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Valuing Facebook

CASS R. SUNSTEIN*

Abstract: In recent years, there has been a great deal of discussion of the welfare effects of digital goods, including social media. A national survey, designed to monetize the benefits of a variety of social media platforms (including Facebook, Twitter, YouTube and Instagram), found a massive disparity between willingness to pay (WTP) and willingness to accept (WTA). The sheer magnitude of this disparity reflects a 'superendowment effect'. Social media may be Wasting Time Goods – goods on which people spend time, but for which they are not, on reflection, willing to pay much (if anything). It is also possible that in the context of the WTP question, people are giving protest answers, signaling their intense opposition to being asked to pay for something that they had formerly enjoyed for free. Their answers may be expressive, rather than reflective of actual welfare effects. At the same time, the WTA measure may also be expressive, a different form of protest, telling us little about the actual effects of social media on people's lives and experiences. It may greatly overstate those effects. In this context, there may well be a sharp disparity between conventional economic measures and actual effects on experienced well-being.

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An unusual valuation problem

Countless digital goods are free. Companies such as Facebook and Twitter obtain revenues from other sources, such as advertising. But in light of recent controversies, there have been serious discussions about changing the business model to one in which users are asked to pay for use of the relevant platforms. These discussions have been accompanied by more theoretical discussions about the appropriate economic valuation of those platforms. What if people were required to pay to use Facebook? How much would they be willing to spend?

The answers would tell us something important about the value of social media in general. They might also help answer more fundamental questions

* Correspondence to: Robert Walmsley University Professor, Harvard Law School, USA. Email: csunstei@law.harvard.edu.

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about the economic valuation of legal entitlements; about the potentially expressive quality of some consumption decisions; and about the disparity between traditional economic measures and actual human welfare. They would bear on legal regulation as well.

A general question, which is of special interest in behavioral economics, is the potential disparity between willingness to pay (WTP) and willingness to accept (WTA). If we are interested in welfare, is the best question how much people would be willing to pay to use (say) Facebook, or instead how much they would demand to stop using it? A great deal of work has explored the 'endowment effect', which suggests that people demand far more to give up certain goods than they would pay to obtain those goods in the first instance (Thaler, 2015). The endowment effect is controversial, at least in the sense that there is a debate about its domain, its sources and its magnitude (Plott & Zeiler, 2005). We might wonder whether WTP to use social media is greater than WTA not to use social media, and if so, whether the standard explanations account for any such disparity.

An equally general and even more basic question involves the relationship between WTP (or WTA) measures and welfare. Within economics, it is common to say that people's WTP for goods is the best available measure of the welfare effects of having those goods. Of course, WTP is the standard measure in actual markets. Note, however, that to produce a WTP figure, people have to solve a *prediction problem* – that is, they have to predict the effects of the good on their welfare. Solving that problem may seem easy, especially for familiar commodities with which people have experience (e.g., shoes, shirts, soap). But for some goods, finding a solution may be particularly difficult, especially for unfamiliar commodities with which people have little or no experience (Sunstein, 2008). How is it possible for people to generate a monetary measure to capture the likely welfare effects of a good that they have never had?

For many people, Facebook, Twitter, Instagram and other social media platforms are anything but unfamiliar; people have a great deal of experience with them. But for reasons that we will explore, it is not easy for users of social media to value such platforms in monetary terms. An understanding of WTP in the context of social media tells us something general about the uncertain link between WTP and welfare – and should motivate a more direct inquiry into welfare effects. WTP is a mere proxy for those effects, and in some cases, it is not a good one. The task is to figure out exactly why and to design substitutes. My goal here is to make some progress on that task.

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A superendowment effect

In April 2018, I conducted a pilot experiment to obtain some preliminary answers to valuation questions. Using Amazon's Mechanical Turk, I asked 439 Facebook users to say how much use of the platform is worth.[1] More specifically, I asked 218 Facebook users a simple question: "Suppose that you had to pay for the use of Facebook. How much would you be willing to pay, at most, per month?" At the same time, I asked 221 other Facebook users a different question: "Suppose that you are being offered money to stop using Facebook. How much would you have to be paid per month, at a minimum, to make it worth your while to stop using Facebook?"

The first question asks about WTP, whereas the second focuses on WTA. According to standard economic theory, the two questions should produce identical answers; the influential Coase Theorem so suggests. But behavioral economists have shown that, in important contexts, they do not (Kahneman *et al.*, 1998). In many experiments, WTA is about twice as much as WTP. This is evidence of the endowment effect (Ericson & Fuster, 2013; Morewedge & Giblin, 2015). For example, people would pay less to buy a coffee mug or lottery ticket than they would demand to give up a coffee mug or a lottery ticket that they own (Kogler *et al.*, 2013; Morewedge & Giblin, 2015). One question is whether for digital goods, an endowment effect would be observed; another question is its magnitude.

For the first question, the median answer was just $1 per month. The average was $7.38. Most strikingly, nearly half of participants (46%) said that they would pay $0 for a month of Facebook use. In the context of WTP, valuation of Facebook was extremely low. Many users appear to think that it is worthless.

For the second question, by contrast, the median answer was $59 per month. The mean was $74.99.[2] In the context of WTA, Facebook has genuine value, and it is not small. It should be clear that the disparity between WTP and WTA is unusually large. We might describe it as a 'superendowment effect'. This is in

1 The sample was not nationally representative, but it did have a significant level of demographic diversity.

2 None of the demographic differences (sex, race, education, income, region) was significant, but in light of the small sample, it would be a mistake to make much of this. I might note, however, that for both men and women, the median response to the first question was $1, and that the male mean was $7.98 and the female $6.92; that the Republican median was $2, with a mean of $11; that the Democratic median was $1, with a mean of $8.74; and that the independent median was zero, with a mean of $3.36. For the second question, the male median was $57, with a mean of $75.44; the female median was $59, with a mean of $74.63; the Republican median was $59, with a mean of $78.25; the Democratic median was $53, with a mean of $71.34; the independent median was $60, with a mean of $77.14.

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contrast to the 1:2 ratio often observed in previous studies (and also in contrast, of course, to the 'no endowment effect' observed for money tokens, for goods held for resale and sometimes for goods with well-established economic values) (Plott & Zeiler, 2005; Isoni *et al.*, 2011).

I followed this survey with a larger one involving a nationally representative sample (for the USA). The survey also divided people into two groups, asking the same two questions, but it focused on a wide assortment of social media platforms and it included people who do not use those platforms. The results were broadly in line with those of the pilot survey, but with some interesting differences across platforms.

For the entire population, the median WTP for the use of Facebook was $5, with a mean of $16.99. The WTA numbers were much higher: $87.50 and $89.17. The figures were close for Facebook users: a median of $5 and a mean of $17.40 for WTP, and a median of $64.00 and a mean of $75.16 for WTA. For non-Facebook users, the median WTP number was $4, with a mean of $16.70. The WTA answers were surprisingly high: a median of $98.50 and a mean of $98.90.

The patterns were broadly similar for other social media platforms. For simplicity, I restrict the figures to actual users (median is listed first, then mean).

- Instagram: WTP, $5, $21.67; WTA, $100, $102.60
- LinkedIn: WTP, $8, $25.71; WTA, $99, $97.80
- Pinterest: WTP, $5, $20.97; WTA, $100, $102.92
- Reddit: WTP, $10, $27.73; WTA, $99, $97.73
- Snapchat: WTP, $5, $24.92; WTA, $100, $106.20
- Twitter: WTP, $5, $19.94; WTA, $100, $104.18
- WhatsApp: WTP, $10, $34.90; WTA, $100, $101.16
- YouTube: WTP, $5, $17.27; WTA, $88, $90.78

For all of the tested media outlets, the patterns are strikingly similar.[3] Most importantly, WTP is far lower than WTA, sometimes with a ratio (for the medians) of 1 to 20. I am unaware of any area in which the disparity between WTP and WTA is so high as a systematic matter. And in the national survey, significant percentages of people said that they would be willing to pay nothing for use of social media outlets (Facebook, 33%; Instagram, 27%; LinkedIn, 23%; Pinterest, 29%; Reddit, 19%; Snapchat, 25%; Twitter, 27%; WhatsApp, 15%; and YouTube, 33%). Note that these figures reflect the responses of active users of each of those outlets, not the population as a whole.

3 I am bracketing demographic differences here on the ground that they are not relevant to the central arguments.

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The magnitude of the difference raises a puzzle, to which I will turn shortly. By way of comparison, it is useful to consider the environmental setting, where large disparities have also been observed between WTP and WTA in surveys (Sunstein, 1993; Dietz & Venmans, 2017). One study found that people would demand about five times as much to allow destruction of trees in a park as they would pay to prevent the destruction of those same trees (Brookshire & Coursey, 1987). When hunters were questioned about the potential destruction of a duck habitat, they said that they would be willing to pay an average of $247 to prevent the loss, but would demand no less than $1044 to accept it (Hammock & Brown, 1974). In another study, participants required payments to accept degradation of visibility ranging from 5 to more than 16 times higher than their valuations based on how much they were willing to pay to prevent the same degradation (Rowe *et al.*, 1980). These disparities are not as high as those observed in the context of social media, but they are also unusually large.

Wasting Time Goods and expressive valuations

We will return shortly to the environmental domain. In the social media surveys, the most obvious mystery is the very low median for WTP (with many people saying that they would be willing to pay nothing at all). It is plausible to think that for many digital goods, a similarly low WTP would be observed, at least in surveys. This is a puzzle. From actual behavior, social media seem to have some value for users. Their use, sometimes extending to many hours per week, would seem to be demonstrative of a positive valuation. Is it even plausible to think that for a substantial percentage of them the value is zero, or close to it?

One possibility is that for such people, social media is a good that they use, but that they also consider, on reflection, to be useless or valueless. Facebook might be a way of spending time, through habit or perhaps even a kind of addiction, but people might nonetheless think that they would be better off, or as well off, doing something else instead. On this account, there are some goods – call them Wasting Time Goods (WTGs) – for which there is an interesting but explicable disparity between choices and valuation. People choose to use or consume WTGs, but they would not be willing to pay much, if anything, for the right to continue to do so.

In my view, WTGs are real, important and understudied. Social media may well count as such for some users. But I speculate that the low WTP numbers are not adequately or fully explicable in those terms. The reason for the low WTP figures may well be *expressive*. For some people, they are in the nature of protest answers, and to that extent, they are not at all a reliable measure

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of the welfare benefits of using Facebook, Twitter, YouTube or other platforms. In short, having had to pay nothing to use such platforms, people greatly dislike the idea of a monthly fee. When people say that they are willing to pay $0, or only slightly more, they are effectively announcing: "If you are going to start charging me, well, then, forget about it!" The reference point has been $0, and a sudden charge (a price increase, even if it is small) is taken to be unfair, not least because it is a loss from the status quo (Kahneman *et al.*, 1986).

Something similar might be said about those who said that they would pay only a small monthly amount to use social media (say, $5). They might well have been registering their displeasure at the idea of suddenly having to buy something that has long been provided gratis. Here, then, is a reason to think that the low median WTP does not offer adequate information about the welfare effects of using social media platforms.

Return to the environmental studies in this light. It would be easy to imagine studies of clean air or clean water that would also generate puzzlingly low WTP figures, and for the same reasons: a good once enjoyed for free is now being subject to some kind of charge. Loss aversion undoubtedly plays some kind of role here. If people are asked to pay more than the reference point (in this case $0), they will rebel. They might well think that the change is unfair, and hence the protest answer (Kahneman *et al.*, 1986). If so, there is fair question as to whether responses to survey questions would be predictive of actual behavior in real markets. People might say that they would pay nothing or give a very low number in a survey, but once a price actually emerged, they might be willing to pay much more. After a short period, or after the norm changes, they might get over their initial feelings of outrage. Whether and to what extent this is so is of course an empirical question. In labor markets, loss aversion has been found to play a significant role and helps explain why employers do not reduce wages during recessions (Bewley, 1999).

But in the environmental studies listed above, the real puzzles come from the high WTA numbers. In general, such numbers can be a questionable proxy for welfare effects. One reason for this is that, in the environmental context, a high figure for WTA might reflect a kind of *moral outrage* (no less than a zero answer for WTP). For an environmental good (e.g., clean air, safe drinking water, an endangered species), the WTA question undoubtedly triggers moral concerns, producing protest answers of their own (Sunstein, 2002). Some people might think that it is morally abhorrent to allow members of endangered species to be lost, or the air to be made dirtier, in return for a specified amount of money. Trading money for such a loss might be seen as a taboo trade-off.

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Protest answers can also be found when moral concerns are not present and when people are asked how much they would accept to give up some entitlement that they enjoy, such as a right to vacation time. Some people might well think, "There is no amount of money that can get me to give up my vacation time!" (Sunstein, 2002). In some settings, people might resent the very idea that 'someone' is trying to pay them to stop doing what they are planning to do. Their resentment might well manifest itself in a high WTA figure (including for use of social media).

Here, as well, there remains a question as to whether and to what extent answers in survey questions would map onto actual behavior. It is easy to decline money in a hypothetical survey setting, but harder to do so when real money is on the line. Nonetheless, it might well be the case the moral concerns, or a sense of entitlement, will be expressed even in market settings (Bewley, 1999).

There is a separate point, and it involves opportunity costs. The WTP question puts opportunity costs on the cognitive table, at least for many people much of the time: when people are asked how much they are willing to pay for some X, they are often going to think what else they could do with that money. The WTA question is different. When people say that they would demand a very high amount of money to give up some good that they own (e.g., coffee mugs, lottery tickets), they might not be focused on other potential uses of that money (Frederick *et al.*, 2009).[4] For that reason, there is reason to doubt whether a high median, in response to the second question, is sufficiently informative about the welfare effects of using a social media platform.

WTP/WTA vs. welfare

These points suggest severe limitations to both WTP and WTA surveys as measures of the welfare effects of digital goods that have formerly been provided for free. Expressive answers might well be found for WTP questions, and moral concerns or resentment might infect answers to WTA questions.

In real markets, of course, different results might be expected. Some media outlets, such as *The New York Times* and *The Washington Post*, have shifted to require paid subscriptions, rather than providing free content (as they previously did). In surveys, elicited WTP might have been far lower

4 In the environmental context, another factor is at work: conscience. If people are being asked how much they would demand to allow destruction of (say) polar bears, they might say that no amount is high enough, or they might give an amount that signals not the welfare effects (for them) of the destruction of polar bears, but their feeling of responsibility for a terrible loss. On some of the issues here, see Posner and Sunstein (2017).

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than actual WTP as observed through behavior. For subscribers to formerly free services, initial resentment, resulting in some kind of expressive reaction, might recede in favor of a welfare calculation, in which people decide how much the good is worth to them. As I have noted, it remains to be determined when and by how much WTP or WTA figures, elicited in surveys, would differ from those that are observed in behavior.

In a much more elaborate study, Brynjolfsson *et al.* tried to value use of Facebook by asking consumers if they would prefer (1) to maintain access to the platform; or (2) to give it up for one month in response to a specified payment (Brynjolfsson *et al.*, 2018).[5] Brynjolfsson *et al.* used a large, nationally representative sample limited to Facebook users. With their method – a 'discrete choice experiment' – they asked people to choose between two identified options and to specify the one they valued more. It is important to see that a discrete choice experiment ought to avoid some of the distortions of both WTP and WTA (McCaffery *et al.*, 1995). At the same time, it cannot avoid an endowment effect: the relevant questions will be asked of people who are, or are not, current 'owners' of the good at issue.

The median answer was in the vicinity of $40–$50 to give up Facebook for a month (significantly higher than my WTP answers and significantly lower than my WTA answers). Aware of various technical limitations in their study, Brynjolfsson *et al.* do not insist on those particular numbers, but they do urge that digital goods, including social media, are producing large, monetizable benefits that are not included in conventional measures of well-being, such as gross domestic product. That conclusion is both important and plausible. Nonetheless, it is important to add two qualifications.

The first, signaled by my own surveys, is that whatever numbers are generated will be an artifact of the particular method that is used. If different methods produce different numbers, then it will be challenging to decide which one is the best measure of economic value. For goods that have been provided free, WTP numbers might not be reliable, because they might well reflect resentment about being asked to pay for such goods. WTA numbers seem better, but they have their own problems (recall opportunity cost neglect). If the goal is to capture welfare effects, discrete choice experiments are probably best, but insofar as the relevant questions are posed to current users, they will embody a kind of endowment effect.

The more fundamental question is that we need better measures of the effects of such goods on people's experienced well-being (Dolan, 2014). Brynjolfsson *et al.* title their impressive paper, 'Using Massive Online Choice Experiments to

5 I am focusing only on a portion of their studies here; it has a number of illuminating findings.

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Measure Changes in Well-Being', but well-being is emphatically not what they are measuring. At best, they are measuring *predictions* of well-being.[6]

People might be willing to pay $5 each month for the right to use Facebook, or demand $100 to give up that right. In discrete choice experiments, the median value might turn out to be $50. But what are the effects of Facebook on their actual experience? Are they enjoying life more, or less, or the same? Those are the more important questions. WTP and WTA numbers, and the outcomes of discrete choice experiments, are best understood as reflecting people's predictions about effects on well-being, translated into monetary terms. The actual effects are the gold standard; they are what matter (Bronsteen *et al.*, 2013; Sunstein, 2018).[7]

The epistemic challenge

There is a larger point here. When people buy goods or services, they are usually making forecasts about welfare effects. The question might be whether to purchase a new laptop, a new automobile, a new table or a new home. To know how to answer that question, they must make a prediction about the effects of the purchase on their welfare. I have noted that if the good is familiar and if the chooser has experience with it, the prediction problem might not be so serious. But even in such cases, that problem has other dimensions, if it is to be solved properly. *The chooser has to figure out the welfare effects of alternative uses of the money*. That is a massively complex endeavor.

In a sense, the chooser is in the position of a social(ist) planner, as discussed by Friedrich Hayek (1945): he or she faces a serious epistemic problem. In the case of the planner, of course, the problem is that the market will incorporate dispersed knowledge, inaccessible to those who seek to set prices or to decide quantity. In the case of the chooser, the problem is that at Time 1, too little may be known about experiences at Times 2, 3, 4, 5, 6 and so forth. The chooser may lack important facts about those items for which he or she is deciding how much to pay. The chooser also may lack facts about his or her future

6 I am bracketing the possibility that the answers may reflect reactions – cognitive or emotional – to being asked the questions, as in the case of protest answers.

7 On two of the different components of well-being – pleasure and purpose – see Dolan (2014). It is possible that for many users of social media, pleasure is increased, but not purpose. It is possible that for many users, neither pleasure nor purpose is increased, and use is in the nature of an addiction, reducing rather than increasing welfare. It is also true that an analysis of welfare effects will ultimately lead to serious philosophical issues; see Adler (2011).

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self – about exactly what he or she will be like, and like. The problem is especially acute if people are changed in relevant ways.

As I have emphasized, the epistemic problem is harder for some options than for others. As between ice cream and cake, people may know what will promote their welfare. They also have a rough-and-ready sense of alternative uses of the money; even if they do not, the stakes are not so high. But for many options, people may lack experience. This is certainly true for both good and bad experiences of various kinds. What is it like to vacation in Bermuda? To see the Mona Lisa? To go to the best restaurant in Los Angeles? To have a serious concussion? To live with ringing in the ears or chronic bronchitis? To have heart disease? To lose a child? The prediction problem is formidable. And yet the WTP measure requires people to try to solve it, certainly when they are deciding how much to pay to eliminate risks.

For social media platforms, some of these problems dissipate. Users have relevant experience; the platforms are part of their lives. For that reason, we might trust WTP or WTA measures, if expressive values could be purged, and we might think that discrete choice experiments tell us something important. Even so, welfare is the master value, and monetary amounts, however elicited, might not tell us everything that we need to know.

Answers to hard questions about the welfare effects of social media platforms are starting to emerge (Valenzuela *et al.*, 2009; Kloss *et al.*, 2013; Tandoc *et al.*, 2015; Hu *et al.*, 2017). The results are both complicated and mixed. Use of Facebook and other social media platforms may well have different effects on people with different personality traits and on different demographic groups (Kloss *et al.*, 2013). It certainly has different effects on qualitatively different *components* of well-being (Valenzuela *et al.,* 2009). Moreover, Facebook does not provide a uniform or unitary experience. For many people, such platforms appear to be WTGs. Different uses of Facebook, and different ways of spending time on the platform, undoubtedly have different effects on users' well-being. For both private and public institutions, there is a pressing need to learn more.

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References

Adler, Matthew (2011), *Well-Being and Fair Distribution*, Oxford, UK: Oxford University Press.

https://doi.org/10.1017/bpp.2018.34 Published online by Cambridge University Press

Bewley, Truman (1999), *Why Wages Don't Fall During a Recession*, Cambridge, MA: Harvard University Press.
Bronsteen, John *et al.* (2013), 'Well-Being Analysis vs. Cost-Benefit Analysis', *Duke Law Journal*, **62**: 1603–1689.
Brookshire, Dan and Don Coursey (1987), 'Measuring the Value of a Public Good: An Empirical Comparison of Elicitation Procedures', *American Economic Review*, **77**: 554–566.
Brynjolfsson, Erik *et al.* (2018), 'Using Massive Online Choice Experiments to Measure Changes in Well-Being', *NBER Working Paper* No. 24514. Available at http://www.nber.org/papers/w24514.
Dietz, Simon and Frank Venmans (2017), 'The endowment effect and environmental discounting', available at http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/2016/08/Working-paper-233-Dietz-Venmans-updateMarch17.pdf
Dolan, Paul (2014), *Happiness By Design*, New York, N.Y.: Avery.
Ericson, Keith and Andreas Fuster (2013), 'The Endowment Effect', *NBER Working Paper* No. 19384. Available at http://www.nber.org/papers/w19384.
Frederick, Shane *et al.* (2009), 'Opportunity Cost Neglect', *Journal of Consumer Research*, **36**: 551–559.
Hammock, Judd and G. M. Brown (1974), 'Waterfowl and Wetlands: Toward Bioeconomic Analysis', Baltimore, MD: Resources for the Future.
Hayek, Friedrich (1945), 'The Use of Knowledge in Society', *American Economic Review*, **35**: 519–530.
Hu, Xiaomeng *et al.* (2017), 'The Facebook Paradox: Effects of Facebooking on Individuals' Social Relationships and Psychological Well-Being', *Frontiers in Psychology*, **8**: 87–94.
Isoni, Andrea *et al.* (2011), 'The Willingness to Pay-Willingness to Accept Gap, the "Endowment Effect," Subject Misconceptions, and Experimental Procedures for Eliciting Valuations: Comment', *American Economic Review*, **101**: 991–1011.
Kahneman, Daniel *et al.* (1986), 'Fairness and the Assumptions of Economics', *Journal of Business*, **59**: S285–S300.
Kahneman, Daniel *et al.* (1998), 'Experimental Tests of the Endowment Effect and the Coase Theorem', *Journal Political Economics*, **98**: 1325–1348.
Kloss, Ethan *et al.* (2013), 'Facebook Use Predicts Declines in Subjective Well-Being in Young Adults', *PLOS One*. Available at http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0069841
Kogler, Christoph *et al.* (2013), 'Real and hypothetical endowment effects when exchanging lottery tickets: Is regret a better explanation than loss aversion?' *Journal of Economic Psychology*, **37**: 42–53.
McCaffery, Edward *et al.* (1995), 'Framing the Jury: Cognitive Perspectives on Pain and Suffering Awards', *Virginia Law Review*, **81**: 1341–1420.
Morewedge, Carey K. and Colleen E. Giblin (2015), 'Explanations of the Endowment Effect: An Integrative Review', *Trends in Cognitive Sciences*, **18**: 339–348.
Plott, Charles and Kathryn Zeiler (2005), 'The Willingness to Pay-Willingness to Accept Gap, the 'Endowment Effect,' Subject Misconceptions, and Experimental Procedures for Eliciting Valuations', *American Economic Review*, **95**: 530–545.
Posner, Eric and Cass R. Sunstein (2017), 'Moral Commitments in Cost-Benefit Analysis', *Virginia Law Review*, **103**: 1809–1860.
Rowe, Robert *et al.* (1980), 'An Experiment on the Economic Value of Visibility', *Journal of Environmental Economics and Management*, **7**: 1–19.
Sunstein, Cass (1993), 'Endogenous Preferences, Environmental Law', *Journal Legal Studies*, **22**: 217–254.
Sunstein, Cass (2002), 'Switching the Default Rule', *NYU Law Review*, **77**: 106–134.

https://doi.org/10.1017/bpp.2018.34 Published online by Cambridge University Press

Sunstein, Cass (2008), 'Illusory Losses', *Journal Legal Studies*, **37**, S157.
Sunstein, Cass (2018), *The Cost-Benefit Revolution*, Cambridge, MA: MIT Press.
Tandoc, Edson *et al.* (2015), 'Facebook Use, Envy, and Depression among College Students,' 43 *Computers in Human Behavior*, **43**: 139–146.
Thaler, Richard H (2015), *Misbehaving: The Making of Behavioral Economics*, New York, NY: W.W. Norton & Co.
Valenzuela, Sebastiàn *et al.* (2009), 'Is there social capital in a social network site?: Facebook Use and college students' life satisfaction, trust, and participation', *Journal of Computer-Mediated Communication*, **14**: 875–901.

https://doi.org/10.1017/bpp.2018.34 Published online by Cambridge University Press