugal’) heuristics – simple rules by which human beings can make the best use of their limited cognitive powers in navigating complex environments (Gigerenzer *et al.*, 1999). Sunstein comes close to conceding this point when, in the context of the use of local information, he says: ‘But if anything, Hayek is best taken to suggest not that people are biased, but that despite their ignorance, they show a kind of ecological rationality, acting in accordance with rules, which operate as devices to help us to cope with our inevitable ignorance.’ [5] I like to think that, given Hayek’s self-identification with the writers of the Scottish Enlightenment, he would also have had some sympathy with my attempts to develop a classically liberal form of normative behavioral economics in which the concept of ‘individual bias’ plays no part.

### Sunstein’s case study

At various places in the paper, Sunstein remarks on Hayek’s preference for addressing philosophically large questions at high levels of generality, rather than thinking about the more concrete problems that legislators and regulators have to deal with. That is a fair comment, and one that echoes Keynes’s reservations about *The Road to Serfdom*. Sunstein is perhaps suggesting that someone who tries to apply Hayek’s grand generalizations to one of these concrete problems will end up doing what behavioral welfare economists do – and thereby confirming Sunstein’s claim that behavioral welfare economics is Hayekian. In the remainder of this article, I will apply what I believe to be Hayekian insights to two aspects of Sunstein’s case study.

The premise for this study is that US policymakers are seeking to reduce total greenhouse gas emissions. Two alternative general strategies are being compared –

imposing a universal carbon tax and setting product-specific fuel efficiency mandates. This comparison is made in relation to tailpipe emissions from cars; the relevant mandates are fuel efficiency standards for specified classes of new cars. Simple neoclassical economics implies that the carbon tax is economically more efficient. [Let me interject that my opportunity-based approach to normative behavioral economics leads to an analogous conclusion: see Sugden (2018, pp. 141–3).] Sunstein argues that, because car buyers are prone to behavioral biases, fuel efficiency standards might be justified on welfare grounds, and that such a justification would be Hayekian.

The first issue I want to consider is Sunstein's claim about bias. The postulated bias is that when consumers are thinking about buying a car, they pay insufficient attention to the fuel costs they will incur over the period during which they will own it and/or lack adequate understanding of how to convert information about miles per gallon, expected fuel prices, and expected annual mileage into an equivalent present value. For one or both of these reasons, consumers systematically underestimate the present value of fuel economy.

One of the main pieces of evidence that Sunstein cites in support of this claim is an econometric study by Gillingham *et al.* (2019). This is a cleverly conceived natural experiment that exploits a unique event in the US car market. In 2012, after an audit by the Environmental Protection Agency (EPA), two major car manufacturers admitted that, as a result of what they claimed to be unintentional error, they had significantly overstated the fuel economy of some but not all of their vehicle models. The affected models continued to be sold, but their official (EPA-approved) fuel economy ratings were abruptly reduced. Gillingham *et al.* investigate the effect of this shock on the differences between the transaction prices at which affected and unaffected models were sold by dealers. They argue that because the properties of an affected model were exactly the same before and after the shock, the estimated negative effect on the price can be used as a measure of (marginal) consumers' valuations of the reduction in the fuel economy rating. Using a wide range of plausible assumptions about annual mileages, discount rates, and expectations about fuel prices, they conclude that each \$1 increase in the discounted cost of fuel consumption was valued by car buyers at between \$0.15 and \$0.38. Their interpretation is that consumers 'undervalue' fuel economy because of myopic bias; Sunstein suggests a different bias, inattention, as the main cause of this apparent undervaluation.

But *is* this econometric finding evidence of undervaluation? Gillingham *et al.* (2019) are presupposing that an 'unbiased' consumer's willingness to pay for a car would fall by \$1 for every \$1 increase in the discounted value of fuel consumption, calculated according to EPA fuel economy ratings. Implicitly, they are modeling an unbiased consumer as a rational neoclassical agent whose beliefs about the fuel economy of different models of car are always exactly the same as the EPA ratings. In support of this assumption, Gillingham *et al.* (2019) point out that EPA ratings are 'the primary source of information provided by the government to help consumers compare fuel economy across different vehicles', and that these ratings are prominently displayed on dealer lots and on car-comparison Web sites. But when an ordinary human consumer is thinking about the future cost of driving a particular model of car, her knowledge of the official ratings will be only one of many disparate ideas that come to mind. She may recall her own experience of the fuel consumption of

cars that are in some respect similar to the new model, or what other people have told her about their driving experiences, or what she has read in newspapers and magazines. She may think that her style of driving is such as to make her fuel consumption greater or less than the average. She may – not unreasonably, given what happened in 2012 – be skeptical about the accuracy of official ratings. *From her point of view*, each of these ideas has some bearing on her future driving costs; thinking about them is not myopia or inattention. It should not be surprising to find that each of them has less than a \$1 for \$1 effect when considered separately. Notice that many of the ideas that I have attributed to the car buyer are ones that Hayek would regard as local or tacit knowledge. Viewed in a Hayekian perspective, the fact that a market economy allows each individual to act on her own beliefs – whether or not those beliefs are justified according to other people’s standards – is a crucial ingredient in its capacity to integrate dispersed knowledge.

This leads on to my second point. The premise for the case study is that US carbon emissions must be reduced. Let us take it as given that a specific quantitative reduction has to be achieved. What is at issue is whether this is better achieved by industry-specific product standards or by a universal tax on carbon emissions, with a tax rate that is adjusted over time so as to track target emission levels. The carbon tax is the market price of a resource – the right to make emissions – for which, by stipulation, the supply is fixed. By decentralizing decisions about how this resource is used, the market integrates dispersed knowledge. There are many different ways in which an economy-wide reduction in carbon emissions could come about. For example, people might continue to make much the same journeys as now, but in cars with lower-emission engines. That would be the kind of change that fuel efficiency mandates are designed to produce. But they might instead make fewer or shorter journeys, and the economy might adapt to that through changes in land-use patterns or developments in electronic communication. Or, since the manufacture of all types of car has a substantial carbon component,<sup>2</sup> people might replace their cars less frequently. And so on: there are limitless possibilities. It is a huge merit of market solutions to economic problems that they do not require anyone to have the knowledge necessary to make rational decisions about the direction in which an economy should move. A corollary of this is that, when a collective choice has to be made between market and planning responses to some problem, it is a mistake to think that (as Sunstein puts it) ‘everything turns on what the evidence shows, and on the particular numbers’ [17]. If the outcomes to which a market solution would lead cannot be known in advance, there are no ‘particular numbers’ to analyze.

Hayek (1960) dedicated one of his greatest books *To the unknown civilization that is growing in America*. His writing is shot through with the conviction that a free society is an evolving entity, that its future path is unknowable, but that in some sense, we can have confidence that that path will be a good one. Exactly what that confidence means and how far it is philosophically defensible are deep questions.<sup>3</sup> But it is what Hayek thought, and any approach to economics that calls itself ‘Hayekian’ must come to terms with that.

---

<sup>2</sup>The manufacture of batteries for electric cars is fuel intensive and currently has a high carbon content. See, for example, International Council on Clean Transportation (2018).

<sup>3</sup>My own best attempt to answer them is in Sugden (1993).



## Why enlist Hayek?

My conclusion has to be that, in calling behavioral welfare economics ‘Hayekian’, Sunstein is engaging in a kind of intellectual mis-selling. Why does he want to do this?

My conjecture is that Sunstein is trying to head off the criticism that behavioral welfare economics is unacceptably paternalistic. When Sunstein and Thaler (2003) first proposed this approach, they gave it a name, ‘libertarian paternalism’, that acknowledged its paternalism but implied that it was paternalistic in a way that even libertarians could not object to. In their later book *Nudge*, Thaler and Sunstein (2008) often go out of their way to signal that their approach is not that of paternalistic planning. The term ‘planner’, used in the 2003 paper, is replaced by the more friendly ‘choice architect’. Referring back to the title of the earlier paper, they say that their approach is paternalistic only in a ‘weak, soft, and nonintrusive’ sense. They emphasize that its aim is to ‘make choosers better off, *as judged by themselves*’ (2008, pp. 4–6; italics in original). Repeating this point a few pages later, they add a revealing clause: ‘So long as people are not choosing perfectly, some changes in the choice architecture could make their lives go better (as judged by their own preferences, not those of some bureaucrat)’ (pp. 9–10). The subtext is: we are not *bureaucratic* paternalists. Another trope in Sunstein’s work is there are many nudges that everyone finds valuable and willingly submits to. One of Sunstein’s favorite (if not altogether convincing) examples is a GPS system (e.g., Sunstein, 2018). The suggestion seems to be that if a GPS system (or a street map or a dictionary?) is a form of libertarian paternalism, then libertarian paternalism cannot be such a bad thing. Rebranding behavioral welfare economics by naming it after the greatest classical liberal economist of the twentieth century would be a natural extension of this presentational strategy.

It seems to me that behavioral welfare economists would do better to say that their approach is sometimes paternalistic in ways that go beyond making people better off as judged by themselves: sometimes, its aim is to make people better off, as judged by the behavioral welfare economist, even if that goes against what those people in fact want and think is good for them. Behavioral welfare economists should stand by that position and defend it. As part of that defense, they might reasonably argue (as, in effect, Keynes did in his letter) that even Hayek was willing to endorse some forms of paternalism. But they should not try to identify their brand of economic planning with Hayek’s inspirational conception of the market as a spontaneous order.

**Financial support.** This work was supported by the Economic and Social Research Council (award ES/P008976/1) and by the European Research Council (ERC) under the European Union’s Horizon 2020 research and innovation programme (grant agreement 670103).

## References

- Gigerenzer, G., P. Todd and the ABC Research Group (1999), *Simple heuristics that make us smart*. New York: Oxford University Press.
- Gillingham, K., S. Houde and A. Benthem (2019), Consumer myopia in vehicle purchases: Evidence from a natural experiment. Zürich: Center of Economic Research at ETH [Swiss Federal Institute of Technology]. Working Paper 19/321. Retrieved from: <https://ssrn.com/abstract=3389832>.
- Hayek, F. (1944), *The road to serfdom*. London: Routledge.
- Hayek, F. (1945), ‘The use of knowledge in society’, *American Economic Review*, 35(4): 519–530.

- Hayek, F. (1960), *The constitution of liberty*. Chicago: University of Chicago Press.
- Infante, G., G. Lecouteux and R. Sugden (2016), 'Preference purification and the inner rational agent: A critique of the conventional wisdom of behavioural welfare economics', *Journal of Economic Methodology*, **23**(1): 1–25.
- International Council on Clean Transportation (2018), Effects of battery manufacturing on electric vehicle life-cycle greenhouse gas emissions. Briefing, February 2018. Retrieved from: [https://theicct.org/sites/default/files/publications/EV-life-cycle-GHG\\_ICCT-Briefing\\_09022018\\_vF.pdf](https://theicct.org/sites/default/files/publications/EV-life-cycle-GHG_ICCT-Briefing_09022018_vF.pdf).
- Sugden, R. (1993), 'Normative judgements and spontaneous order: The contractarian element in Hayek's thought', *Constitutional Political Economy*, **4**(3): 393–424.
- Sugden, R. (2004), 'The opportunity criterion: Consumer sovereignty without the assumption of coherent preferences', *American Economic Review*, **94**(4): 1014–33.
- Sugden, R. (2018), *The community of advantage: A behavioural economist's defence of the market*. Oxford: Oxford University Press.
- Sunstein, C. (2018), "'Better off, as judged by themselves": A comment on evaluating nudges', *International Review of Economics*, **65**(1): 1–8.
- Sunstein, C. and R. Thaler (2003), 'Libertarian paternalism is not an oxymoron', *University of Chicago Law Review*, **70**(4): 1159–202.
- Thaler, R. and C. Sunstein (2008), *Nudge: Improving decisions about health, wealth, and happiness*. New Haven: Yale University Press.