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Behavioral Economics

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Exactly 100 years ago, the *JPE* was poised to be at the forefront of the field that would eventually come to be called behavioral economics. John Maurice Clark, a *JPE* editor, University of Chicago faculty member, and son of John Bates Clark, authored the lead article of the January 1918 issue titled "Economics and Modern Psychology: I." (Part II appeared in the next issue.) His message was a simple one: "The economist may attempt to ignore psychology, but it is a sheer impossibility for him to ignore human nature. . . . If the economist borrows his conception of man from the psychologist, his constructive work may have some chance of remaining purely economic in character. But if he does not he will not thereby avoid psychology. Rather he will force himself to make his own, and it will be bad psychology" (4).

A few years later Clark left Chicago to take the position his father had once held at Columbia, and it seems fair to say that the subsequent editors of the *JPE* did not take up his call to arms. Behavioral economics papers have made only scattered appearances in the journal in the subsequent century.¹

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¹ To put a tiny bit of data behind this assertion, I counted the number of papers published in a few top journals that are cited in Stefano DellaVigna's recent survey paper in the *Journal of Economic Literature*. The tally is *QJE* 32, *AER* 21, *Journal of Finance* 16, and *JPE* 10. And my informal sense is that the 10 *JPE* papers contain a greater proportion that is not behavioral, as compared to those in the *QJE* or *AER*.

As Herbert Simon once said, the term behavioral economics is a bit strange. “What ‘non-behavioral’ economics can we contrast with it?” he asked (Simon 1987, 221). One answer to this question is the style of economics that the *JPE* is perhaps best known for: price theory à la Chicago School led by the intellectual giants Gary Becker, Milton Friedman, and George Stigler. Becker’s research goal was to apply the standard tools of maximizing behavior to study a wide variety of topics that were not then part of the domain of economics including addiction, crime, discrimination, marriage, divorce, childbearing, and social interactions.

Becker acknowledged that by applying the tools of economics to such topics he was pushing the envelope. In his Nobel address he discusses this explicitly (Becker 1993). “I have intentionally chosen certain topics for my research—such as addiction—to probe the boundaries of rational choice theory. . . . My work may have sometimes assumed too much rationality, but I believe it has been an antidote to the extensive research that does not credit people with enough rationality” (402).

Becker’s last sentence suggests an alternative definition of behavioral economics: crediting people with just the right amount of rationality and human foibles. The trick is in figuring out what is just the right amount. The approach taken by most behavioral economists has been to focus on a few important ways in which humans diverge from *homo economicus*.

The basic assumption of standard economic theory is that among all the affordable consumption bundles, people choose the best one. One way that assumption might fail is if the utility maximization problem is too hard to solve; this is the problem of bounded rationality. Another cause of nonmaximizing behavior is a lack of willpower. The morning after, many decide that the previous night included at least one drink too many. Such self-control problems are the subject of my first publication in the *JPE* (Thaler and Shefrin 1981), and one of the first behavioral economics papers published in the journal since Clark’s.²

Shefrin and I tried to modify the standard approach as little as possible to accommodate the struggle that people commonly face when choosing between an immediate small pleasure and larger delayed reward. Following Adam Smith’s *Theory of Moral Sentiments* (1759), our model endows people with two conflicting sets of preferences, one belonging to a myopic “doer” and the other to a farsighted “planner.” The doer lives just for one period and cares only about consumption in that period. The planner seeks to maximize the integral of doer utilities and so sometimes wishes to constrain or influence the doer’s choices.

² I cite one earlier paper below. This is a good time to acknowledge that I have likely missed some important behavioral papers both before and after 1981. My apologies to the authors of the papers I have missed. Blame it on bounded memory and attention.

One implication of the planner-doer model is that individuals can be helped by market-supplied commitment strategies. Thaler and Benartzi (2004) provide evidence to support this prediction. Benartzi and I created a strategy to help reluctant savers that we called “Save More Tomorrow.” Organizations offer their employees an opportunity to sign up for a program (starting in a few months) in which their pension contribution rates are increased each year when they get a pay raise. Standard economic theory predicts that no one would join such a program (they would not think they needed it) and that if they did, it would not change their savings rates (since they were already saving the optimal amount). The paper, published in a special issue of the *JPE* honoring my advisor Sherwin Rosen, reported the effects of the program in the first firm to try the idea. The results were striking: 80 percent of those offered Save More Tomorrow chose to join, and those who joined more than tripled their savings rates in just 4 years.

Kaur, Kremer, and Mullainathan (2015) study another type of commitment strategy offered by an employer, this time in the context of increasing output. The article reports on a yearlong experiment in which piece rate workers were offered a dominated contract on randomly chosen days. The employees could set a daily goal for themselves with the proviso that if they meet the goal they are paid normally, but if they fail to meet the goal they are paid only half the usual rate. Workers chose such contracts fully 36 percent of the time, and they were wise to do so. For those who opted in to the dominated contract, output (and thus pay) increased by 6 percent.

One of the most powerful findings of behavioral economics is “loss aversion,” the psychological tendency to feel losses more acutely than gains. As Adam Smith (1759) put it, “Pain . . . is, in almost all cases, a more pungent sensation than the opposite and correspondent pleasure” (1981, III, ii, 176–77). Although Daniel Kahneman and Amos Tversky (1979) and I (1980) had earlier written about this phenomenon, its empirical validity was still very much in question when Kahneman, Jack Knetsch, and I submitted an experimental paper on the subject to the *JPE*, later published in 1990.

In the experiment we randomly assigned half the subjects to receive some object (often a coffee mug), with the other half getting nothing. We then conducted a market for the mugs in which both buyers and sellers stated their reservation prices. Since transaction costs were negligible and the objects were randomly assigned, the Coase theorem predicts that roughly half the mugs will change hands so that subjects who value mugs the most end up owning them. Our hypothesis was that fewer than half the mugs would trade because owners would regard a trade as a loss. This hypothesis was strongly supported. In a typical experiment, the expected

number of trades was 11 but the empirical average was only 3.4. As predicted by loss aversion, median reservation prices for selling the mug were roughly twice the median prices for buying the mug.

The editor handling this paper was George Stigler. He sent us back a rejection letter based on a highly critical referee report from someone Stigler described as a “heavyweight in the field.” The referee said that income effects could explain our results since those who received the mugs had received a windfall relative to those who did not. After taking a few days to calm myself down (a good self-control strategy) I wrote back on behalf of my coauthors (who were both away traveling) explaining why the referee’s comments could not be taken seriously, either theoretically or empirically. First, the marginal propensity to spend windfalls on university insignia coffee mugs must be minuscule. Second, one experiment explicitly tested and rejected this explanation. Stigler wrote back in his usual witty style saying that *JPE* stands for *Journal of Perspicacity and Equity*, and he offered to send both my letter and the original referee report to another referee to adjudicate. That referee said that if forced to choose between our view and that of the original referee, he would side with us, which is how the paper came to be accepted.³

Perhaps the subfield of economics in which the behavioral approach has had the greatest impact is finance, and although the *JPE* has published quite a few influential articles on the subject of financial economics, not many have been behavioral. One exception is the paper by De Long et al. (1990), “Noise Trader Risk in Financial Markets,” which takes on a frequent misconception about the possible role of less than fully rational investors—“noise traders”—in well-functioning asset markets. De Long et al. quote the conventional Chicago wisdom (e.g., Friedman 1953; Fama 1965) that noise traders can have little effect on prices and that any mispricing cannot last long before being wiped out by rational arbitrageurs.

De Long et al. make the crucial observation that arbitrageurs are likely to be risk averse and to have short horizons (in part because they are usually managing other people’s money). Thus when attempting to exploit mispricing caused by noise traders, arbitrageurs run the risk that whatever bias is inducing the noise traders to be excessively optimistic or pessimistic about a security might continue or even strengthen before the arbitrageurs have made their profits. This “noise-trader risk” prevents ar-

³ The self-control paper also involved quite a bit of back and forth with the editor Sam Peltzman, who somewhat reluctantly agreed to accept it rather than continue to exchange letters. Both papers were published as the last paper in the issue, which I took as a signal that they were considered the paper the editors were most ashamed to publish. It is gratifying that both papers were ranked highly on the list of most-cited papers compiled by the editors for this issue. Perhaps people read the *JPE* from back to front.

bitrage from eliminating the price effects of noise traders. Indeed, in the De Long et al. model, noise traders actually make more money than rational traders because they inadvertently bear more noise trader risk, which because of the risk aversion of the rational traders pays a positive risk premium. So in this model noise traders can affect prices and they do not necessarily go broke—they might even get rich!

It is one thing to demonstrate that noise traders matter in a theoretical model; showing that noise traders influence actual market prices is another matter. How does one prove that a price is “wrong”? One approach is to exploit the basic building block of modern finance, the law of one price: two identical assets must sell for the same price. One counterexample cited by De Long et al. is the case of closed-end funds in which the price of a fund’s shares should be equal to the net asset value of the securities the fund owns. But in fact closed-end funds typically sell at a discount relative to net asset value and occasionally sell at a premium.

Owen Lamont and I (2003) published a paper on this theme in the *JPE* with the obnoxious title “Can the Stock Market Add and Subtract?” As you might guess by now, the answer to the question posed by the title is “no.” Lamont and I study equity carve-outs, focusing on the prominent example of Palm and 3Com. Here is the story in brief. Palm, a maker of then-sexy hand-held computers, was owned by 3Com, a profitable technology company. On March 2, 2000, 3Com sold a small fraction of its stake in Palm via an initial public offering (IPO). In this carve-out, 3Com retained 95 percent of the shares of Palm but announced that, pending an expected approval by the Internal Revenue Service, the remaining shares would be distributed to 3Com shareholders. At that point, 3Com shareholders would receive about 1.5 shares of Palm for every share of 3Com that they owned.

The law of one price implies in this case that the price of 3Com must be at least 1.5 times the price of Palm, since equity prices can never be negative. However, on the day of the Palm IPO, Palm’s shares traded at \$95.06 a share, but 3Com ended the day trading at \$81.81, well short of the lower bound of \$145 implied by the law of one price. Implicitly, the market was pricing the 3Com “stub” (the company once Palm was gone) at negative \$22 billion!

Though it did not continue to invest much in the topic, the *JPE* published an early and influential paper on nonstandard beliefs, which arise when people do not use information optimally as traditional economic theory says they should.⁴ Camerer, Loewenstein, and Weber (1989) demonstrate that people display a “curse of knowledge,” in the sense that they

⁴ A recent theoretical paper in the broad theme of biased beliefs by Bordalo, Gennaioli, and Shleifer (2013) studies cases in which “salient” features of the environment are given excessive weight.

have a hard time recognizing that others do not know what they know.⁵ If Sally has written the code for some app, she is likely to underestimate the difficulty neophytes will have learning how to use the app. The problem is that Sally is unable to simulate how she would think in the absence of her expertise. Camerer et al. demonstrate the curse of knowledge in experimental markets in which traders with more information make systematic errors that affect market prices.

The editors gave us a limited amount of space for these essays, but that has not proved to be a major problem for the topic to which I was assigned. I cannot say for sure whether the small number of behavioral economics papers published in the *JPE* was a shortage of supply or demand, but there are entire branches of behavioral economics that have not made (much of) an appearance. Looking over DellaVigna's (2009) review article, one notices many themes that have been largely or entirely absent from the pages of the *JPE*, such as framing effects, menu effects (suboptimal diversification, effect of defaults, choice overload), peer pressure, and emotions.

When I came into the profession the *JPE* had a well-deserved reputation for having eclectic tastes. This was one reason Shefrin and I submitted our paper on self-control to the *JPE*. As the field of behavioral economics continues to grow, it will be a shame if the *JPE* does not include more behavioral research in its pages. I suggest the editors all read that paper by John Maurice Clark. But if the *JPE* continues to eschew papers on such topics, one can always quote Stigler and Becker (1977): "De gustibus non est disputandum."

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⁵ A special case of the curse of knowledge is "hindsight bias" (Fischhoff 1975). Once people know that something happened, they remember thinking that they knew it all along.

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Corporate Finance

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The *Journal of Political Economy* and Chicago economists have played a major role in the development of the modern field of corporate finance,